Warehouse Finance and Warehouse Receipt Systems

A GUIDE FOR FINANCIAL INSTITUTIONS IN EMERGING ECONOMIES

IN PARTNERSHIP WITH

IFC International Finance Corporation
World Bank Group

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2121 Pennsylvania Avenue, N.W.
Washington, D.C. 20433
Internet: www.ifc.org

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Preface

Many countries—notably those in Sub-Saharan Africa and particularly those with significant agricultural economies—lack eligible loan collateral. An absence of secure long-term land use rights and difficulties in foreclosing on real estate used in loans are largely responsible for this lack. Given this circumstance, it is vital for these countries—and their banks—to fully develop the collateral potential of commodity stocks.

Development of warehouse finance and warehouse receipt systems can support increased access to finance for the agricultural sector, as well as other sectors. In particular, efficient and trusted public warehousing services offered under a fully developed warehouse receipt system can have a great impact on rural areas, aiding in the development of strong agricultural markets and opening them up to diverse financial services. And the use of electronic warehouse receipt documentation makes even more secure and efficient systems possible than in the past.

Despite these many benefits, progress in organizing public warehousing and warehouse receipt systems has been rather variable across regions and countries. It has often been slowed by political economy factors and a lack of coordinated action by stakeholders.

This guide provides a clear and comprehensive overview of the broad warehouse finance landscape, as well as specific approaches banks can employ in successfully financing agricultural commodities. The primary audience for this guide is bankers in emerging markets. Policy makers, government officials, and stakeholders will also find the guide useful; they should refer to IFC's guide, *Establishing a Warehouse Receipts System: Guide on Legal Dimensions and Reform*, for detailed information on developing a full warehouse receipt system.

This guide consists of 10 sections and 9 appendixes:

- Section 1 contains an overview of the guide.
- Sections 2–5 provide information on the workings and legal underpinnings of warehouse financing in its various forms. Section 4 briefly presents information on legal aspects.
- Sections 6–9 present guidance for banks in assessing existing warehouse financing systems and in developing internal policies and risk management procedures to best offer warehouse financing services to clients.
- Section 10 includes detailed accounts of experiences from a variety of countries that have developed public warehousing systems in whole or in part. It also highlights the

opportunities and challenges for financing within these varied contexts.

- The appendixes contain a range of sample documentation and background information. Appendix G presents a case study that may be used in training exercises.

Sub-Saharan Africa is featured prominently throughout the guide, reflecting its extensive recent and relevant experience with warehouse finance. This emphasis notwithstanding, the information contained in the guide is relevant to all developing and transitional economies.

Acknowledgments

This guide was developed within IFC's Access to Finance Global Agrifinance Advisory Program, under the overall guidance of Panos Varangis and with the support of team members Heather Miller and Davorka Shepherd.

We would like to thank Jonathan Coulter and the team from Rabo International Advisory Services B.V. (Alexander Belozertsev, Hans Bogaard, Marc Van Strydonck, and Wim Verzijlenberg) commissioned by IFC to produce this guide. We also acknowledge the significant contributions of Nicholas Budd and Lamon Rutten to key sections of the guide.

We thank IFC team members Dave Chalila, Mamo Mihretu, Damien Shiels, and Makiko Toyoda for their contributions.

We also thank the following peer reviewers from IFC and the World Bank Group: Rolf Behrndt, Raiomand Billimoria, Hans Dellien, Ajai Nair, Maria Pagura, Roy Parizat, Gary Reusche, and Marc Sadler.

Our appreciation to Nita Congress for editing, design, and production services and to Aichin Lim Jones for coordination and photo research.

This publication was made possible thanks to funding from the Netherlands Ministry of Foreign Affairs through the Netherlands–IFC Partnership Program.

Abbreviations

CECAM	Caisses d'Epargne et de Crédit Agricole Mutuels (Madagascar)
CMA	collateral management agreement
CWC	Central Warehousing Corporation (India)
ECX	Ethiopia Commodity Exchange
e-WR	electronic warehouse receipt
FAO	Food and Agriculture Organization of the United Nations
IFC	International Finance Corporation
JSE	Johannesburg Stock Exchange
LTV	loan to value
MCP	member client position report
MCX	Multi-Commodity Exchange Ltd. (India)
NBHC	National Bulk Handling Corporation (India)
NCDEX	National Commodities and Derivatives Exchange Ltd. (India)
NCMSL	National Collateral Management Services Limited (India)
OTC	over the counter
PARECAM	Programme to Support Resilience to Food Crises in Madagascar
repo	repurchase agreement
RUDI	Rural Urban Development Initiatives (Tanzania)
SAFEX	South African Futures Exchange
SMA	stock monitoring agreement
SPC	special-purpose company
WR	warehouse receipt

All dollar amounts are U.S. dollars unless otherwise indicated.

Glossary

Bonded warehouse or customs-bonded warehouse. Secured facility supervised by customs authorities where dutiable landed imports are stored pending their re-export or release on assessment and payment of import duties, taxes, and other charges.

Carrying costs. The aggregate cost of "carrying" or storing inventory—i.e., the storage, security, spoilage, maintenance, insurance, and other such charges associated with warehousing goods plus the costs of financing the goods while in storage (interest charges and bank fees).

Collateral manager. Company that ensures the integrity of warehouses and the quality and quantity of commodities stored therein so these can be offered as collateral for a loan. The term is largely synonymous with warehouse operator, warehouse manager, warehouse management agency, and warehouseman, but "collateral manager" specifically refers to the company's role as a custodian working on behalf of the lender.

Collateral management agreement. An instrument that allows a product owner to secure a loan using the commodity as collateral. It is usually a three-party agreement between the commodity owner/borrower, the collateral manager, and the bank, although four-party agreements involving these entities plus the buyer are also common.

Commingle. Where commodity/grain of the same type, variety, and grade (where appropriate) deposited by two or more depositors are held together in storage so that any part of the common deposit may be issued in delivery against a warehouse receipt irrespective of the original depositor.

Commodity exchange. A physical or virtual (electronic) location where buyers and sellers are brought together to trade through a group of registered brokers. Most commodity exchanges around the world trade in agricultural products (wheat, barley, sugar, maize, cotton, cocoa, coffee) and materials such as oil and metals. Many have diversified to provide facilities for trading currency and other financial instruments.

Central depository. A company or autonomous unit within an organization established for the central handling of securities in dematerialized form with specific protection for safe custody of documents. It may also be able to handle trade, clearance, settlement/postsettlement processing, and information functions. In this guide, the term refers to the unit within a bank responsible for controlling physical warehouse receipt documents or the external organization responsible for maintaining electronic warehouse receipts.

Certificate of pledge. A document provided by the warehouse operator to the depositor who may

use it to take out a loan—e.g. a farmer who has deposited goods in the warehouse can use a certificate of pledge to borrow against those goods. Certificates of pledge are only used in legal systems that provide for double warehouse receipts.

Certificate of title. Formal commercial document that confers and/or proves ownership of the underlying goods.

Double warehouse receipt system. A system in which the warehouse operator issues a two-part receipt consisting of a certificate of pledge and a certificate of title.

Field warehousing. An arrangement whereby a collateral manager takes temporary control of a client's warehouse under a collateral management agreement, usually leasing it for a nominal fee.

Full out-turn guarantee. A guarantee the warehouse operator provides against a possible shortage of goods that may occur between receipt and dispatch of a cargo, resulting in compensation for the client in the event of a quantity loss.

Full out-turn guarantee of quality. Term used by some collateral managers to describe a service that covers differences in quality detected between the receipt and dispatch of a cargo.

Identity-preserved commodities. Where specific commodities are held in storage or tracked in shipment so they remain attributable to a specific depositor to prevent loss through commingling during normal storage, handling, and shipping procedures. The commodities may or may not be of a recognizable grade but must meet storage criteria.

Loan-to-value ratio or advance ratio. The loan amount divided by the value of the pledged collateral or warehouse receipts. The ratio may also be calculated as the inverse—the **collateral coverage ratio**, i.e., the value of the pledged collateral or warehouse receipts divided by the corresponding loan amount.

Negotiable receipt. A warehouse receipt that is not only transferable but confers upon the transferee a direct interest in the underlying property free of any outstanding claims or charges not noted on the receipt.

Public warehouse. A storage facility that offers its services to all firms and persons.

Release order/warrant. A document issued by a lender requiring a warehouse operator to release commodities to a given party.

Silo certificate. A type of warehouse receipt used in South Africa under contractual law.

Single warehouse receipt system. A system in which the warehouse operator issues one receipt representing the commodity. This system is distinct from a double warehouse receipt system.

Stock monitoring agreement. An agreement by which an inspection agency provides periodic monitoring of inventory levels and (usually) quality of commodities stored or shipped to a location to ensure traceability within an agreed time frame. The inspection agency does not provide any control over the commodities, nor does it guarantee their continuing presence or maintenance of quality.

Transferable warehouse receipt. Receipt allowing transfer of ownership or other rights to a new holder, e.g., a bank (where the stored commodity is pledged as security for a loan) or trade counterparty.

Trust receipt. A legal document by which one individual lends money to purchase something and the borrower promises to hold the item for the benefit of the lender until the debt is paid.

Warehouse receipt. Issued by a warehouse operator as evidence that specified commodities of stated quantity and quality have been deposited at particular locations by named depositors. The warehouse operator holds the stored commodity by way of safe custody. Receipts can be used as a financing instrument, as secure collateral for commodity financing backed by an appropriate legal and regulatory framework, and/or as a trade instrument allowing transfer of ownership without physical delivery of the commodity.

1 Introduction

This guide describes the use of stored commodities as collateral for financing and their representation as warehouse receipts (WRs)—i.e., as paper or electronic documents that can be used for financing as well as trading the underlying commodities. The guide is designed to help bankers lend against commodities stored in warehouses in a wide variety of country contexts. The information is most applicable to private or field warehouses used in collateral management agreement (CMA) or stock monitoring agreement (SMA) arrangements or public warehouses operating under a full WR system framework that regulates and monitors such warehouses.

The nature of warehouse finance and warehouse receipt systems

In this guide, the term "warehouse" is used in its generic sense to cover a range of storage facilities including silos, bunkers, and storage tanks or vaults as well as traditional warehouses. The warehouses covered by this guide can be private, field, public, cooperative, government, or bonded. Warehouses can only be used in financing if they meet certain conditions.

Warehouses must have the confidence of the business and banking communities in their country of operation or employ trusted warehouse operators (sometimes known as collateral managers) to take control of them, if necessary. Additionally, the warehouse framework or the individual operators need to provide adequate financial guarantees against the major risks involved (fire, fraud, etc.).

As a seal of approval, warehouses may also be government inspected and licensed, or accredited in some other way—e.g., by an industry association or commodity exchange.

A range of depositors may use these facilities to store nonperishable agricultural and fishery commodities, nonagricultural commodities, or manufactured products as a means of obtaining financing and/or trading their stock. This guide is mainly concerned with agricultural commodities. Depositors in this instance are likely to be individual farmers, farmer organizations, processors, traders, exporters, and food reserve agencies; some of these same players may also be buyers of the warehoused commodities.

Various alternative arrangements exist for supervising or controlling warehoused stock to enable financing, including direct bank supervision, SMAs, CMAs, and supervisory regulation via public warehousing. SMAs simply ensure that goods are in the warehouse at a certain time, and the SMA agent generally takes no responsibility to ensure continuous control over the stock. A CMA is a more secure arrangement—typically

a tripartite agreement between a collateral manager, a named depositor, and a bank—in which the collateral manager issues nontransferable WRs directly to the bank. In these cases, stock monitoring and collateral management services facilitate financing between the bank and the depositor (borrower) by assuring the bank of the maintenance of its collateral in the form of commodities to secure its loan.

This guide is primarily concerned with situations where banks and other lenders advance funds against the security of specific commodities (or their fungible equivalent) that serve as collateral. In practice, it is also common for banks to simultaneously take charge of some or all of a borrower's assets through a floating charge (widely used in common law systems), an enterprise pledge (mostly used in civil law countries), or similar means. Some of the material presented here is relevant to such situations, but in general the focus is on lending against specific named commodities stored in a warehouse.

A different arrangement is needed to use WRs as instruments of trade, whereby the warehouse operator issues a transferable WR to the depositor, not directly to the bank. Transferable WRs are usually issued by public warehouses—i.e., warehouses open to deposits by the public in general. Note that public warehouses are not (necessarily) publicly owned. For the most part, they are privately owned and operated businesses that provide storage and other standard services (drying, cleaning, bagging, etc.) to the public at large, at an advertised tariff of charges. In some countries, they are trading companies that provide public warehousing services as an adjunct to their trading business. Oversight of such facilities is necessary to assure the public and banks that storage and services meet certain minimum criteria for the maintenance of stored goods' quality and quantity.

Banks will normally lend depositors a specified percentage of the current value of the commodity, thus taking into account the risk of a decline in value of the stored goods and any costs to be incurred when selling the goods in case of loan default. Depositors use the finance for a variety of purposes: farmers to buy inputs for the next season or for other revenue-generating activities, or to meet household consumption requirements while awaiting optimal selling conditions; traders to purchase additional commodities; processors to secure supplies as part of structured trade financing facilities.

Development and banking rationale

Warehouse finance already plays a vital role in the international trade and processing of developing and transitional economies, typically in the form of direct bank supervision, SMAs, and CMAs. Smaller borrowers (small and medium-size enterprises, farmers, and farmer organizations) usually have little access to such financing. Security considerations generally dictate the use of the more secure CMA mechanism, but CMA fees are set on a per site basis, resulting in high fixed costs that are often unaffordable for small borrowers. Warehouse financing tends to be concentrated around ports or in support of large-scale processors, and is scarce in areas of agricultural production. Notably, in Sub-Saharan Africa, warehouse financing is much used in the import of foodstuffs from other continents, but relatively little used in support of domestic agriculture, which remains severely underleveraged.

There is an opportunity to increase the reach and impact of these services to a broad range of domestic agricultural market participants by improving standards of service provision, expanding in up-country areas, and developing public warehousing services where depositors are charged pro rata according to the number of tons handled. Public warehouses can add considerable value to agricultural products, notably by preventing post-harvest losses, standardizing and certifying quality, guaranteeing performance of sales contracts, providing in-store transfer of ownership, and facilitating competitive trading in WRs.

Banks in developing countries are often constrained in their lending and suffer from a shortage of reliable corporate borrowers, lack of title deeds to serve as collateral, and difficulty in foreclosing on these deeds. As a result of these constraining

factors and limited lending opportunities, banks in developing countries often remain overly liquid. Warehouse financing provides an important avenue to increase their penetration of local credit markets. To achieve this will require more professional and secure warehousing services, building in-house expertise at banks, and developing more structured financing arrangements.

The establishment of secure and reliable public warehousing systems can help banks develop markets for financial services among small and medium-size enterprises and farmer organizations, not only for lending against WRs, but for cross-selling other services including deposits, savings, money transfers, insurance, input credit, leasing, and personal loans. Public warehouses can also provide banks with highly liquid commodity collateral in the form of transferable WRs that can be sold to recover overdue debt.

In short, improvement and extension of warehousing systems can help developing countries better match supply and demand for finance, enabling banks to channel funds to underleveraged borrowers, particularly those in rural areas.

Warehouse infrastructure and operation, legal issues, and documentation

Warehouses should be in a good condition, be run professionally, and operate on a commercial basis. Depending on the commodity and type of operation, warehouse operators will often carry out ancillary functions such as grading, cleaning, drying, primary processing, and bagging. Lower-value commodities, such as grains, are normally commingled in a single fungible mass of a given grade (meeting tolerances for moisture content, defects, and foreign matter) so as to economize on storage space. Commingling also facilitates standardization of quality as well as operations and trading.

The warehouse operator's precise duty of care varies according to commodity and type of operator. Public warehouses are generally more willing to guarantee full out-turn in terms of both quantity and quality than collateral managers not working within a public warehousing framework. Many countries have parastatals with substantial warehousing capacity that could be leased or sold to private players willing to use them for collateral management or operate them as public warehouses.

Banks that wish to lend against WRs will first need to consider the existing legal framework. Key considerations in this regard are whether the country's laws and legal practices recognize a bank's security interest in WRs, treat them as documents of title, treat transferable WRs as negotiable instruments, enable rapid enforcement of a bank's rights in the event of default, and provide for a formal regulatory framework and the use of electronic WRs (e-WRs) and collateral registries. "Negotiability" means that the WRs confer upon the transferee a direct interest in the underlying property free of any outstanding claims against the transferor; this is a prerequisite to efficient transfer of title, as well as for the development of a secondary market in WR-backed loans.

The introduction of negotiable WRs should preferably be accompanied by the creation of a WR registry so as to minimize the risk of forgery. The move to a web-based e-WR system facilitates the establishment of a registry, since it requires a central server providing the data that a registrar will need and ensures an audit trail of past transactions. There has been a progressive movement from paper WRs to e-WRs, which is widely seen as advantageous in terms of security, speed, and cost. Banks are among the most enthusiastic stakeholders in countries where e-WR systems are adopted. Prerequisites to the success of such arrangements include a consistently high level of service from the system provider; strong maintenance and trouble-shooting; and—as with any innovative form of agricultural finance—heavy and sustained investment in the education of users such as depositors, banks, and buyers.

Issues and due diligence related to public warehousing systems

Banks may need to interact with public warehousing systems at three levels: as financiers, as participants in their development and design, and as members or shareholders of commodity exchanges that use them for delivery against contracts. In many countries—notably in Latin America—it is common practice for banks to establish their own warehousing companies and invest in warehouses.

Interaction with public warehouses may be the source of considerable advantages, but these can only be realized if the system works effectively and lenders' funds are at least as secure as they are under existing collateral management arrangements. Bankers should be prepared to ask some searching questions regarding aims, strategies, and implementation plans, as well as practical operation. These questions are discussed at length in section 6.

Issues and due diligence related to collateral management services offered outside of public warehousing frameworks

The collateral manager's role is to convert certain credit risks related to collateral into operational and liquidity risks, and to manage them as efficiently and completely as possible. The absence of a specific legal framework for WRs does not usually pose a major problem with nonnegotiable WRs issued under CMAs—although some countries' laws do not give adequate protection to lenders should the warehouse owner become bankrupt. Banks should carefully check local laws and legal practices and the experience of other lenders.

Banks embarking on warehouse financing should ensure they understand the sectors and commodities they are financing, including such aspects as storability, pricing, and the marketability of the specific type/grade of the commodity. They should also ensure that their staff is continuously trained in subjects relevant to collateral management. In selecting collateral managers, they should develop their own benchmarks addressing governance, managerial, and financial aspects; risk management and control systems; staff and training; and reputation of the collateral manager. Banks should adopt the attitude that "the devil is in the details" and carefully check the adequacy of documentation governing each CMA. They should also take care to avoid disputes that could occur in the event of an insurance claim; this means active involvement in the selection of insurers, strict attention to the wording of policies and their exclusions, and the avoidance of underinsurance. Banks should certify the suitability of the warehouse and make periodic spot checks during implementation of the CMA. They should carefully monitor documentation, stock levels, and warehouse performance, particularly regarding the release of goods. These issues are discussed in detail in section 7.

Elements for successful warehouse financing

A bank seeking to provide warehouse financing should first analyze existing commodity markets and trade financing arrangements with a view to assessing whether they justify investing in training, new policies, monitoring, and hiring of specialized staff. The bank should then ensure that it has staff members with the requisite skills and a reasonable understanding of the factors affecting commodity supply and demand, and invest in their training. It will need to systematize the collection and internal dissemination of bank data and market information for lending decisions on risk management. It should develop a clear high-level strategy for WR financing, a specific credit policy, and detailed risk management procedures—including a monitoring system that alerts staff to changes in collateral values triggering the need for collateral top-ups or other actions to react to or minimize market risks resulting from unforeseen drops in price.

Market risks call for active management, making use of commodity knowledge, a strong market monitoring and internal information system, a top-up clause, adjustment of the loan-to-value (LTV) ratio, and—where available—hedging. In few countries do players have effective access

to futures and options exchanges, but there may be occasions where a bank can hedge its client's position by buying over-the-counter (OTC) put options from a reputable and financially solvent market player such as an international trading company or grain miller.

To fully develop a warehouse finance offering, a bank should create a warehouse finance strategy that allows it to increase its exposure to existing agricultural clients and develop business with new clients. It should develop a good understanding of the motivations of each market segment (e.g., farmers, farmer organizations, traders, and processors) to develop a targeted marketing strategy; it could consider providing outreach or even educational support to each group.

Warehouse finance and receipting practices around the world

Experience and practices in warehouse finance and WR vary considerably across countries. In the United States, public warehousing originally developed through private initiative and was subsequently nurtured and regulated in a way that enhanced trust and facilitated its upstream development. South Africa provides a more recent example of successful public warehousing; here, transferable WRs are extensively used for financing, for trading grains and oilseeds, and as delivery instruments on the Johannesburg-based futures and options exchange. Some civil law countries in Europe, the former Soviet Union, and—especially—Latin America have adopted aspects of the general warehouse model, notably the issuance of double WRs, consisting of a certificate of title and a certificate of pledge.

India's warehouse infrastructure originally developed within, and is still dominated by, the public sector. In recent years, there has been significant growth in private sector investment. Warehouse operators, including professionally managed groups engaged in public warehousing, often belong to new electronic futures and spot exchanges that use WRs as the delivery instrument for large quantities of wide-ranging agricultural commodities. Although WR finance has grown rapidly, Indian banks continue to have numerous concerns, and a recently implemented official regulatory framework has weaknesses.

Various schemes have aimed to introduce public warehousing accessible to farmers and small and medium-size enterprises in Eastern Europe and the former Soviet Union; systems are most fully developed in Bulgaria, Hungary, and Kazakhstan. Similar initiatives have been launched in at least 11 countries of Sub-Saharan Africa besides South Africa. Here, the leading commodities targeted have been maize, cocoa, coffee, cotton, and paddy rice. In the case of maize, progress to date has been slow and difficult, largely due to unsupportive policy frameworks with a politically sensitive food crop. Progress has been faster with certain export crops in Tanzania (coffee and cashew) and Ethiopia (coffee, sesame, and pea beans). Further progress with public warehousing in Sub-Saharan Africa will depend on improved strategies and more effective coordination of the efforts of governments, the private sector, and the donor community. Several African countries have used village-based and microfinance-linked inventory credit schemes.

In most developing and emerging economies, public warehousing is the exception rather than the rule. CMAs, SMAs, and direct surveillance by banks account for most trade financing where the stock serves as collateral. Fraud has proved a major hazard associated with collateral management services in some Sub-Saharan African countries, increasing the cost of reinsurance coverage.

Section 10 provides more detail on worldwide experiences with warehouse finance; also see appendixes E and F for more about Ethiopia's experiences.

2 Overview of Warehouse Finance and Warehouse Receipt Systems

This section provides an overview of the main elements of and the processes involved in warehouse finance, which establishes a foundation and context for the more detailed sections to follow.

2.1 How warehouse finance operates

Warehouse finance, by definition, revolves around warehouses, a term used generically here to cover a range of storage facilities including warehouses, silos, bunkers, storage tanks, and vaults. Warehouses may or may not be licensed under a government scheme, or may be accredited in some other way—e.g., by an industry association or a commodity exchange.

A number of players, here referred to as depositors, may use warehouses to store a range of nonperishable agricultural and fishery commodities (e.g., maize, rice, wheat, barley, cotton, cashew, coffee, cocoa, oilseed, frozen fish, and fruit juice concentrate), agricultural inputs (e.g., fertilizers and herbicides), nonagricultural commodities (e.g., building materials, timber, minerals, and metals), and even manufactured goods (e.g., mobile phones, school books, spare parts, and cars). The depositors of such commodities may be individual farmers, farmer groups or cooperatives, traders, food processors, individuals, or corporate entities; they could also be parastatal institutions such as national food reserves or food aid agencies, such as the World Food Programme. However, some of these parastatals more often act as buyers of commodities than as depositors.

Warehouses can only enable commodity financing if they enjoy the confidence of the business and banking communities in their country of operation, or if trusted warehouse operators (sometimes known as collateral managers) are willing to take control of them, and if there is provision for certain guarantees against the major risks involved (fire, fraud, etc.).

The operator of the warehouse or collateral manager may issue documents called WRs, certifying that stocks have been deposited in the warehouse; these may be of either a transferable or nontransferable nature. A WR can be used both for financing, which enables the receipt to document the collateral provided as security to the bank; and as a trade instrument, which allows transfer of ownership of the underlying commodity while it remains in storage, thus eliminating the need for physical delivery of the goods to a different location.

2.2 Financing stored agricultural commodities

WR financing involves banks, microfinance institutions, or even buyers lending against warehoused

stock in which they hold a security interest until the goods have been sold, the proceeds collected, and the loan repaid. The warehouse operator or other collateral manager may guarantee the physical integrity and quality of the warehoused stock according to norms concerning duty of care. The bank will normally lend the depositor a specified percentage of the current value of the commodity; this is the LTV ratio, sometimes called the advance rate. The difference between the value of the commodity and the loan allows the bank to provide for

- any potential decrease in the value of the stored good caused by price volatility in the respective commodity market, and
- the costs it will incur when selling the goods in case of loan default.

Stock monitoring services

There are various arrangements by which banks seek to ensure the security of the collateral in the warehouse. The simplest involves direct supervision by bank staff. Sometimes the bank actually holds the keys to the warehouse, so that stock can only be accessed in the presence of authorized bank staff. The bank can delegate the supervisory role to an inspection company or collateral surveyor to periodically monitor the quantity under the terms of an SMA. However, the inspection or surveillance company is not financially responsible for any shrinkage that occurs during storage.

Banks use SMAs when they feel comfortable with the borrower in principle but need third-party reconciliation of the borrower's own reporting. The SMA allows the bank to monitor inventory levels of its collateral within a clearly defined time frame. In most developing and emerging economies, there are only a limited number of companies with which lenders are willing to engage under SMAs.

Collateral management services

Where this is not the case, lenders will require stock to be managed by a collateral manager; this manager is the custodian of the borrower's commodities as long as they are in the warehouse. Collateral managers are typically inspection/surveillance companies but may also be freight forwarders or owners of warehouses. The collateral manager is hired under the terms of a CMA, typically a tripartite arrangement between a collateral manager/warehouse operator,[1] a named depositor, and a bank. In some cases, the buyer of the commodities may be a fourth party to the CMA.

Storage under a CMA typically takes place in a warehouse owned or leased by the collateral management company or, less frequently, in a field warehouse. In either case, the collateral manager takes control of the warehouse of a client (depositor) for the purpose of implementing the CMA. Where the collateral manager owns or leases the warehouse in which the goods are stored, it hires and manages its own staff for all warehouse operations and collateral management services. The warehouse may contain commodities of various depositors/borrowers; these are separately maintained, handled, and managed under the terms of the respective CMAs.

In a field warehouse arrangement, the collateral management company temporarily leases a warehouse for a nominal fee, takes physical control, and puts its own staff in supervisory positions. The manager can then supervise the depositor's staff as they perform the operations of handling in, cleaning and drying, primary processing and bagging (if appropriate), storage, and handling out. Alternatively, the collateral manager may assume the labor contracts of these staff to ensure their loyalty or bring in its own staff to replace them. The collateral manager has legal control of the premises, holds the keys, supervises entry and exit of the goods, and is responsible for stock integrity on behalf of the bank.

In either case, the agreement between the parties is typically drawn up well in advance of the first deposit. Once goods are deposited, the collateral manager issues a nontransferable WR directly to the bank to certify that it is holding the goods

[1] The collateral manager is here considered the same as the warehouse operator, regardless of whether the manager owns or leases the warehouse.

as loan collateral, signaling that it may now lend to the depositor upon this security. The terms of the CMA ensure that the collateral manager does not release the goods to the depositor or a buyer until the bank surrenders the WR (through courier mail or electronically) and provides an authorization, typically a release order signaling that the loan has been repaid and the bank's security interest is released. Alternatively, the bank may release the WR once it has received some other form of security or guarantee of future payment, such as a trust receipt. Trust receipts are discussed in subsection 5.3.

Box 2.1 provides two examples of collateral management operations for commodities entering export trade; figure 2.1 diagrams the collateral management process.

Box 2.1 Examples of pre-export financing under collateral management

Frozen fish in East Africa

Until overfishing made the business unsustainable, several fish processing plants alongside Lake Victoria had profitable export operations. Their main constraint was lack of finance for working capital and to cover costs until receipt of payment from the importer. One large plant overcame this constraint by using a collateral management structure. Each day, plant officials bought tilapia on the various landing sites and arranged transport to the plant. On arrival, collateral management staff were on hand to verify the weight of the fish in each truck. The plant officials indicated each day's prices; the collateral manager verified these against the price indicators its agents were gathering in the same markets.

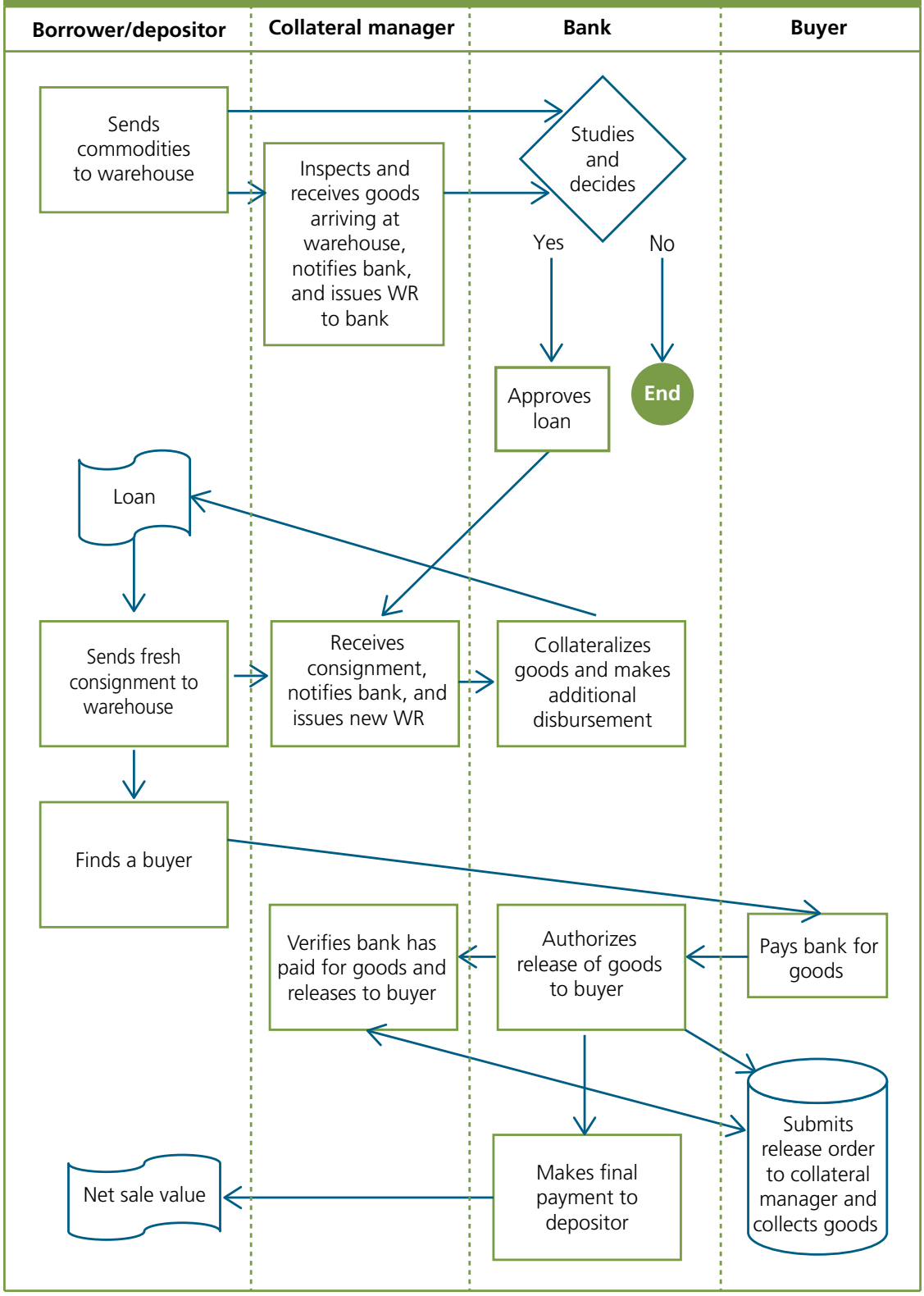
Once the fish were cleaned, they were frozen and stored in cold storage. At that point and until they were airfreighted to Scandinavia, the fish were under the control of the collateral manager, which provided all relevant data to the regional bank that was financing the transaction. The bank provided a working capital credit line with a limit that was automatically adjusted as a function of the value of the fish in the plant from receipt at the plant until payment by the final buyer. The plant received financing that was not only much cheaper than all other forms of available finance, but also moved in line with fish prices and seasonal credit requirements, without the need for frequent renegotiation of credit limits.

Financing exports of frozen concentrated orange juice

An exporter of frozen concentrated orange juice had, due to improper management of its refrigeration facility and incomplete insurance coverage, lost both its clients and its working capital. This posed great hardships for the orange farmers in the surrounding region, as the market for fresh oranges was too small to absorb their output. A new management team looked to solve the problem by arranging a financing agreement with a bank involving a field warehousing structure.

A collateral manager was brought in to take full control over the cold storage facilities where the frozen concentrated orange juice produced by the processing plant was stored pending shipment. The collateral manager reported to the bank on quantities received, and the bank released the corresponding loan advances to the company, enabling it to pay the farmers. The collateral manager also reported on various quality aspects, including providing charts of the temperatures in the refrigerated tanks. Once sufficient quantities were available, the product was exported by refrigerated tanker. Upon arrival of the vessel at its destination, the importer inspected the shipment, approved it, and paid the bank. The processor thus obtained the working capital it needed, while the collateral manager provided security to the bank through its control over the product and process to ensure quality.

Figure 2.1 Simple financing transaction under a collateral management agreement



Processing and collateral management

Products may undergo processing while they are under the management of a collateral manager and financed by the bank. For example, in the case of a cotton gin in Uganda, a collateral management company oversees stocks from the moment the seed cotton is deposited to the dispatch of the bales of cotton lint. On receipt of the seed cotton, the collateral manager issues WRs for the baled cotton equivalent, determined by the processing efficiency of the gin (i.e., expected percentage out-turn), to which the collateral manager applies a small discount to ensure that the bank does not advance funds in excess of what would be justified by the actual out-turn, which may be more or less than anticipated. At the same time, the collateral manager monitors actual out-turn against anticipated out-turn and reports to the bank on a weekly basis. Depending on its need for security, the bank may also require the borrower to sign trust receipts for goods that the collateral manager releases for processing (see subsection 5.3).

Linked transactions and collateral management

It is often attractive for a bank to finance a larger part of the supply chain rather than finance single-point storage of goods in a warehouse. In many supply chains, goods move from one warehouse to another; by using a collateral manager, a single bank loan can effectively accompany the goods as they enter the first warehouse, are transported, and are then stored in the second warehouse.

There are many potential applications for such financing transactions, from relatively simple up-country-warehouse-to-export-warehouse arrangements to complex international transactions that incorporate input supply and processing operations. Box 2.2 describes a moderately complex deal involving the import of frozen fish.

Box 2.2 Example of financing linked transactions for import

An importer in West Africa had identified a supplier in another developing country, but neither had the capacity to finance the entire transaction without bank financing. The banks, unwilling to finance a transaction on conventional trade terms, instead utilized an international collateral manager. The sales contract set out the price, quality, and quantity of fish to be delivered regularly. For each transaction, the frozen fish were delivered into a warehouse in the exporter's country under supervision of the collateral manager. Upon the collateral manager's confirmation, the importer paid 20 percent of the value to the exporter, after which the fish was released for export. The collateral manager supervised the loading of the fish onto a vessel, the offloading and delivery into a custom-bonded port warehouse in the importer's country, and its continued storage. The bank paid the exporter the remaining contract value upon delivery. The importer appointed all the logistics companies, subject to approval by the collateral manager, and the transaction was further secured through a number of insurance contracts.

The fish remained stored under the collateral manager's custody until released by the bank; releases were triggered by evidence of payment into an escrow account. This structure permitted the importer to withdraw relatively small amounts of frozen fish regularly (as per a delivery program specified in the loan agreement) for direct sale to local retailers, without carrying the costs of the fish still in the warehouse on its balance sheet. If the importer was unable to meet the delivery schedule, the bank could sell the frozen fish to third parties, including in neighboring countries (re-export is easy given fish stored in bonded warehouses).

2.3 Financing under public warehouse systems

To fully develop the trading component and enable more inclusive and robust warehouse financing markets, an arrangement beyond conventional CMAs is needed, whereby the warehouse operator issues a transferable WR to the depositor, not to the bank. Appendix A contains an example of a transferable/negotiable WR (see subsection 4.4 for details on the concept of negotiability). The depositor may transfer this to a bank or microfinance institution in encumbrance—i.e., as collateral for a loan; it could also be transferred to a buyer as part of a sales transaction. The buyer now becomes owner of the underlying stock and must pay the warehouse storage charges up to the time the buyer collects the stock. Transferees are entitled to receive the stored goods or their fungible equivalent (i.e., of the same quantity and quality/grade). The receipt will normally have a maturity date related to its shelf life, beyond which it no longer guarantees the quality or grade of the commodity delivered. Alternatively, there may be a requirement to reinspect the goods at a certain date; if the quality remains acceptable, the WR remains valid for a further period. Figure 2.2 diagrams the WR financing process using transferable WRs.

Publicly accessible warehouses and warehouse receipt systems

Warehouses issuing transferable receipts are usually public warehouses; this term does not connote public ownership but instead that such warehouses provide public access. In this guide, the term refers to warehouses that are open to deposits by the public in general without discrimination. While CMAs and SMAs are normally used for the financing of a particular individual or corporate entity, the main purpose of public warehouses is to make services more widely available at a lower cost.

The public warehouse operator provides storage and other standard services (drying, cleaning, bagging, etc.), at a tariff which must be advertised to the public and exhibited prominently at the entrance to the facility. No prior arrangement, such as a CMA, needs to link the warehouse operator, the depositor, and the bank. A public warehouse may have many depositors and more than one bank lending against the stocks of the various depositors stored therein. The relationship between the warehouse, depositor, and transferees (including bankers) is governed by law and standard contractual terms of which the parties must be aware if they use the system.[2]

The concept of a WR system is detailed in the following subsections. As generally used in this guide, "WR systems" refer to environments in which legal and contractual enforcement is in place, and public warehouses offer services open to various depositors enabling WRs to be generally accepted as collateral for bank loans.

2.4 Key participants in warehouse receipt systems

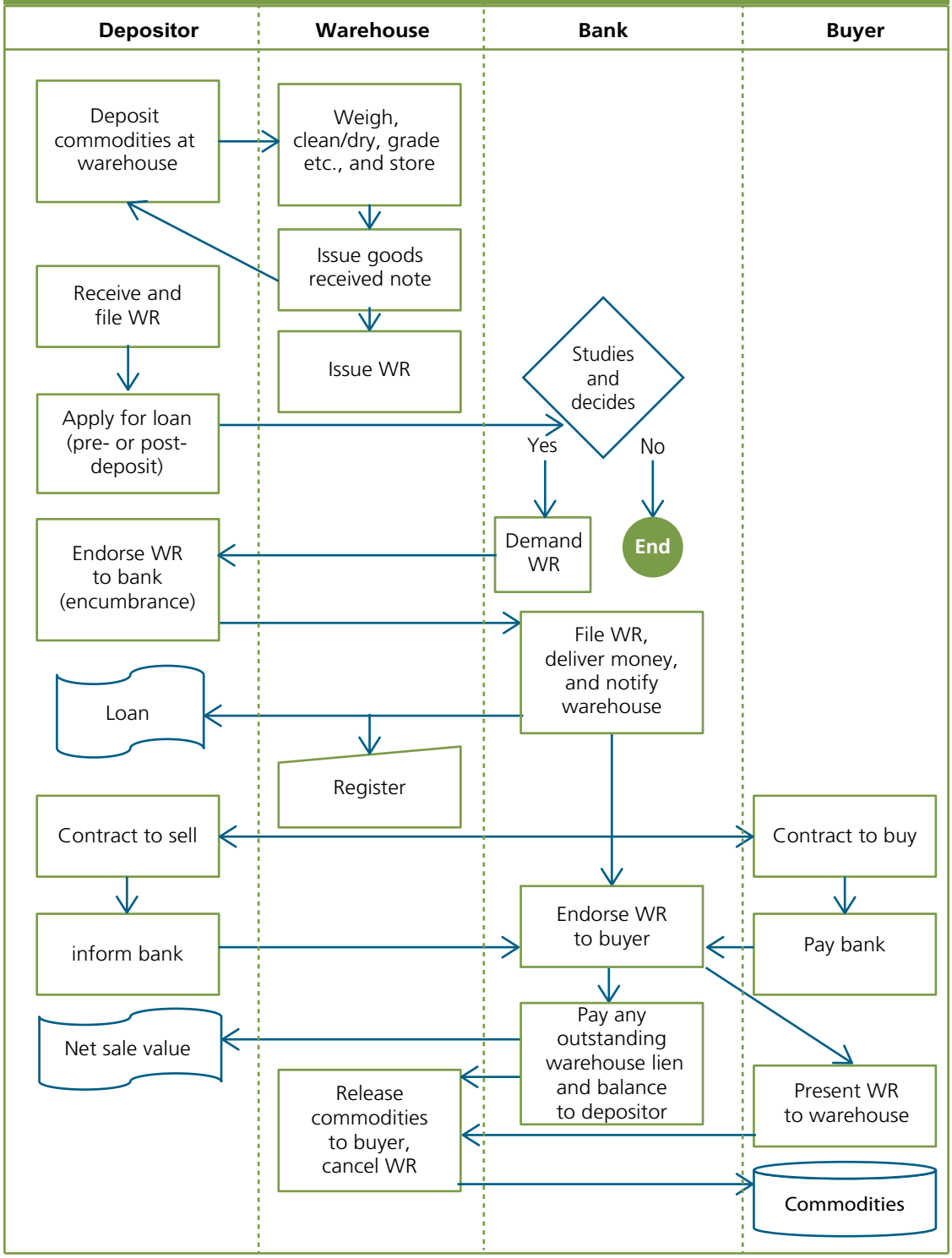
Various participants in the agricultural value chain may benefit from a properly functioning WR system, including farmers seeking accurate weights and measures, higher prices, and credit; traders seeking storage and credit; agricultural input suppliers seeking finance for their inventories; and processors seeking a steady supply of raw materials throughout the year.

The service providers involved in the system are those providing the warehousing or stock management services, the financiers (usually banks but also microfinance institutions or buyers), and other parties underwriting risks (notably fire and related perils, theft, fraud, etc.).

Various other parties may be involved, depending on local needs and opportunities, including

[2] The transferee, or holder in due course, is an entity other than the original depositor who receives the WR in good faith and with no suspicion that it might not be good, claimed by another, overdue, or previously dishonored. Note that if the WR is nonnegotiable, the transferee may not have priority claims over another buyer of the same goods (sold by the transferor) if that buyer also acted in good faith.

Figure 2.2 Financing and sale transactions using transferable warehouse receipts



- specialist agencies concerned with commodity grading;
- market information service providers that assist in the valuation of commodities and management of price risks;
- commodity brokers to assist with the sale of warehoused commodities;
- commodity exchanges, which provide the valuation of and trade in warehoused goods, and for the clearing and settlement of transactions; and
- regulatory or certification bodies enforcing standard procedures and minimum performance standards, and protecting the interests of depositors and banks.

When the depositor is a farmer or farmer organization, the loan obtained against the WR will typically be used for working capital purposes such as buying inputs for the next season, other revenue-generating activities (such as fattening pigs or trading), or to meet household consumption requirements. A trader is more likely to use the loan for purchasing additional commodities. While the financing needs of farmers and traders are often relatively short term, processors usually have a longer-term stock financing need. They may use WR finance to source raw materials in a short harvesting season so they can process them year round. For example, animal feed companies need a fixed stock of soybeans to produce feed year round and could use WR financing on an ongoing basis.

Warehouse operators will generally wish to receive deposits of a minimum size—e.g., a truckload—which tends to exclude smallholder farmers from participating in the system as individuals. Often, the only way smallholders can access the system is by consolidating their harvest into eligible lots with other farmers. Larger, commercial-scale, or emerging farmers may deal directly with the warehouses, but smallholder farmers will normally need to access them through cooperatives or other types of farmer organizations. These organizations can use WRs to access funding for partial payment to their members, and pay the balance when they have finally sold the commodity. Banks are generally interested in working with farmer organizations that meet certain minimum criteria such as status as a legal entity, adequate financial standing, and good financial management and records. The collateral sometimes provides banks with sufficient security to proceed when some of these criteria are not met at the levels required when traditional collateral is pledged (box 2.3).

2.5 Rationale for increased development of warehouse receipt systems

From a developmental perspective

Stock monitoring and collateral management services already play a vital role in the financing of trade throughout the developing world and transitional economies, often as part of structured financing arrangements. Service providers are mainly concentrated around ports, although they also assist processing companies in a variety of locations to finance their raw material stocks. Many kinds of enterprises can access these services, including food and petroleum importers, cotton ginners and spinners, coffee processors, flour and feed millers, and frozen fish exporters. Significantly, collateral managers and stock monitors are of considerable value to indigenous enterprises facing competition from the local subsidiaries of multinational competitors which can access offshore funds at low interest rates. The existence of warehoused commodity stocks in known locations and of known quality helps end users access them more reliably, cheaply, and conveniently than would otherwise be the case; this is particularly advantageous to commodity exporters that engage in short-selling.

In Sub-Saharan Africa, it is worth noting that collateral management is extensively used to facilitate financing of imported foodstuffs, but that, with the exception of South Africa, it does relatively little to support the domestic food supply. The contrast is particularly stark in the case of the rice business, where CMAs facilitate the import of many millions of tons of milled rice per year from the world market at a relatively low per ton cost. To improve warehouse capacity, services,

Box 2.3 Tanzania warehouse receipt financing

Robert Pascal, Head of Agribusiness of the National Microfinance Bank in Tanzania, gives an example of financing cooperatives using WRs: "NMB started financing coffee and cashew under a warehouse receipt system in 2007. Usually, it is difficult to obtain audited financial records of the primary cooperative societies. Thus the bank places much of its reliance on the financing structure." The requirements established by the bank include the following:

- The borrower must be a primary cooperative society that produces a certain crop at a substantial volume.
- Registered and licensed warehouse operators must be used.
- Disbursements are made against commodities delivered in controlled warehouses.
- Buyers pay directly to a designated bank account (or escrow account*).
- Assurance must be provided that the previous quantity of crop produced and sales proceeds are realized.
- Financing is capped at a prespecified LTV ratio set for each crop according to price volatility and marketing arrangements (typically in the range of 50–90 percent).

*Payment into the primary cooperative societies' bank accounts works well in Tanzania because the commodities concerned—cashew and coffee—are sold through a nationwide auction system that ensures the settlement of transactions. Elsewhere, the buyer would be expected to pay into a bank escrow account in the cooperatives' name from where the bank distributes the money; this gives the bank control over the funds from the buyer to first repay outstanding loans and any remaining storage costs or handling fees owed before releasing the balance to the borrower.

and financing, it is necessary to develop domestic supply chains managed by agribusinesses (possibly cooperatives) that will work with suppliers to increase yields and raise quality and build operational strength to keep locally produced and stored foodstuffs secure.[3] Commodities will need to be aggregated, cleaned, and graded in up-country warehouses so that financing can be made more available against stored collateral.

There is a great opportunity to increase the reach and impact of warehouse financing beyond collateral management and stock monitoring services. Presently, the majority of small and medium-size enterprises and farmers in Sub-Saharan Africa and many other developing countries have no access to any form of warehouse financing. Developing these opportunities depends on several factors:

- Increasing confidence in collateral management services, which has been significantly damaged as a result of fraud cases, and in public warehousing, where similar problems have been occasionally noted in Latin America, Eastern Europe, and elsewhere
- Raising the standards of up-country services to make financing more readily available throughout the supply chain—not simply from port to export—and for the consolidation of food commodities consumed in domestic and regional markets

[3] This latter is quite challenging in developing countries, because local foodstuffs can be very vulnerable to theft, as there are large numbers of potential buyers in the immediate locality, which is not the case for export commodities such as cotton and coffee. Also, small up-country warehouses often lack the economies of scale to make it financially advantageous to employ collateral managers.

- Developing public warehousing services accessible to smaller borrowers who cannot offer banks the necessary security to use SMAs or afford the high fixed charges of CMAs.[4]

Well-run public warehouses in up-country locations under a well-developed WR system can provide producers with a range of value-added services:

- They can standardize quality and certify the quality/grade of commodities, such that producers can market their goods directly to a range of downstream buyers that normally would buy through agents and middlemen.
- They can apply proper storage technology and thereby reduce and prevent postharvest losses.
- They can help depositors attract inventory finance on advantageous terms that reflect the low lending risks involved in order to take advantage of seasonal price movements.
- They can guarantee depositors' performance on sales contracts, thereby providing a solution to the problem of contract performance failure affecting developing country agriculture.
- They can arrange for in-store transfer of ownership, so that the buyer can hold the stock up-country and collect it when convenient.

The use of negotiable WRs under a well-developed WR system can greatly facilitate transfer of ownership, and reduce the relevant risks and costs involved. This in turn facilitates competitive trading in WRs and can prompt the development of an exchange where commodities are traded in a transparent fashion.

Tanzania's experience with coffee shows how public warehousing can be developed upstream of ports in a way that makes it accessible to primary producers. Producers of quality coffee supplying premium outlets such as Starbucks have used the system to greatly improve their returns. However, there are also many examples of weaknesses in up-country locations, such as in Vietnam and landlocked areas of West Africa (see section 10).

From the banks' perspective

While banks already engage in profitable warehouse financing, there is scope for them to do far more and at lower overall risk. Their scope for lending against balance sheets and cash flow projections is limited by the number of borrowers with rigorous corporate governance and properly audited accounts. This pushes banks to seek collateral in the form of specific company assets, notably land and buildings. In smallholder areas (particularly in rural Africa), potential borrowers often cannot provide acceptable ownership security for their farmland and business premises, and it is difficult and costly to foreclose in the event of default. One of the main avenues for banks to increase their penetration of local credit markets is by lending against the security of readily marketable commodity stocks.

Banks in emerging markets will need the following to further increase their warehouse financing business:

- Greater formalization and security, with a move from relatively insecure SMAs to CMAs or full WR systems
- Greater professionalism in collateral management and warehousing services
- Expertise and supporting policies and procedures at the level of the banks themselves
- More structured trade financing opportunities with international clients and correspondent banks in importing countries.

The need for more formal arrangements such as CMAs will of course depend on local circumstances. In Ethiopia, banks making merchandise loans directly supervise borrowers' warehouses and claim a default rate of less than 1 percent. In such cases, there may be no need to bring in an independent collateral manager, as long as the bank ensures a strong firewall between the

[4] Collateral managers charge on a per site basis (see subsection 3.2), and the cost is normally prohibitive to smaller players, even those selling several hundred tons of grain or more per year.

customer relationship manager and the monitoring department.[5]

Part of the reason for the low default rate in Ethiopia may lie with the local culture and in the expectation that any fraudulent activities that are discovered will be severely prosecuted. The history of warehousing fraud in various African countries (not least in Cameroon, Nigeria, and Uganda) emphasizes the need for greater professionalism among service providers, and for banks to enhance their skills in selecting and managing collateral and stock managers. The same experiences also point to the need for banks to improve their internal procedures and operations.

A fully developed WR system with public warehouses can increase the reliability of warehouse storage and warehouse documents. The legal structure defines the rights of WR holders against warehouse operators or any other person claiming competing security interest in the warehoused goods. The WR itself (or its registration, in the case of an e-WR) permits purchasers and banks to ensure the priority of their interest in the goods and ensures transferability (when permitted under law) and the enforceability of their acquired interest.

In a well-organized system, good management practices, regulatory supervision, and the performance guarantees that are put in place (insurance policies, bonds, and/or indemnity funds) ensure that banks' collateral receives a high level of protection. Additionally, there are likely to be simple out-of-court procedures for foreclosing on defaulting debtors and resolving disputes. Such a WR system can reduce the transaction costs of lending (e.g., high costs of gathering information, supervision, and foreclosure) and provide a better match between collateral and short-term borrowing needs. Well-functioning WR financing also has the benefit for both borrowers and lenders of freeing up fixed assets to pledge the long-term finance needed for productivity investments.

The establishment of a secure and reliable system can help banks develop financial services to target small and medium-size agribusinesses and farmer organizations. These businesses and smallholder farmers often do not have significant fixed assets, as their primary assets are often commodity inventories. The high security provided by the WRs helps banks get to know the clientele with secure commodity collateral, and use this relationship as a basis to move to less secure forms of lending. It can also lead banks to offer more forms of financial services for this client base, including deposit taking, savings, money transfers, insurance, input credit, leasing, and personal loans.

As detailed in section 6, countries seeking to establish public warehousing with transferable/negotiable WRs will often need to take certain legislative and regulatory measures to protect the interest of commodity owners and lenders. It is important that banks become involved in the design of such measures, so as to ensure their success. A comprehensive legislative and regulatory platform can encourage other services including insurance, exchange-based trading, price risk management, and the creation of short-term commodity-backed financial instruments.

In short, improvement and extension of WR systems can help developing countries better match supply and demand for finance, enabling overliquid banks to channel funds to underleveraged borrowers, particularly those in rural areas. Box 2.4 describes the WR system process in Kenya for bulking grains.

[5] This caution is noted because many cases of fraud, both from public and collaterally managed warehouses, have involved the complicity of bank officials. If a bank does not want an external agency to provide independent control, it must ensure that rigorous internal checks and balances are in place.

Box 2.4 Kenya grains and warehouse receipts

After harvesting, farmers transport grain to a public (certified) warehouse. If the grain meets stipulated quality standards, the warehouse operator issues a WR to the farmer for each minimum level set (e.g., 110 bags). The farmer can immediately sell the grain to buyers (millers or traders) by using the WR as a trade instrument. This eliminates market intermediaries such as middlemen who purchase at low farm gate cash prices.

If prices are not attractive, the farmer has the option of approaching a bank for financing. The banks use the WR as collateral for a short-term loan, lending up to 60–80 percent of the value of the grain for periods of three or six months. This allows the farmer to meet basic financial needs, such as domestic needs or preparation for the next planting season, while waiting for prices to improve. This is useful during the main harvesting period when supply is typically good, thus depressing prices at a time when households have significant cash needs.

Once the farmer is willing to sell at the prevailing price, instructions are given to sell the grain by trading the WR. In the event of a loan, the buyer pays the bank directly to repay the outstanding loan as well as any storage and handling costs. The balance is then credited to the farmer's account.

Source: Kenya Ministry of Agriculture Task Force 2011.

3 Warehouse Infrastructure and Operation

This section highlights important factors related to the location, physical infrastructure, operation, management, and cost of warehouses that banks should consider when financing agricultural commodities.

3.1 Location and management

Location

In well-developed WR systems, warehouses are spread throughout the producing areas in reasonable proximity to producers. This proximity helps mitigate potentially high transportation costs; also, very few users are willing to have their crop inventory stored too far away from their production site. Warehouses are also typically located at ports, river or rail heads, and other commercial areas or points of concentration. Currently in most developing countries, warehouses are most commonly located in commercial areas and are relatively scarce in up-country locations.

Warehouse types

Warehouse finance can be undertaken with different types of warehouses including private warehouses, field warehouses, public warehouses, cooperative warehouses, government warehouses, and bonded warehouses. Using these last, importers may not remove goods until they have paid the duty and, in some cases, reimbursed the banks.

Many countries also have specialized parastatals with substantial warehousing capacity—e.g., the Food Corporation of India, the Food Contract Corporation of Kazakhstan, and Kenya's National Cereals and Produce Board. These entities often have a capacity that exceeds the government's own requirements and could thus be leased or sold to private players willing to use them for collateral management or operate them as public warehouses.

Storage considerations

Commodities must be properly stored so they do not deteriorate over time or get mixed with commodities of inferior quality. It is normal for deposits of lower-value commodities, such as grains, to be commingled in a single fungible mass of a given type and grade (meeting tolerances for moisture content, defects, and foreign matter) in order to economize on storage space. This is almost invariably the case when grain is stored in silos, and normally the case when grain is stored in bags—although depositors may initially demand to have their stocks identity-preserved in the name of each depositor.[1] Deposits of higher-value commodities such as coffee and cocoa tend to be stored identity-preserved.

[1] Such demands were made to AgroWays Ltd, the first public grain warehouse established in Uganda; see table 3.1.

Other warehouse functions

Depending on the commodity involved and the type of operation, warehouses need to provide a number of functions in addition to storage, such as analysis to assess and grade the commodity received and cleaning, drying, primary processing, and bagging services. Warehouses normally need simple labs—equipped with moisture meters, trial balances, sieves, and other equipment, depending on the crop—for assessment and grading. Conversely, they may make use of remote, often internationally certified, laboratories in cases where more specialized equipment is required, such as testing for mycotoxins (the pathogenic products of fungal activity).

Warehouse operator responsibilities

The warehouse operator's specific responsibilities vary by commodity and situation. For example, public warehouses handling grains in North America and South Africa normally commit to delivering grain of the quantity and grade specified on the WR. If the grain has deteriorated during storage, they are obligated to rectify the situation, either by substituting grain that meets the standard or by providing financial recompense. Under circumstances in which a warehouse operator may not be able to guarantee that no shrinkage (crop weight loss) will occur during storage, regulation under a public system may allow receipts to be issued using a standard discount (e.g., 1 percent) on the weight as it is handled into the warehouse.

Collateral managers not working within a public warehousing framework are often less rigorous in this regard, generally only providing a formal commitment to a full out-turn guarantee defined in terms of quantity rather than quality.[2] Further, limiting clauses in the CMA/insurance contract often specify at least a 10 percent safety margin in terms of quantity lost; the collateral manager's liability typically becomes operative above this margin.

[2] In some cases, collateral managers will provide a full out-turn guarantee of quality, particularly with large shipments.

This difference in level of responsibility between collateral managers not working within a public warehousing framework and public warehouse operators in North America and South Africa reflects a difference in background. The latter are highly specialized in the handling of their respective commodities and will more readily commit to delivering back the same (or a standardized) quality as received, whereas the former tend to define their role as providing the due care that can be expected of an experienced warehouse operator.

3.2 Charges and tariffs

Warehouse operator charges are normally determined by the market, and thus are higher where storage capacity is in short supply and where goods are not commingled but stored identity-preserved. Charges also differ considerably between those operating under public warehouse systems and those using private services, such as stock monitoring and collateral management.

Stock management agreements

It is difficult to provide indicative prices for SMAs, as these depend on the scope of work, labor costs, location (in particular, proximity between service provider and warehouse location), frequency of inspection visits, and the commodity involved. Services are sometimes charged on a per inspection basis according to these factors.

Collateral management agreements

Collateral management generally entails fairly high fixed monthly costs assessed on a per site basis as well as additional variable costs. In Africa, international service providers typically charge fixed costs upwards of $2,000 per site per month, while local companies usually charge $1,000 or more. In India, fixed monthly charges typically range between $600 and $1,000 per warehouse, if the warehouse is not remotely located.

On top of the fixed per site fee, the borrower must pay for a variety of services, including physical handling, fumigation (when required), and

warehouse rent. The borrower also must pay for insurance coverage against risks including fraud and negligence by the collateral manager. Insurance premiums are normally a percentage of the value of the goods under management and depend on the risks covered. The cost of insurance is often very substantial. For example, all-risk insurance coverage for warehousing a shipload of rice bound for Ghana and valued at about $7 million is $3,000 per month—twice the collateral management fee. International trading companies often have an umbrella policy that covers them in all countries in which they operate; the risks covered under this umbrella can thus be excluded from the collateral manager's policy. Local trading firms do not have such insurance.

For importers, exporters, food processors, and a range of agribusiness enterprises, it is often worth paying for collateral management services, as a CMA is often needed to access timely commodity credit. However, the high costs are normally prohibitive for farmer groups, small traders, and the like—even those selling several hundred tons of grain or more per year. These services will only be affordable if the depositors can bring together more substantial volumes of commodities, or if the collateral manager works under a public warehousing framework benefiting from economies of scale.

Public warehouse systems

Public warehouses typically charge for the various services they offer in managing commodities stored—such as handling, cleaning, drying, storage, and fumigation—on the basis of a standard fee schedule, such as the example shown in table 3.1. They do not normally charge separately for insurance or performance guarantees, as the fee structure of the warehouse operator generally covers these costs as overhead paid for through the various fees the depositors must pay.

Fees are normally levied on a per ton (or per kilogram) basis, making the services much more accessible to smaller players. The rate for storing commingled grain is usually not more than $2.50, including insurance per ton per month, in countries with mature public warehousing systems. In Uganda, warehouse operators' charges (as shown in table 3.1) are often not paid up front by the farmer (depositor). In this unique situation, the buyer normally pays the warehouse operator at the time of purchase, and then discounts this sum from what is paid to the farmer. Note that this is not a typical arrangement.

Storage charges are sometimes insufficient to recover the cost of capital invested in the facilities. In developed systems, there are several probable explanations that might allow warehouse operators to charge such lower rates. Facilities are sometimes old and therefore may already be largely written off, or they may have been initially built with low-cost finance from government banks. In other situations, warehouse operators may have excess capacity and thus can afford to charge storage fees based only on marginal costs. By providing storage facilities, warehouse operators can attract depositors to whom they can cross-sell other services (input supply and financing) and from whom they can buy the product for onward trading, thus allowing them to make up for losses on storage services with profitable other services.

Table 3.1 Example of public warehouse system tariffs: storage fees at AgroWays Ltd, Uganda, 2008

Service	Explanation	Fee[a]
Handling in	Unloading, weighing, stacking	U Sh 3/kg at arrival
Reloading	Reloading grain not accepted for storage	U Sh 2/kg
Drying and cleaning	Drying to target moisture content, cleaning to meet Uganda Commodity Exchange standards	U Sh 12/kg at arrival for grain up to 0.5% above target, plus U Sh 3/kg per additional 0.5% moisture content
Cleaning	Cleaning to meet Uganda Commodity Exchange standards	U Sh 8/kg
Bagging	Bagging, weighing, and stitching of new 50 kg polypropylene bags, and handling into warehouse	U Sh 17/kg of dry clean grain
Storage of commingled maize and paddy rice	Stock graded and classed before storage; includes all necessary storage hygiene and fumigation to maintain grade and prevent infestation	U Sh 6/kg/month, or pro rated for number of days stored; plus insurance of ~U Sh 1/kg/month
Storage of commingled beans		U Sh 9/kg/month, or pro rated for number of days stored; plus insurance of ~U Sh 1/kg/month
Storage of identity-preserved grain	Grain stored in separate stack by customer, and labeled as such; includes all pest control and fumigation to maintain grade and prevent infestation	Same as for commingled maize/paddy rice or beans plus U Sh 2/kg/month
Handling out	Unloading bags from stack and loading on truck[b]	U Sh 3/kg
Additional fumigation	Required when grain arrives with live insects; other fumigation is carried out as part of the storage service	U Sh 3.5/kg of unprocessed grain

Note: These charges may be amended upon agreement with the regulatory authority; new rates will only apply to grain deposited after the new rates have been announced.

a. Rate of exchange: U Sh 1,750 = $1 as of 2008.

b. When the grain is sold, the buyer pays for storage from the time he or she takes ownership. The buyer will also pay handling-out charges.

4 Key Legal Issues in Warehouse Finance

This section aims to acquaint bankers in emerging markets with those components of a country's legal framework that affect warehouse finance. It will also help bankers gain an understanding of the main legal considerations in financing commodities within their own context and in participating as knowledgeable stakeholders in the design of WR systems.

4.1 Summary considerations

Banks that wish to lend against WRs will first need to consider the existing legal framework—including, among other things, laws and procedures relating to the licensing and operation of warehouses, warehouse storage documents, sale of goods, secured transactions, bailment, collateral registries, and banking and credit regulation.

There may be circumstances where governments need to pass special enabling legislation so as to give bankers, depositors, and purchasers of warehoused goods confidence in the system. This was the case in Zambia, where an agricultural credit act passed in the 1990s required lenders to search for prior charges, including floating charges—a procedure that could take weeks, given the poor state of the country's Agricultural Charges Registry. The act was amended in 2010 to eliminate this problem, illustrating the need for legislation to go hand in hand with the other elements of a favorable enabling environment. These legal and regulatory matters are extensively discussed in IFC's guide, *Establishing a Warehouse Receipts System: Guide on Legal Dimensions and Reform*, and by Coulter and Shepherd (1995, annex 5).

Following are the leading legal and regulatory concerns a bank should normally consider and address; where possible, cross-references to detailed discussions throughout this guide are provided:

- Whether the courts will recognize WRs as negotiable instruments and as equivalent to ownership of the underlying goods (see subsection 4.4, which discusses the concepts of negotiability and document of title)
- In case of default, banks' ability to liquidate the commodity collateral quickly and without extended delay due to lengthy court processes, preferably by selling the WRs either by auction or private sale (see subsection 9.4 on liquidation)
- The need for a formal regulatory framework providing oversight and/or licensing of warehouses to protect the interests of depositors and bankers by ensuring good warehousing practice, preventing fraud, and enabling holders of WRs to obtain recourse (to the stored goods or fungible equivalent) if the warehouse defaults or its business is liquidated (see subsections 6.2 and 6.3)

- The need for collateral registries or other mechanisms to prevent fraud and double pledging (see subsections 5.2 and 6.3)
- The need to enable the use of e-WRs as opposed to paper documentation (see subsection 5.1)
- The need to establish a form of guarantee or indemnity fund to protect depositors and financiers in the event of warehouse failure, nonperformance, or fraud (see subsection 6.1).

4.2 The need for legislation

The practical effects of a particular legal variable on the viability of a WR system will usually not be evident from an examination of legal doctrine alone. Where the economic prospects of the scheme are sufficiently strong, and lenders and depositors believe that the practical risks are small, they may be able to live with a certain amount of legal ambiguity. This logic partly explains why South Africa implemented its system of public warehousing and silo certificates without enabling legislation, and without a guarantee that the courts would treat the certificates as negotiable instruments; this has subsequently been established through jurisprudence.[1]

In situations where the economic prospects for WRs are not clear and the business culture of a particular country is unaccustomed to what is being proposed, legal uncertainties may present another reason for skeptical participants—particularly banks—to turn away from an uncertain venture. Such cases may call for more than creative work by lawyers or legislative reform, but may need the involvement of all stakeholders to create a holistic system. This system may require a guarantee mechanism or indemnity fund to protect depositors and banks against default by warehouse operators.

Few, if any, countries have specific regulatory frameworks covering the provision of collateral management services. Collateral managers usually have one-to-one relations with depositors. Normally, these managers, like the financing banks they work with, are run by seasoned businesspersons who proceed on the basis of *caveat emptor* (let the buyer beware). However, the incidence of fraud in certain countries suggests that governments may be justified in regulating, or at least adopting minimum capital requirements for, collateral managers.[2] Moreover, to maximize collateral manager efficacy, countries may need to adopt laws that expressly

- recognize the collateral manager's pledgeholder status in the case of goods in its temporary custody;
- recognize the collateral manager's ability to issue valid WRs in appropriate cases;[3]
- relieve unnecessary restrictions, such as the requirement in many civil law countries that storage facilities temporary controlled by collateral managers be registered as general warehouses (see subsection 4.5); and
- reduce awkward land use restrictions that limit the ability of collateral managers to temporarily lease warehouse space.

Governments most often enact enabling legislation when they are seeking to promote the establishment of public warehouses issuing transferable WRs. Given the large number of prospective depositors and other participants, a powerful argument can often be made for a regulatory system

[1] It is worth noting that South Africa has also implemented a mandatory indemnity fund for the protection of WR holders.

[2] It may also be useful and appropriate for multilateral institutions such as the United Nations Conference on Trade and Development (UNCTAD), the Common Fund for Commodities, the World Bank, and regional development banks to work with the banks, inspection companies, and freight forwarders to draw up an international code of conduct and set of standard forms and procedures applicable to CMAs.

[3] This refers to the system known as "field warehousing" in which the collateral manager will lease a warehouse owned by the owner/borrower, place signs giving notice of the custody of the collateral manager, control the warehouse independently, and issue WRs covering goods deposited in the warehouse. The concern is whether WRs issued in such cases will be treated under the law as the equivalent of WRs issued by commercial warehouse operators.

that protects the public at large. Several countries in Eastern Europe and the former Soviet Union have opted for legislation, as have four African countries (Ethiopia, Tanzania, Uganda, and Zambia). Malawi is proceeding with its public warehousing pilot without legislative reform; Kenya started from the same basis but is now seeking legislation.

As noted above, South Africa did not consider it necessary to legislate for the establishment of a regulatory body, reflecting the high level of trust silo operators enjoyed with farmers, bankers, and other stakeholders. Such regulation as exists in South Africa is provided by the commodity exchange's registration procedures and due diligence (see appendix D), although some silo operators issuing silo certificates are not registered.

London Metal Exchange and Grain and Feed Trade Association contracts provide for delivery of traded commodities to warehouses throughout the world by tender of receipts issued by eligible warehouses; these are subject to a variety of local regulations (ranging from heavy to none) but are based mainly on reputation and insurance support.

Another reason governments may wish to legislate, or amend regulations, is to alter banks' provisioning of loans against WRs and/or enable the central bank to rediscount short-term loans backed by WRs. The national banking authorities may maintain that such measures are justified in view of the high level of security these documents provide under a well-run system and the positive impact they would have on the development of both agricultural credit and local financial markets.

4.3 How laws recognize banks' security interests in warehouse receipts

Security interests in goods generally

The laws of countries typically recognize two types of security interests: a possessory pledge and a nonpossessory or registered charge or mortgage. In both cases, the borrower retains title to the collateral pledged or charged. The distinction between possessory and nonpossessory lies in where the goods reside and which party physically controls the goods.

- Possessory security interests are created if the creditor (pledgee) obtains physical dominion and control over the goods (as in goods held in a pawnshop or collateral held directly in a bank vault), or when the goods are deposited with an independent third party contractually acting for the creditor/pledgee (as in goods held in a warehouse where the WR is issued to the creditor).
- In a nonpossessory pledge, charge, or mortgage, the borrower retains physical dominion and control over the goods, but the creditor maintains a security interest in the goods under a written security agreement that is registered either in a central registry or with a notary.

The possessory pledge and nonpossessory mortgage or charge are both governed by express legislation.

There is a third security creation technique, often seen in jurisdictions where the laws relating to securities or the enforcement of these laws are considered unpredictable. This technique involves the transfer of full title to the asset to the lender in the form of a repurchase agreement (repo), which is subject to the right of the borrower to reacquire the goods. The repo agreement is based on the laws relating to the sale of goods, because title to the goods is actually transferred. Repo transactions can be structured either with dispossession of the goods from the borrower, as with a possessory pledge; or as nonpossessory, if the goods are left under the control of the borrower.

This guide does not generally refer to repurchase agreements but instead to either a possessory pledge or registered mortgage/charge arrangement allowed for under specific legislation.

Creation and perfection of security interests in goods

Security interests are created by a written security agreement between the borrower and the lender.[4] To be effective against other creditors, the security interests need to be "perfected" by some act recognized in the law, which is deemed to give notice of the security interest to other creditors of the borrower.

In the case of a possessory pledge arrangement, the security interest is perfected by delivery of the pledged goods either to the creditor (e.g., the common pawn transaction) or to a custodian that has a legal duty to act as the custodial agent for the creditor (e.g., a warehouse operator or collateral manager that has issued a WR to the creditor).

Normally, no registration of possessory pledges is required to perfect the possessory pledge because the goods are not in the physical possession of the borrower; thus, there is no possibility that the goods can be pledged to other creditors in the belief that they are owned by the borrower. In the case of a nonpossessory pledge (mortgage or charge), perfection is achieved by notifying the security interest by registration in a public pledge registry or court or by registration with a local notary easily accessible to potential creditors.

Limited scope of security interests over goods

A security interest over goods—whether possessory or nonpossessory, registered or nonregistered, title-based (repo) or statutory—typically will not affect the borrower's ability to sell the goods to a good faith purchaser in the ordinary course of business. The law of sales in most countries provides protection to purchasers of goods from merchants or traders in cases where the purchaser has no actual knowledge that the sale is in violation of the rights of creditors or other title claimants of the seller, even if the security agreement restricts the right to sell the goods and is registered.

The laws protecting good faith buyers in the ordinary course of business are designed to encourage normal trade in goods involving commercial counterparties, on the assumption that if a creditor allows the debtor to retain possession of tradable goods, the creditor and not the purchasers should bear the risk of unauthorized sales. Although the buyer in the ordinary course of business will usually prevail over the secured creditor in the event of conflict, if the goods are not in the physical possession of the seller and cannot be delivered without the authorization of the secured creditor, the sale in the ordinary course of business cannot be consummated and the conflict will not arise. Accordingly, a secured creditor holding a possessory pledge (either through actual possession or through a custodial agent and WR) will not be exposed to loss of title to a buyer in the ordinary course of business.

Conversely, the laws protecting buyers in the ordinary course of business will allow a borrower in physical possession of goods to transfer goods title to a buyer in the ordinary course of business, even where the borrower does not hold any title claim to the goods—e.g., where the borrower and creditor have entered into a repo transaction. If the pledged or repo'd goods are placed in an independent warehouse and the creditor holds a WR, there is no risk of loss to a buyer in the ordinary course of business.

The concept of title document as applied to warehouse receipts

The bill of lading covering goods in marine transport is a trade document universally recognized as a document of title. Similarly, some countries' laws recognize a WR as a document of title. This

[4] The security agreement will typically identify the goods, confirm the intention of the borrower to pledge the goods as security for the loans, describe the rights and remedies of the creditor to foreclose on the goods in the event of default, set forth the obligation of the borrower to insure the goods and pay any costs associated with maintaining the goods, and require the borrower to apply any proceeds of sale of the goods to loan repayment. Upon execution of the security agreement by the borrower and the creditor and the making of the loan, the security interest is said to "attach" to the goods and is binding on both parties.

means that the holder of the WR acquires not only title to the instrument itself and the right to the performance by the issuer of the instrument (the warehouse operator), but also to the underlying goods.[5] The document of title concept provides that transfer of the WR is effective to transfer the claims against the custodian and title to the underlying goods, subject to any outstanding agreements between the parties to the transaction.

In countries that recognize a WR as a document of title, there is no need for a separate agreement (like a CMA) between the creditor and the warehouse operator—although the creditor would normally wish to review the storage agreement as a matter of due diligence. If the WR is initially issued to (or subsequently negotiated or transferred to) the creditor, the creditor—and only the creditor

- has the right to demand delivery, regardless of whether the creditor has entered into a warehouse storage agreement;
- can sell the goods by mere delivery (or negotiation or transfer) of the WR, with or without notice to the warehouse operator or borrower; and
- is entitled to various rights and protections covered by the enabling legislation simply because of its status as the holder of the WR.

4.4 Negotiability and transferability

The legal concept of negotiability

Negotiability refers to the ability to transfer all rights to and claims under a written instrument by simple delivery of that instrument without notice to any obligor (borrower) or other third person. It is an ancient legal concept applied to expedite the marketability of such instruments and the goods and obligations to which they pertain. Examples of instruments upon which negotiability has been conferred by law are promissory notes, bills of lading, and WRs. In all such cases, the law requires that the document be made out to bearer or to order of a named person and to comply with other formal requirements particular to the type of instrument. Transfer of the instrument, and the underlying right to payment or to receive the underlying goods in the case of bills of lading and WRs, is made by physical delivery alone (in the case of to bearer instruments) and by physical delivery plus endorsement (in the case of to order instruments). No notice is required to be made to the custodian in the case of negotiable WRs or bills of lading.[6] In order to confer the benefits of negotiability on WRs covering goods located in a particular country, there must be a statute, code, regulation, or judicial decision on the books recognizing this status.

Special rights conferred

Apart from ease of transfer, negotiable instruments confer upon the holder certain special rights that would not be available in the absence of enabling legislation. In the case of WRs, it is almost universally true that the claim of the purchaser or lender to whom a negotiable WR has been pledged (the pledgee) who buys or lends against goods covered by a negotiable WR (without notice of such prior claims) will be free of the claims of any prior owner or lender against the goods—regardless of whether the borrower or seller had the right to sell them or further encumber them, even if the goods or the WR have been stolen. This right is what enables a merchant in London to purchase grain in Argentina or copper in Singapore or cashew in Tanzania without extensive due diligence apart from verification of the validity of the WR.

Nonnegotiability

In countries where the law recognizes WRs as documents of title, there will be another status,

[5] The rights to the performance by the warehouse operator will be subject to the underlying storage agreement, even though the holder of the WR may not be the original depositor. The rights to the underlying goods will be subject to the agreement between the owner of the goods and the WR holder, which may be a security (pledge) agreement or a sale agreement.

[6] This is not to say that notice is not desirable; as a matter of due diligence, a prudent lender will always wish to communicate with the warehouse operator before completing a loan secured by WRs.

nonnegotiable, for WRs made out to a named person without the words "to order" or "to bearer" or that expressly state "nonnegotiable." Here the WR may still be transferred via sale or pledge, but the method of transfer will be via separate agreement (written or oral, express or implied, depending on the requirements of local law). To be effective against the warehouse operator and third parties, notice must be provided to the warehouse operator in writing.

In the case of nonnegotiable instruments, several additional steps are entailed:

- Notify the warehouse of the transfer.
- Confirm with the warehouse that the WR is authentic (as is necessary for negotiable documents).
- Confirm that the warehouse is holding the quantity of goods purported to be covered by the WR.
- Ensure that the warehouse operator has not received prior notice that the WR or the goods have been sold or pledged to other claimants.

In the case of nonnegotiable WRs, the goods may be subject to claims for storage charges, fees, and other liabilities not noted on the face of the WR. The bank should check with the warehouse operator on these points.

4.5 Contrasting approaches in common and civil law countries

Practices vary between common law countries (those following the precepts of English law) and civil law countries (those whose legal frameworks for public warehousing stem from the Napoleonic Code of post-revolutionary France). Starting in the 19th century, civil law countries of Europe (including pre–World War I Russia and Austria-Hungary) and Latin America have tended to pass WR laws as a matter of course, typically appointing public institutions such as the ministry of trade or superintendent of banks as regulators. Such legislation enabled a specialized warehouse operator (a general warehouse, or *magasin général* in French), normally a nontrading entity, to issue double WRs, of which one part was a certificate of title to the goods and the other a certificate of pledge. The system is described in appendix C. Significantly, Francophone countries of Sub-Saharan Africa did not adopt the system, and the relevant French laws have there fallen into disuse.

Common law countries, including the United Kingdom and a range of former British colonies and dependencies,[7] have placed greater reliance on existing contract law and jurisprudence, and have only passed specific WR acts on the basis of perceived need. The United Kingdom, for example, has no such act apart from rules conferring document of title status on warrants issued by warehouses chartered by act of Parliament. These countries have usually adopted single WRs serving the dual purpose of financing and title transfer, rather than the double WR popular in civil law countries. Single WRs are also used in several civil law countries, notably in northern Europe.

Countries planning to legislate for a WR system should not be constrained by legal precedent, but instead should carefully consider the pros and cons of both common and civil law approaches. For further details on the legal and regulatory aspects to consider in legislation, see IFC's *Establishing a Warehouse Receipts System: Guide on Legal Dimensions and Reform*.

It is worth noting that North American countries have generally had a better experience with agricultural public warehousing than Latin America; this may stem in part from the way in which Canada and the United States have legislated and organized the activity. In contrast to the situation further south, the warehousing laws and regulatory bodies in North America are agriculture-specific,

[7] These include Australia; Canada (excluding Quebec); Hong Kong SAR, China; India (excluding Goa); Ireland; New Zealand; Pakistan; the United States (excluding Louisiana); and English-speaking countries in Sub-Saharan African and elsewhere. Some countries have adapted common law in a mixed system. For example, Nigeria operates largely on a common law system, but incorporates religious law as well.

warehouses are licensed to handle specific commodities (rather than large numbers of agricultural and nonagricultural commodities, as is the case with general warehouses), and warehouse operators are not simply service providers but may also trade in the underlying commodities.

According to a study by the University of São Paulo comparing the performance of agricultural warehouses in Brazil and the United States, the latter country had higher rates of warehouse occupancy and lower storage charges (Leão de Souza and Marques 1997). The existence of tough and publicly accountable regulatory systems in North America seems to have prevented conflicts of interest between trading and service provision roles. At the same time, the theory behind double WRs—whereby the title to goods circulates separately from the debt against it—does not often work in practice, as bankers insist on receiving both certificate of title and of pledge as a condition for funding.

5 Trends in Warehouse Receipt Documentation

As described in previous sections, the WR is the document that represents the commodity held in storage. This section explains different forms of documentation under WR systems as well as other specialized types of documentation. It also covers the risks of forgery and the related need for a common registry for pledges, and discusses how a transition to e-WRs can help address those risks.

5.1 Shift from paper-based to electronic systems

Until the 1990s, all WRs were paper documents, but since then there has been a shift toward electronic documentation. These e-WR systems are sometimes developed as an integral part of the operations of commodity exchanges (such as the London Metal Exchange or the Ethiopia Commodity Exchange), or as part of the public systems provided for all warehouses—particularly those dealing in commodities—within a designated jurisdiction.

Advantages

Advantages of security, speed, and cost provide solid reasons for public warehousing systems to go electronic. With all receipts recorded in a secure electronic registry, ownership is clear and there is no scope for forgery or for duplicate receipts to be issued for the same stock. Therefore, compared to traditional paper documents, an e-document is less easy to dispose of without following control mechanisms that protect the bank. Moreover, e-WRs can be integrated into electronic trading systems established under the auspices of commodity exchanges.

Best practice: South Africa's electronic silo certificate system

One of the most notable e-WR systems is the web-based electronic silo certificate system hosted by the company ESC in South Africa. During the last decade, the system has taken the place of paper documentation. The certificate looks like its paper-based counterpart—and a paper copy can be printed out, mailed/emailed, etc.—but only the electronic copy can be transferred to another party to be used in a transaction. When a warehouse operator issues an e-certificate under this system, it is automatically and instantly entered into an industrywide online register. Depositors/borrowers can then manage their individual certificates in a manner similar to online banking. They can transfer the e-WRs to banks in encumbrance for a loan or to buyers as documents of title. The system is used both for South African Futures Exchange (SAFEX) certificates to document delivery of goods on exchange contracts and for transactions outside of the exchange framework.

The system not only provides basic functionality (issue, transfer, encumbrance, splitting, and cancellation of WRs), but also a variety of other services, including the ability to advertise receipted stocks to registered users, effect transfers through a broker, and perform management and market reporting. Certificates can be viewed and analyzed according to various criteria, including SAFEX- or non-SAFEX-compliant, silo location, silo owner, product, grade, when purchased, purchased from whom, and daily versus annual storage. The system administrator can also use the system to generate statistics regarding WRs in a way that does not disclose individual holdings.

Overall, it is a low-cost system in terms of the value of commodities handled, and ESC funds its operation by levying a per certificate charge on the silo operators. Commercial players and banks access the system from personal computers, but this has not proved ideal for farmers, many of whom are not computer literate. ESC has established a telephonic trading center so farmers can use the system.

The transition to the electronic system in South Africa is widely considered to have been a success, providing considerable advantages in terms of security, speed, and cost-effectiveness. Banks are among the most enthusiastic stakeholders, as, among other advantages, there is no need to check confirmations with silo owners.

A key issue that arose in the system's early stages involved confidentiality of the silo certificates. The system was initially established by South Africa's two leading silo operators, but other traders feared that this could lead to disclosure of their stock positions. ESC's solution was to have the system's server managed by a neutral party independent of any industry players, the Exordia Division of PricewaterhouseCoopers. Only registered certificate owners have access to their own certificates.

Developing country models

Similar e-WR systems are gradually being adopted in other African countries. Models have emerged in two countries thus far:

- The Ethiopia Commodity Exchange (ECX) model uses e-WRs as an integral part of the trading and delivery mechanism. ECX issues e-documents directly to the bank involved in clearing and/or financing transactions; the depositor receives a paper copy only. This system is further detailed in section 10 and appendixes E and F.
- Uganda's model has a nearly identical web-based operating system to that used in South Africa, and thereby benefits from the same security features. The WRs are transferable documents issued by the warehouse operator to the depositor, who can then transfer them electronically to a bank or buyer.

In Uganda, the decision to adopt an electronic system was a difficult one, given very low levels of computer literacy and a lack of Internet connectivity outside of the country's towns. However, two major advantages overrode these concerns: first, the risk of paper documents being lost or forged; and second, the convenience of e-systems enables banks to see their holdings quickly and easily. According to feedback from the Uganda Commodity Exchange and licensed warehouses, many farmers and small traders have received valuable initial training and have succeeded in mastering the e-WR system, making use of computer terminals installed in the warehouses and a call center. This experience shows that systems such as Uganda's will only be successful if they are properly and securely maintained, and users receive extensive initial and refresher training in their operation.

5.2 Need for a registry

In principle, holders of transferable WRs can successively transfer them to new holders without any party—including the warehouse operator—keeping a record of the transfers. This in fact has long been the practice in most northern countries and in Spanish-speaking Latin America. In many countries, particularly in the developing world, the risk of forgery makes such an arrangement more or less unthinkable, thus leading to the need for a registry. In Brazil, an electronic registry

has been mandatory since 1995. Registries may either be paper-based or electronic; in the latter case, they are an integral part of an e-WR system. Indeed, the move to an electronic system facilitates the establishment of a registry, as the central server provides the data that a registrar will need—i.e., the link between an identified physical inventory and its corresponding WR—and an audit trail of past transactions.

If a central registry is not in place, a bank may find it advantageous to sign a tripartite contract with the client and the warehouse operator in order to secure its rights. See the example of the National Microfinance Bank of Tanzania in lending against coffee WRs described in box 2.3.

5.3 Trust receipts

The financing of physical commodities, particularly soft commodities destined for export, can involve several warehouses and much processing and overland transport. Trust receipts can be used in financing goods as they move through this value chain.

Where commodities are moved between warehouses—e.g., from a port warehouse to an inland distribution warehouse—they must be released from storage for delivery to the next step in the chain. If the borrower is entrusted to arrange for the handling of goods between warehouses, the bank is exposed to the possibility that the WR pledge could be said to have lapsed during this period, making the goods subject to the claims of any creditor holding a registered charge over the goods as well as of unsecured creditors.

A bank will require the borrower (or freight forwarder, if applicable) to sign documents to ensure security in the collateral.

The trust receipt confirms that the trustee is aware that the goods covered by the WR are pledged to the bank. The trust receipt also acknowledges that the WR/goods are entrusted to the borrower (or freight forwarder) temporarily and for the sole purpose of delivering the goods to the next step in the process.

The borrower is prohibited under the trust receipt structure from selling, pledging, or using the goods for any other purpose. Lastly, the borrower is obligated to deliver to the bank a replacement WR or shipping documents covering the goods upon delivery to the next step.

The bank will require the borrower to keep the goods fully insured against all insurable risks up to an agreed-upon level of coverage, and to confirm an obligation to remit the proceeds of sale of such goods to the bank in payment of the loan.

Trust receipts are often used for commodities undergoing processing because the WR does not provide security in goods as they are processed. If the original goods deposited in raw material form are then processed, the holder of a WR for the raw materials has no legal claim on the resulting processed goods—the collateral simply disappears. To overcome this problem, the financier can require the borrower to execute trust receipts against release of raw material for processing.[1] The trust receipt must, however, specify the commodities and the nature of the processing being undertaken in order to secure the bank's interest in those goods.

Irrespective of the legal system in place (see subsection 4.5), the trust receipt is not a document of title, but merely evidence of the bank's continuing security interest in the goods. It cannot seize the goods in case of default or bankruptcy, as it can with WRs, but must instead enforce its security interest through the courts, which can be a slow and difficult process. A bank should thus only resort to a financing structure that uses trust receipts when it considers the risk of borrower bankruptcy to be low.

[1] *Ijara* is the Islamic equivalent form of financing for goods that are undergoing processing.

Trust receipts are typically not mentioned in statutes or codes but are upheld by courts in the rare instance that they are challenged, usually by unsecured creditors. A trust receipt should not be considered a substitute for a valid pledge before and after its issuance. If the prior pledge is deemed defective, it will not be rectified by the trust receipt, nor will the trust receipt be of use if the subsequent pledge is deemed defective.

6 Public Warehousing Systems: Issues and Due Diligence

The development of a public warehousing system within a country allows banks to lend to a large number of depositors—including small and medium-size enterprises and even individual farmers—against commodities in storage. Public warehousing systems can also facilitate trading between parties—between farmers and traders or between traders—within the warehouse or across warehouses within the system. Public warehousing allows more depositors to take advantage of good quality storage and thus enables banks to access a much larger number of clients, particularly smaller clients in rural areas. As these clients respond to market incentives, they will increase their capacity to absorb financial services, providing banks with opportunities for cross-selling other services such as deposits, savings, money transfers, and personal loans. Moreover, if the country can develop a cadre of trader-cum-warehouse operators specialized in the handling of certain commodities and adhering to strict regulatory norms, there will be efficiency gains throughout the value chain, which should also prompt new lending opportunities.

These advantages will only be realized if the system works effectively and lenders' funds are at least as secure as under existing CMAs. Such effectiveness and security require a supportive policy and regulatory environment that engenders the trust of both depositors and banks.

Box 6.1 presents the steps a government should undertake in establishing a national public warehousing system. Banks should be prepared to interact with these initiatives at three main levels:

- Banks may be consulted in the design or redesign of the full WR system or become active players in various stages of the process, either directly or through their industry associations.
- Banks may deal with warehouses in financing WR holders (or may provide construction or long-term finance for warehouses, although this is not covered in this guide).
- Banks may become members or shareholders of regulatory agencies or commodity exchanges, taking on governance roles, clearing and settlement roles, and/or structuring delivery arrangements through exchange-registered warehouses.

This section reviews the key considerations banks should examine to determine how to engage with and address the risks involved in regulated WR systems. These considerations can be grouped into three categories:

- Overall system aims and strategies
- Enabling legal and regulatory framework
- Practical operational aspects as they relate to the bank's assessment and mitigation of risks.

Box 6.1 Typical steps in establishing a national public warehousing system

1. Set up a project implementation team consisting of core staff and a WR task force that includes both government and private stakeholder representatives.
2. Establish the system's scope in terms of types of commodities and warehouses, and define its institutional and financial viability. The focus should be on locally produced nonperishable agricultural commodities with sufficiently high volumes to offset costs. Experience suggests it may be best to avoid highly politicized food security commodities, focusing on export crops when possible. The implementation team should ensure that sufficient warehouse capacity exists to make a strong start and that this capacity is technologically able to maintain commodity quality. Warehouses should be strategically located near production and trade routes.
3. Design the legal and regulatory framework. Begin by examining the existing legal framework to determine if new enabling legislation is needed. Draft regulations and standard contracts to establish licensing requirements for warehouses and operators, govern the relationships between the players (regulators, warehouse operators, depositors, banks, etc.), establish penalties for noncompliance, and enable rapid settlement of regulatory disputes through binding arbitration.
4. Identify robust and cost-effective financial performance guarantees to provide recourse to depositors and banks in the event of warehouse failure. These guarantees might include insurance coverage, bonding, and/or an indemnity fund to which warehouses must contribute based on their licensed capacity or throughput. Ensure that the cost of these arrangements does not make warehouse operation prohibitive.
5. Establish grading standards for the commodities to be stored; this allows commodities of different depositors to be commingled, which maximizes storage capacity and enables them to be traded sight unseen on the basis of the grade specification.
6. Design warehouse documentation and establish a WR registry (see subsection 5.2).
7. Establish systems to facilitate the sale of warehoused commodities, including guaranteed payment upon delivery of WRs to the buyer. Such systems may involve establishing a full-fledged commodity exchange in parallel with the WR system (as in Ethiopia) or a simpler web-based delivery and payment trading system for WRs, with the bank(s) guaranteeing settlement of transactions.
8. Establish a regulatory body to provide robust licensing, oversight, and inspection of warehouse operators, training staff accordingly.
9. Establish a program for training warehouse operators and relevant staff (notably samplers, weighers, and graders), depositors, commodity buyers, and bankers.
10. Design and implement a strategy for engaging with and educating relevant stakeholders.
11. Begin to license warehouses, after having ensured operators are in compliance with all laws and regulations and have published and prominently display their service tariff.

6.1 System aims and strategies

Does the government support the system?

Government support of the WR system is vital, both in terms of its public declarations and its actions. The lack of such support has sometimes frustrated WR systems organized around food grains in Africa; the record has been better with exportable cash crops (see subsection 10.4). Key to banks' avoidance of excessive risk is to recognize cases where a country's policy environment is fundamentally irreconcilable with the WR system. Instead, banks should focus on sectors where both market conditions and government policies support WR financing.

What is the demand for receipted commodities?

An important first step is to ensure there is sufficient demand to justify a WR system. This issue has several component considerations:

- Are there customers prepared to pay a premium for commodities of standardized quality held in licensed warehouses?
- Is there a general trend for prices to increase following harvest season? Are there buyers who will pay a premium for storing the commodity until the lean season?
- In cases where it is intended to fund seasonal storage, do commodity prices normally reflect carrying costs? How will the bank deal with a situation of falling prices, which may occur as frequently as every five years?
- Who are likely to be the early adopters to drive demand in the initial stages and help get the system off the ground? Can they guarantee an initial level of demand?

Although all the considerations are important, the last point regarding early adopters can be critical to the initial establishment of a WR system and to supporting the system until sufficient scale can be reached to benefit large numbers of participants. Early adopters play a vital role with a novel product such as transferable WRs. They provide the necessary impetus for prospective warehouse operators to become licensed, for farmers and others to deposit commodities, for banks to lend against WRs, and for all these players to climb a steep learning curve. In some countries, large-scale food processors requiring correctly graded raw materials may play this catalytic role.

Who will provide the warehousing capacity and services, and what is their motivation?

The question of warehouse ownership and operation needs careful examination. Governments and donor agencies often use public money to build warehouses in a supply-driven manner, but this will not necessarily create a demand for commodities to be stored there. All over Africa, large numbers of under- and nonutilized warehouses and silos bear witness to this mistaken approach. While subsidies have occasionally been used to good effect, the key requirement is to have warehouse operators committed to the concept and prepared to invest their own funds in it. Typically, there will be rural merchants who see service provision as a means of expanding their business by attracting farmers who want the option of selling both now and later, and buyers who want a reliable supply of quality-certified commodities. Some cooperatives may have similar motivations.

Here again, it is important to identify the early adopters among prospective warehouse operators. Are these companies that inspire confidence based on their financial and managerial capacity? Do they have previous experience in providing warehousing services in this country or in other countries?

6.2 Legislative and regulatory framework

Is the system supported by an adequate legal and regulatory framework?

Banks should make their own in-house assessment of the country's legal and regulatory framework

for its WR system, consulting their legal specialists and making use of IFC's *Establishing a Warehouse Receipts System: Guide on Legal Dimensions and Reform*. It will be particularly important to determine the following regarding legal and regulatory elements:

- Does the law provide for WRs to be documents of title and for them to be negotiable? (See subsection 4.4.)
- Does the law provide for speedy and low-cost processes for seizure of collateral in case of default and for distribution of proceeds? Preferably, the law should enable "self-help" enforcement that does not require recourse to the courts.
- Is specific WR legislation consistent with other preexisting legislation? Is it likely to be upheld in practice? Have there been any test cases, or can the behavior of the courts be inferred through their interpretation of other laws? How does the regulatory agency's intervention in failing warehouses correlate to the role of the official receiver?
- Are the licensing criteria required of warehouse operators (e.g., covering financial aspects, physical facilities, management, and staff capabilities) sufficiently comprehensive without entailing excessive paperwork or cost?
- Do the legal structure and policy environment truly empower the regulatory agency to carry out its mandate?
- What system exists for settling disputes between the parties to a WR transaction, and how effective is it likely to be?

Ideally, bankers, agribusinesses, and farmers will have been consulted and involved in the process of developing the legal and regulatory framework. In particular, the depositors (farmers, traders, and agribusinesses) should be involved in developing criteria for warehouse operators. These criteria must address logistic considerations; see subsection 6.3 for information on the details of warehouse operation. Criteria for warehouse operators should also include financial considerations, normally including a mix of balance sheet requirements and insurance policies and/or bonds. When balance sheets are weak and auditing services unreliable, more reliance should then be placed on the latter. Bankers should be aware of relevant detailed regulatory requirements, such as the eligibility of auditors and insurers and terms required of insurance policies (taking into account the points listed in box 7.1).

Bankers need to fully understand the role of the regulatory agency in case of nonperformance of warehouses. In particular, can the agency quickly take control of failing warehouses so as to assure banks that the stocks held under their WRs will be conserved until such time as they are liquidated or moved to another warehouse? In the event that fraud or serious negligence is detected, the regulatory agency may literally need to act overnight. It is also important to know whether the agency can make timely use performance guarantees (insurance policies, bonds, and/or indemnity funds) to compensate injured parties. In the case of fraud, banks need to understand whether the regulatory agency or another government entity has established an indemnity fund (as has been done in Bulgaria) and the terms under which it operates.

In terms of dispute resolution and legal remedies, public warehousing systems may present greater difficulties than CMAs, due to the number of parties involved—including depositors with whom the warehouse operator has had little contact before they deliver goods to the warehouse. Contractual clauses should provide for the resolution of disputes through arbitration so as to prevent drawn-out and costly litigation. The courts' only role should be to enforce the award decided by the arbitrator. Banks should recognize, however, that little use is made of arbitration in commodity trade in many countries, and arbitrated cases often end up in the courts.

Have adequate arrangements been made to finance the regulatory agency?

At the outset, a regulatory agency may be funded primarily through grants, but it should be fully self-sufficient over time (certainly within

10 years). This self-financing should be realized mainly through levies on licensed warehouses, though additional income may be generated through laboratory and other services. There may be a fixed charge for all warehouses and a variable component related to throughput or licensed capacity. Grant funding should not be permanent, as this could make the agency dependent on the government or donors, leaving it potentially vulnerable to budgetary squeezes and politicization. By contrast, a service funded by levies is likely to be more accountable to the industry and generally more efficient.

The key issue to consider when donor grants or government support is needed and justified for a start-up period is the appropriate duration of such funding—specifically, whether it fully covers the period during which the regulatory agency will need subsidy. Donor support projects sometimes only last for three or four years, which is often too little time to introduce an entirely new marketing and financing paradigm such as a regulated public warehousing system. Time is also needed to see whether such projects have sufficient flexibility to respond to new opportunities and constraints not envisaged in the original project design.

Is regulatory activity likely to prove financially viable?

The financial viability of the regulatory agency is frequently masked by the difficulty of covering all the costs of regulatory oversight and licensing/inspection out of warehouse levies (including paying for inspectors who may be in-house staff or licensed personnel accountable to the agency). This problem does not arise in major agricultural-producing countries such as Brazil, Canada, Ukraine, or the United States, given the very large volumes of commodities produced and stored—numbering in the tens or even hundreds of millions of tons.[1] However, it poses a considerable challenge in developing countries that only produce a few million tons of commodities, much of which is held by farmers for local consumption.[2]

Bankers should ask whether the regulatory agency has a business plan and whether its assumptions are plausible. It may also be appropriate to ask whether the regulatory activity can be sustained on the basis of purely voluntary licensing, or whether it should be made mandatory, so as to ensure that all warehouses contribute to the cost of the system (as is done in the United States).

How well can the regulatory agency be expected to perform?

This is probably the most important question anyone promoting or using a regulated WR system needs to ask. Public warehousing systems will only prosper if they enjoy at least as much trust as collateral managers operating in an unregulated environment. This trust can easily be compromised by inadequate funding, inefficiency, or political pressure favoring nonperforming operators; this largely explains the poor performance of the Brazilian WR system up to the 1990s.[3]

The governance and management of the regulatory agency must be thoroughly examined in order to assess the agency's potential:

- What stakeholder interests and skills are represented on the board of the regulatory agency? Are banks, which have much to gain or lose from the success of the WR system, well represented?

[1] Coulter (2009) notes that in 1998 the annual cost of the regulatory system in Ohio, where all grain handlers had to be licensed either by state or federal authorities, was less than $0.06 per ton of grain produced.

[2] Coulter discusses this issue with regard to warehouse receipting in Eastern and Southern Africa; see Coulter (2009), box 2 (p. 38) and table 8.1 (p. 105); the latter examines how far to extend the regulatory net.

[3] A U.K.-Brazilian team studied this case, finding that the main problem lay with the Ministry of Trade, which licensed the warehouses but could not enforce a strict regulatory regime. During the previous decades, warehouses had made considerable profits, storing stocks government had purchased in outlying areas. Senators owned some of the warehouses, and practices were very lax. Attempts to reform the system encountered opposition from those profiting from it.

- What have the board members invested in the agency financially and in terms of their reputation? Have they anything to lose if it fails?
- What are the qualifications and experience of the agency's executive director and other senior managers?
- Will the board or the executive director be able and willing to resist political pressure at the level of day-to-day management and regulatory decision making?
- Will regulatory decisions—especially those on licensing and disciplinary action such as fines, suspension, and revocation of licenses—be handled by management or referred to the board level or beyond?
- Will regulatory disputes be handled by apolitical professionals or referred back to a minister, as required in some WR system acts?
- Are necessary regulations and standard contracts in place to operate the system?

Are adequate grading standards in place?

The regulatory agency will normally specify that certain grading standards be applied to commodities stored in licensed warehouses; in East Africa, for example, the standard features grades 1 and 2. But are these grades of importance to the people buying and selling the commodity? Do they meet the needs of different market segments? For example, in the case of maize, do the grades matter to top-quality food processors producing baby food and corn flakes or to quality-oriented roller mills, small-scale posho mills, and animal feed producers? Do the grades meet health criteria? Will buyers pay more for a superior grade? Are the grading standards feasible in terms of logistics and cost?

Sometimes, countries or regional bodies develop excessively complicated grading standards, usually because scientific experts are overrepresented on the working groups recommending them and advocate for standards higher than those justified by commercial realities on the ground. Such overly complicated grading standards increase the cost of warehouse operation, sometimes beyond what is justified for local market conditions.

What price discovery systems are in place?

Banks needs periodic market information in order to value commodities according to relevant price indicators, as well as to help anticipate future price movements. See subsection 8.2 on market monitoring and price information systems for more information.

6.3 System operation and bank due diligence

Many operational issues regarding warehousing will be covered by a given country's laws and regulations and monitored by the regulatory agency, making use of either in-house or licensed inspectors. The regulatory agency will also be responsible for enforcing relevant rules and procedures at the national level and, perhaps, for implementing the e-WR system and registry. Nonetheless, because banks have much at stake, they should informally monitor operations as well, particularly in the early stages.[4]

If banks have any concerns about operational issues within the system or with particular warehouses, they should communicate these to the regulatory agency with a view to ensuring prompt action. If the agency fails to respond promptly to such concerns, banks need to consider other steps to protect their interests, including refusing WRs issued by the warehouse concerned. If the warehouses and the regulatory agency perform well, banks should be able to reduce the frequency of spot checks. Indeed, if the regulatory agency can establish a highly credible system, it will avoid duplication of effort and minimize overall system costs.

The following considerations in WR system operations are particularly pertinent to a bank's ongoing risk exposure in warehouse financing.

[4] This subsection addresses banks' monitoring of WR system operations external to their own functioning; section 8 describes steps banks need to take to ensure satisfactory performance of their own internal processes.

What is the financial status of the warehouse operator?

The credibility of the WR system depends on the perceived risk of warehouses failing to deliver the commodity described in the WR and in accordance with specified terms and conditions. Although warehouse management plays a major role in limiting this risk, the financial ability of the warehouse manager is the ultimate security to WR holders if anything should go wrong.

The regulatory agency will have established financial licensing requirements (as noted earlier, ideally in consultation with the banks). However, because a bank's view of the risks associated with a specific warehouse manager may change over time, it may therefore wish to develop internal requirements and procedures stricter than those set by the regulatory agency. Banks may consider taking some of the following steps:

- Check the credentials and suitability of auditors used to certify the financial statements of warehouse operators.
- Specify more precisely the assets that are acceptable in calculating net asset value.
- Conduct spot checks on financial statements provided by warehouse operators.
- Ensure that insurance coverage is in place, checking the suitability of insurers and agencies providing bonds, and reviewing the wording of policies (see box 7.1). There is sometimes a risk that warehouse operators will allow insurance coverage to lapse.
- Evaluate warehouse operators from time to time and, should any not meet financial requirements, communicate the failure to the regulatory agency for rectification.

What are the physical storage facilities?

The location, condition, and management of warehouses are very important to the security of the system. Banks should undertake spot checks, usually contracting with professional third parties to carry out this function. The main aspects for banks to monitor follow.

- **Security.** The facility should be physically secure to prevent theft and damage to the stored commodities as a result of weather conditions or infestation.
- **Equipment.** The facility should have adequate and good quality equipment to ensure accurate measurements at the point of intake and to ensure effective handling. The bank-appointed inspector should check when and by whom equipment was last calibrated and may use test weights to check the accuracy of scales.
- **Commodity storage practices and grading/quality standards.** Banks should be conversant with standards and practices approved by the regulatory agency and observe their compliance.

What are the warehouse management and support systems?

The regulatory agency is responsible for checking the management skills of warehouse managers, but banks may wish to supplement this verification. If a bank believes that the management of a specific warehouse is not in accord with regulatory standards, it may consider refusing to accept the WRs it issues—a measure that should motivate the operator to take remedial actions. A licensed warehouse should be run as a business enterprise, without exception, whether it be a for-profit company or a cooperative. Banks should ensure and monitor the following elements of good warehouse management.

- **Administrative system.** An effective administrative system should be in place, and all management information should be readily available at any point in time.
- **Internal monitoring of operations.** The manager of the warehouse should have an active monitoring system in place and normally be present at the warehouse, or appoint a comanager with the necessary skills to be responsible in his or her absence. In the absence of such a person, the warehouse should be closed until the necessary staff member is available.

- **Effective communications/telecommunications.** Such facilities are of the utmost importance, particularly when the system uses electronic documentation. Communication lines, computers, and other equipment related to communication should be adequate and in good working order.
- **Recordkeeping.** Recordkeeping systems should be accurate, effective, and well managed.
- **Management/worker skills.** The skills of managers and workers should be adequate and in line with regulatory requirements. Samplers, weighers, and graders should be duly trained and certified to carry out their tasks.

What is the nature of the warehouse receipt documentation and central registry?

Whether the system is electronic or paper-based, it is vital that these components work effectively. An ineffective system can result in a series of problems ranging from irritating delays, through commodity movements without the approval of owners or banks, to fraud and financial loss. It is the regulatory agency's responsibility to keep the system in order, but here again the bank should carry out its own due diligence. At the outset, it should carry out spot checks to see if the system is operating as expected and that there is a correspondence between physical stocks and outstanding WRs and other obligations (unreceipted stocks and the warehouse operator's own grain). Well-operated warehouses will probably have a daily position record or similar document to keep track of this. Monitoring should continue so long as the warehouse is in operation, but especially during the first year of operation.

Banks should ensure that the two main challenges of an e-WR system identified in section 5—its security and efficiency, and the ability of users to operate it—are addressed. With regard to system security and efficiency, it is important to know where the server is kept and what security systems surround it.

Uganda, for example, has adopted an interesting model, piggy-backing on a mature system in South Africa. As the server is controlled remotely and independently, it will provide a unique audit trail of entries by the administrator, the warehouse operators, and users. Countries adopting such an approach will need to ensure the system is customized for local use. They will also need a local administrator to act as gatekeeper and registrar, and a call center along the lines of that established in South Africa. For reasons of economy, a single person may need to perform these functions in the early stages, which requires considerable trust in the capacity and good faith of the local staff operating the system. For this and other reasons the bank should do its own due diligence, investigating a number of matters including the following:

- Whether the e-WR system is fully customized for local use
- What contracts and service-level agreement the regulatory agency has with any service provider and what system it has put in place to monitor compliance
- The background and qualifications of the administrator and the call center operator; additional security may be obtained if they are bonded
- The existence of fully qualified assistants who can be deputized in the absence of their superiors
- The initial identification of authorized users, which is not a simple matter in countries where many citizens lack identity papers
- Systems for confirmation of users' identity when they enter the system electronically or through the call center.

The ability of users to operate an electronic or paper documentation system will depend largely on the type and quality of training provided, and whether there is sufficient ongoing training. In some cases, those accessing the system will be small traders, farmers, or representatives of farmer groups, all of whom are likely to be accustomed

to operating a mobile phone but not necessarily computer literate. Using an e-WR system will be a considerable challenge, requiring not just initial training, but regular refresher and updated training, along with monitoring of uptake and trouble-shooting, particularly in the early years. Banks will need to inquire as to whether these elements are in place.

7 Collateral Management Services: Issues and Due Diligence

In the absence of a full WR system using public warehousing, many countries rely on collateral management or stock monitoring services for warehouse financing. This section provides information for bankers on the nature of these services.

In this regard, banks are concerned with the same principle risks and issues as described in section 6 for public warehousing systems. Banks need to ensure that the commodities securing loans are maintained appropriately to ensure both quantity and quality. Also, banks need to protect themselves against nonperformance or fraud on the part of warehouse operators.

There are, however, certain key differences in the mechanisms for structuring, monitoring, and managing warehouse finance loans made within a full WR system framework with public warehousing and loans that entail private contractual services such as CMAs and SMAs. This section describes the main due diligence a bank should undertake when underwriting warehouse finance loans that use either CMAs or SMAs offered outside of public warehousing frameworks as part of the loan structure. It focuses more on CMAs than SMAs, given that the former provide greater protection to banks in warehouse finance.[1]

[1] The information in this section is partially drawn from interviews with Sam Owusu, Managing Director of Ecosafe Ghana Ltd., and formerly Operations Manager for Société Générale de Surveillance (Ghana) Ltd., and reflects his experience in Ghana as well as insights he gained on missions to other countries including Cameroon and Nigeria.

7.1 Differences between collateral management and stock monitoring

Both CMAs and SMAs are contractual agreements, normally provided within the framework of a tripartite agreement between a bank, a borrower, and a collateral manager/stock monitor (the commodity buyer may also be a party to the agreement in some CMA cases). Stock monitoring services are generally less expensive and provide a much lower level of security than collateral management services.

Table 7.1 illustrates the key differences between these two types of services. The same companies that provide collateral management services typically provide stock monitoring services as well. However, while collateral management is typically offered by large international operators, stock monitoring may also be offered by a range of service providers, including local operators in many markets.

Table 7.1 Comparison of collateral management and stock monitoring agreements

CMA	SMA
→Usually involves three parties (bank, borrower, collateral manager), although a fourth party (the commodity buyer) may also enter into the agreement →Legally binding instrument with a (typically nontransferable, nonnegotiable) WR issued to formalize →Collateral manager holds the keys to the warehouse and controls all stock entering or exiting the warehouse →Collateral management staff are on site during working hours to manage the stock →Normally an expensive service, with a fixed monthly fee per site managed plus variable costs for insurance, warehouse rent, security, and/or physical handling of commodities	→Involves two parties—the bank and the stock monitoring company →The bank's loan is secured by a pledge or a floating charge over the borrower's inventory/assets (which includes the stored commodities), rather than a WR on only specific commodities in storage →Bank typically uses stock monitoring services to monitor inventory levels of commodities pledged as loan collateral but does not link individual loan advances to exact commodities in storage →Stock monitoring reports are usually issued to the bank; often, these are not legally binding and cannot be transferred to other parties →Staff are required on site only for inspections at intervals defined in the SMA →Normally less expensive than a CMA

7.2 Major issues/risks for banks

Collateral management can partially convert credit risk into operational, market, and liquidity risks. Although this does not imply that borrower credit risk is unimportant, it does shift the emphasis of analysis and risk management into other areas. Thus, much of the risk management for warehouse finance loans under CMAs involves procedural exercises in managing these other risks. The relevant risk factors arise from markets, counterparties, third parties, external systems, and data sources. The major risks related to financing under CMAs involve

- the bank's own experience and capabilities in financing commodities;
- price risk and marketability of each commodity financed in case the bank needs to sell its collateral in the event of borrower default;
- the underlying instrument of security interest, which includes the product, the type of warehouse, the legal validity of the bank's possessory claim, and any claim against the insurance policy pledged in the bank's favor;
- the collateral management company, in terms of its capability, its performance in discharging duties, and its ability to arrange valid insurance;
- the warehouse, including its accessibility, physical facilities, and security arrangements;
- liquidity and the strength of the collateral manager's balance sheet; and
- the strength and reliability of the insurance company and its underlying policies.

The collateral manager and the bank must identify, monitor, and manage these risks as efficiently and completely as possible.

To address the first two risks noted, banks should only lend in sectors they understand. When financing against a commodity stock, they must understand its storability, its price characteristics/trends, and the marketability of the commodity's specific type/grade. Such knowledge is particularly important for banks new to the business of commodity financing. One local bank, for example, financed rice imports without realizing its grade was not one commonly consumed in the market countries. Another bank stored its stock

in a warehouse where incompatible commodities (rice and fertilizers) were both kept, not realizing that it is extremely difficult to clean bulk fertilizer bins and equally difficult to ensure that they are adequately clean.

The collateral management company has many responsibilities in addressing the risks related to the WR instrument and the adequacy of its services. It is the responsibility of the collateral manager to ensure the presence of a reputable security company; the presence of safety and firefighting equipment in the warehouse or close at hand; and a secure, impregnable warehouse, adequately fenced, all of which ensure the physical premises are protected. Collateral managers must ensure all incoming stocks are checked and recorded, and that all releases are authorized by the appropriate bank and collateral management personnel; these procedures ensure that the commodities are maintained in the correct quantities as pledged to the bank by the WR documentation. The collateral manager is also required to have adequate financial capacity to maintain its operations according to the obligations of its CMA with the bank. The company's fulfillment of all of these responsibilities must be checked and confirmed by the bank.

Standard insurance policies (such as for water damage, flooding, fire, etc.) should be in place for the warehouse building. Insurance coverage will be arranged by the borrower, the buyer, and/or the collateral manager depending on the terms of the CMA. The bank should insist that it be noted on the relevant policies as a named insured or assignee, and as first loss payee with respect to the commodities it is financing. A variety of other risk management products are available to assist in structured commodity trade finance transactions, including political risk insurance to cover the inability to export or to repay loans due to government interference; cargo insurance to cover the risk of fire, flood, and theft; professional indemnity and fraud liability coverage; and futures and options contracts to cover the risk of a decline in the value of the commodities. Critical details regarding insurance policies are described in box 7.1.

7.3 Factors to consider in selecting collateral managers

In choosing collateral management companies with which to work, banks should develop their own criteria and/or adopt industry benchmarks and rate collateral managers against these before entering into CMAs. Key factors to consider include the following:

- The quality of the company's board and management, and its basis in modern principles of corporate governance
- The company's reputation, with references checked
- The strength of the company's balance sheet
- The strength of the company's operational risk management systems and adequacy of insurance coverage
- The company's ability to provide well-managed, well-equipped, and secure storage facilities that may be either leased or owned
- The company's use of effective, up-to-date systems of transaction control and data management to guarantee efficient processing and traceability of records
- The motivation of the company's staff, the adequacy of their remuneration, and their length of service
- The staff's level of training and provisions existing for their professional development.

With regard to this last, the company's staff must have knowledge and skills in collateral management, risk management, shipping and logistics, warehousing, and auditing. The company needs to demonstrate a commitment to its staff through continuous training and capacity building.

7.4 Monitoring and supervision for banks

Before entering into a CMA, a bank should carry out its own survey to prepare a warehouse verification report to establish the capability and

Box 7.1 Critical points to address in insurance policies

Insurance companies can easily take advantage of loopholes to avoid payouts. For this reason, a bank's risk management team should carefully check the wording and coverage (or exclusions) of insurance policies in addressing the following:

- Heating, sweating, and spontaneous combustion of commodities
- Sweating, condensation, and mold on containerized goods (including under full container load status)
- Losses and shortages noticed on unstuffing intact container seals (including under full container load status)
- Commodity-specific risks such as frost, in the case of rubber; melting, in the case of cocoa; country damage, in the case of cotton (depreciation by weather, excessive or careless handling, or in transit); and contaminated/broken hoses, in the case of vegetable oils
- Variation in temperature of frozen goods and the evidence required to substantiate this variation
- Substitution of goods (i.e., products substituted with poorer-quality ones)
- Risk of strike, riot, civil insurrection, terrorist acts, etc.
- Storage/reforwarding expenses following authorities' refusal of insured goods' importation on phytosanitary or other grounds (in such cases, goods are generally held in bonded warehouses for long periods of time, and shipping-out charges are high)
- Inland transit risks
- Delays in shipment due to acts of God and political risks and other events of force majeure
- Mysterious disappearance or borrower theft/wrongful conversion for own use of the goods.

(continued)

competence of the operator, taking into account the factors discussed in subsections 6.3 and 7.3.

Bank staff are not expected to be collateral management specialists, but they should make spot checks to determine the quality and quantity of goods at the time of their receipt at the warehouse as well as periodically to ascertain hygiene and proper storage. Goods in custody should be under lock, the arrangement to ensure proper control of access keys should comply with underlying CMAs, and the key register should be continuously updated. The bank should also make unannounced visits to audit the stock and check warehouse performance, and monitor depositor's payment performance and the release of goods. The bank should identify early warning signals of nonperformance and take necessary action to correct discrepancies or remedy situations in accordance with the CMA.

The bank should check the accuracy of all documents received from the collateral manager, including reports on goods deposit, commodity appraisals, monthly stock reports, and reports on the release of goods. It should ensure WRs are correctly completed and that the duration of insurance coverage extends somewhat beyond the term of the loan facility.

In this vein, banks should build flexibility into the CMAs in order to deal with delay. For example,

Box 7.1 Critical points to address in insurance policies (continued)

The adequacy of a range of other relevant provisions of insurance policies should also be verified, including the following:

- A difference in conditions rider is included, meaning that the bank is not responsible for the compliance by the assured (the original beneficiary under the policy) with policy representations and warranties and conditions. This provision enables the bank to receive full policy coverage if there is a loss, even if the assured, due to noncompliance, would be unable to make a claim.
- All appropriate disclosures have been fairly and fully made on the insurance application. The insurer is entitled to deny coverage if there has been incomplete disclosure of a material fact that could be said to have affected the risk assessment or policy premium.
- The bank is entitled to make the claim and receive the proceeds in the event that the policy holder becomes insolvent and is unable to make the claim directly. This is particularly important for professional liability and fidelity coverage of the warehouse operator.
- The bank is given the right to receive timely notice of policy cancellation and nonrenewal, and the bank will be entitled to pay the renewal premium in the event of failure of the assured to make such payment.
- If the insurance is written by a local underwriter and reinsured in Europe or North America, it is possible to have a cut-through to the reinsurer so that claims can be paid offshore and in hard currency.
- The clause dealing with misappropriation covers all staff and does not (as would be the case in a standard contract) exclude top management. In the latter case, the bank should insist on a rider.
- The policy specifies who is liable in the event of infestation and who must pay the cost of pest control and reconditioning the commodity.

If the coverage is furnished under an open marine cargo policy, there are certain additional aspects that should be checked. Does the policy include a warehouse-to-warehouse rider? Is the warehouse within the maximum inland distance (if any) specified in the policy? Will the intended duration of storage extend beyond the maximum inland storage period allowed in the policy?

time periods covering other requirements for quality certificates and contractual arrangements for the warehouse should extend until past the maturity date of the loan facility.

7.5 Avoiding and settling disputes

The bank must ensure that the details specified in the CMA are professionally adequate and conform with the requisite criteria of enforceable contract law—in terms of mutual consent, mutual consideration, capacity, legality, performance, good faith, provision for remedies and arbitration clauses, etc. The bank should also take steps to avoid disputes that could occur in the event of an insurance claim; this entails careful selection of insurers and the avoidance of underinsurance. Box 7.1 details specific considerations banks should be aware of regarding the wording of policies and their exclusions.

Disputes that cannot be settled amicably are normally handled through arbitration, so as to avoid the costs and delays associated with the courts.

Arbitration is generally more common in international trade, where commodity-specific arbitration schemes—such as that available through the London-based Grains and Feed Trade Association—are available. Such schemes are far less common in developing countries; moreover, skepticism often exists about the willingness of courts to enforce arbitration awards. This combination of lack of mechanism and lack of trust gives parties a strong incentive to resolve their differences amicably.

7.6 Protecting quality of commodities in storage under collateral management

Many CMAs lack clear quality standards. Quantity of goods is much more easily ascertained than quality, and collateral managers are thus more likely to provide full out-turn guarantees for specified quantity than for quality. While collateral managers carry out pest control and other measures necessary to preserve commodities and may go to great lengths in other ways to prevent quality losses, they may be unwilling to take formal financial responsibility for quality.

Risks of quality deterioration can pose a significant problem to the depositor and the lender. For one thing, a decline in quality adversely affects market price, which would affect the depositor's ability to sell the commodity for the expected value to repay the loan. A lower value would also reduce the LTV calculation in the borrowing base governing the loan and trigger a margin call or top-up clause. A lower total value would impair the bank's ability to recover the full loan outstanding amount should the bank be forced to sell the commodity in the event of an uncured default. Further, quality loss is likely to be associated with a loss of quantity. Quality losses are most frequently caused by insects and other pests (rodents and birds) which, because they also consume the commodity, thus cause quantitative loss as well.

Banks should be aware of the risks related to quality losses and should structure LTV ratios with a cushion to allow for quality losses within a normal range according to the type of commodity and the conditions in which it is stored. Regular site visits and sampling of commodities stored under CMAs can help banks monitor quality.

To conclude this section covering the various aspects of collateral management services, box 7.2 provides illustrative information regarding collateral management services available in Ghana.

Box 7.2 Case study in collateral management practice and performance: Ghana

In Ghana, collateral managers are relied upon to protect the interest of the banks in the absence of tangible alternative collateral such as a cash deposit or immovable property. Banks rely on collateral managers to advise them when assessing requests from their clients, especially on potential risks in managing the underlying commodity pledged as collateral and how to mitigate these.

Before engaging the services of a collateral manager, banks apply reasonably strict assessment criteria, such as the following: a minimum of five years' experience with CMAs, a minimum of three previous CMAs with other banks, and experience in handling specific products identified by the respective bank. Collateral managers take full responsibility for warehouse management, even though the physical operations are normally carried out by staff of the borrower (the owner of the commodities). The collateral manager issues a nonnegotiable WR to the bank, as Ghana's legal framework does not provide for negotiable or transferable WRs.

Ghanaian banks have a high level of confidence in local collateral management service providers; thus, it is fairly easy for borrowers to access financing from the banks. The cost of collateral management services in and around the country's ports ranges between $1,500 and $2,300 per site per month (including security); charges for insurance, tallying, and fumigation are additional. The cost of the insurance is sometimes higher than for the collateral management service (see subsection 3.2). In practice, borrowers seeking the service of collateral managers for smaller shipments often object to the high cost of insurance coverage demanded by banks, sometimes leading to a process of negotiation between borrower, depositor, and bank that is mediated by the collateral manager. Because banks are mostly interested in the quality of the collateral management services, some of their specific requirements can often be reduced without seriously compromising their security interest.

The borrowing costs (including interest rates and charges for collateral management services) may not be below commercial rates charged by banks for other kinds of working capital lending. However, in an environment where banks otherwise insist on land and building as collateral, many borrowers lacking hard collateral are only able to access financing via the services of collateral managers to borrow against their commodities in storage.

There has been no high-profile fraud regarding collateral management in Ghana, which reflects the professionalism of the service providers. Collateral managers operating in Ghana maintain strong operations through a variety of measures, including strict inspection of the warehouse before leasing it and signing the CMA, proper stacking inside the warehouse, supervised tallying in and out of the warehouse, appropriate and fair wage/salary structure for warehouse staff, and sound knowledge of the commodities to be stored.

Contractual disputes regarding CMAs are uncommon in Ghana. Alternative dispute resolution (arbitration) services exist for those who need them, but do not appear to be greatly used in domestic commodity trade.

Lending banks carry out ongoing monitoring involving periodic unannounced visits; in some few cases (especially involving high-valued goods), they provide additional padlocks and require the collateral manager to send daily (instead of weekly) stock reports to the banks electronically.

8 Warehouse Finance for Banks: Elements

Each bank should establish a specific strategy for warehouse finance that is appropriate to its local markets and aligned with its own credit culture. This section describes the key elements that should be included in the development of the bank's warehouse finance strategy. It also reviews the staffing, marketing, and pricing considerations relevant to implementation of the strategy. Lastly, it details the key credit and risk management guidelines that must be incorporated into a credit policy framework for warehouse finance.

8.1 Market appraisal of warehouse receipt financing

Before banks decide to start financing their clients using WRs as collateral, they need to understand the market fundamentals in terms of the framework and relevant commodity prices and volumes in their markets. First, the bank needs to determine whether the warehouse finance framework is operating in a manner acceptable to the bank and is established correctly, in accordance with the guidance and explanations outlined in sections 6 and 7, depending on the type of system involved (regulated public warehousing or collateral management services, respectively).

Second, with regard to funding seasonal storage, it is important to confirm that normal seasonal price variability reflects carrying costs and that there is no significant negative impact from government policies on the prices of the commodities to be financed. Only when the result of this review is positive should the bank decide to finance clients using the commodities backed solely by WRs as collateral. If the result of the review is not satisfactory, the bank may request additional forms of security or risk mitigation.

Further, there should be sufficient potential demand for warehouse finance in local commodity markets to justify the investments of the bank in training, new policies, monitoring, and hiring specialized staff. The banks should assess the business volume in the various commodity markets that are expected to be eligible for WR financing. This financing should first be initiated in formally traded and familiar products (e.g., coffee in Tanzania or grains in South Africa). Formally traded crops usually have the most transparent price setting, especially when the crop is traded via a commodity exchange or auction.

8.2 Bank financing strategy, policy, and procedures

Bank warehouse receipt strategy and policy

The bank should have a clear high-level strategy for WR financing approved and signed off on by the bank's senior management. Providing successful

WR financing is only possible if the bank's senior management is supportive and clearly understands the WR system. The strategy and policy should address the following:

- **Commodities that qualify for the WR financing program**—an assessment of market conditions and pricing for each commodity market, which includes participants and buyers, client segments, price volatility, risks, types of commodities (export, cash crop, staple), and volumes
- **Warehouses and collateral managers with which the bank is willing to work**—an assessment of warehouse infrastructure and management including existing storage facilities, licensing, product standards/grades, quality, inspection, and monitoring services
- **Commodity quality requirements**—a detailed assessment of factors to determine the weight, quality, and grade of each commodity to be used as collateral, including an assessment of existing commodity grading standards and warehouse measures to ensure quality
- **Enabling environment factors**—an assessment of the nature of the regulatory environment; an understanding of the operational aspects of regulation, including existing collateral registries; and the implications of potential changes in any of these factors
- **Targeted clients**—a strategy including both short- and longer-term targets; short-term targets will be borrowers who are easiest to deal with and involve low risk, such as processors, traders, or the most bankable producers; longer-term targets may be pursued once the system is running well and the bank gains experience and expertise and seeks to build its WR portfolio by reaching upstream to other clients including a wider range of producers and producer organizations.

Once the bank has decided on its strategy and clearly understands the legal and regulatory issues involved, it should draw up internal procedures. A high-level policy should be developed into a detailed credit risk policy on WR financing, and approved by the bank's senior management and risk management department. At the operational level, the policy should then be developed into detailed procedures, and signed off on by the bank's risk management and compliance departments.

Loan officers and customer relationship managers must have a clear understanding of the WR system; the bank's policy; and the procedures to be followed for the evaluation, approval, and monitoring of warehouse finance transactions. Training must be provided for all personnel involved in all aspects of the external system, as well as internal policies developed to ensure that the correct procedures are followed and paperwork completed for legal transfer of title and proper ongoing loan monitoring.

Skills and staff requirements

The bank needs skilled and well-trained staff to ensure successful WR financing—including loan officers, customer relationship managers, and bank operation officers with knowledge and thorough understanding of the following:

- Trade and commodity finance mechanisms
- Types of commodities, market structure, factors determining prices, and typical seasonal patterns
- WR system, regulations, rules, and procedures
- Government regulations and interventions, including potential future changes
- Borrowers' business model and operating environment
- Cross-selling opportunities and basic knowledge of other bank products.

Appendix G contains a warehouse finance case study on the Addis Corn Company that may be of use to banks in staff training.

Market monitoring and price information systems

Bank management in general and loan officers in particular should have a reasonable understanding of specific commodities—including their regions of origin, production factors, main markets, historic price volatility, and key players—so as to be

able to monitor and forecast market trends and anticipate as much as possible changes that may negatively affect commodity price. This understanding may be gained in a variety of ways. One option is to develop and invest in detailed staff training; another option is to employ a specialist with a trading or brokering background as a key resource person. A third approach is to hire or contract with experts to help the bank set up the necessary procedural, analysis, and risk management systems.

The bank will also need to systematize the collection and internal dissemination of information for lending decisions and for risk management specific to WR finance, including the following:

- The bank's internal information on the applicable interest rates for the product, the WR loan portfolio by commodity and value, and the bank's own liquidity and availability of funds for credit given potential seasonal peaks in commodity finance
- Data and news on the market for the relevant commodities and the main factors likely to influence prices, including production, imports and exports, domestic and international prices, and planned and actual interventions by governments and food aid donors (if the commodities in question are food crops)
- A representative commodity price reference as a prerequisite for any commodity-backed financing along with processes to identify, monitor, and share the reference price internally.[1]

The collection, analysis, and dissemination of market and price information necessitate the appointment of a designated person or department internally. This activity could also be outsourced to an external specialist who will be in regular contact with bank staff. The process of determining the daily price is very sensitive and should be protected against undue influences by explicitly prescribing the process of price determination, strictly enforcing the procedure, and appointing the right person for the job.

There is wide variation in the quantity and quality of market information by country and crop. In the case of cash crops, most countries do not produce enough to have a major impact on international prices. Thus, the most important consideration is the state of the international market, for which information is often available, including futures prices. The competitive position of local products, and the extent to which local products trade at a premium or discount to internationally quoted types or grades, should be understood. Some exporting countries regularly publish price indexes or auction prices for coffee, cocoa, cashew, and other crops; banks can use these resources to monitor the prices of the commodities being financed.

Several factors make international price transmission in developing countries much weaker for typical staple food crops (such as grains and pulses) than for cash crops:

- Their relatively low unit value (e.g., $200 per ton for a food crop, versus $1,500 per ton for a cash crop), which causes fixed costs of transport and handling and differences in the type of grain (e.g., white versus yellow maize) to have a relatively high percentage impact on prices at wholesale and consumer levels
- The often poor market infrastructure (roads, rail, ports, river transport) within countries and between countries within the same region
- Ad hoc government interventions at border and internal markets, mainly on food security grounds, such as those discussed in subsection 10.4 in Africa.

South Africa has comprehensive and widely trusted information on grain production, stocks, and prices, which greatly assists in both trade and financing, as banks use this information to make decisions on policies and positions on seasonal storage. Borrowers can hedge or lock in prices for up to two years on SAFEX and thereby manage their price risk.

[1] In some cases, the reference price will also need to be shared with the borrower, as it is used to calculate the LTV ratio, measure the borrowing base formula, and trigger top-up clauses or other covenants.

In other Sub-Saharan African countries, there is often a low correlation of domestic prices with those in international markets and elsewhere in Africa. One factor contributing to the low correlation is the sometimes multidirectional nature of regional trade—e.g., with Mozambique and Zambia exporting maize to Malawi in some years, and importing from Malawi in others, depending on the size of the crop in the year concerned.

Information provision is less elaborate in other Sub-Saharan African countries than in South Africa for a number of reasons:

- Governments issue crop forecasts which vary in quality from reasonably accurate to very inaccurate, depending on the methodology used.
- There is little information on stock holding, as governments are challenged to estimate stocks that hundreds of thousands of small farmers hold back for local consumption.
- Statistics on trade between neighboring countries is very weak, although some organizations (e.g., the Famine Early Warning Systems Network and the Regional Agricultural Trade Intelligence Network) monitor the volume of informal cross-border trade.
- Some countries produce and periodically update food balance sheets based on estimates of production, imports, exports, and stock holding.
- Many countries have public access market information systems run by governments, international organizations, and/or nongovernmental organizations, providing weekly or biweekly prices in important urban markets through newspapers, the Internet, and short message service (SMS). The prices generally refer to nongraded commodities (e.g., off-truck price for maize at Kisenyi Market in Kampala, Uganda), which vary in moisture content and other quality parameters. This situation is rapidly changing in the face of technological innovation involving the use of mobile phones.
- Some emerging commodity exchanges, such as those in Malawi and Zambia, publish bid, offer, and traded prices for graded commodities (mainly maize), though these are still thin markets, with intermittent trades and limited volumes. If these exchanges can develop into major trading centers, they will provide a much-needed stream of spot prices for commodities of standard quality as well as information on traded volumes.

There is much that banks can do to use these data for effective lending and risk management. They must evaluate the various data sources available, and incorporate the best and most relevant data into their own internal market monitoring and information system. The data can be combined with internal bank information and information gleaned from other banks and trade contacts (those to which the bank is not providing commodity-based financing), and circulated via regular bulletins to management, loan officers, and other relevant staff. Each bulletin may contain information on the commodity loan portfolio and stocks, commodity prices and expected trends, total exposure by borrower and by commodity, and actions to be taken if price fluctuations trigger default or top-up clauses. The monitoring department should issue ad hoc alerts of news that may call for immediate action.

The frequency with which the monitoring department records price observations will depend on the volatility of the market as well as the ease of obtaining information. During the immediate postharvest period, it may be useful to record and circulate information on a daily basis. During the rest of the year when the market is less volatile, observations could be less frequent, such as on a weekly or bimonthly basis.

The bank's analysts may combine information from internal and external sources to produce a borrowing base form tracking outstanding WR loans versus pledged WR value via the LTV ratio. Frequent calculation of the LTV ratio will alert relevant branch staff to the need for top-ups or other actions to minimize the risk of loss to the client and default to the bank. More information on this topic is provided in subsection 8.3, and appendix G includes an example of a borrowing base in which the LTV ratio is calculated (table G.4).

Warehouse receipt loan pricing strategy

The loan price will be the sum of the cost of funds, the bank's operational costs, a risk premium, and an expected profit margin. The risk premium will depend on the strength of the WR system in the country concerned and the bank's confidence in the warehouse operators. The bank should price WR loans according to risk, which requires the bank to monitor the probability of default and the loss given default on its WR finance portfolios.

Assuming a well-functioning WR system (or solidly structured CMA), loan costs for WR financing should be lower than for comparable working capital loans for several reasons:

- The collateral is being managed by a third-party warehouse operator under the oversight of a regulatory agency or by a reputable collateral manager.
- The bank will normally be financing an agreed LTV ratio against a specific commodity on which price information is available.
- Loan recovery should be relatively easy in the event of default according to procedures and legal provisions to allow the sale of commodities as collateral.

WR financing is normally provided at a specific or market-related interest rate. It can be done at a fixed nominal price, in which case all costs—including full storage costs, interest, bank service charges, handling fees, transaction fees, moisture losses, quality losses, bagging (if applicable), OTC option premiums (if applicable), and WR-related costs—are included in the nominal buy-back amount on a certain date.

Marketing strategy

WR financing should allow the bank to increase its exposure to its existing agricultural clients. Although all agricultural loans, including those financing commodities, may previously have been secured with fixed assets, if the bank can securely lend against pledged WRs, it can release its security interest in other assets. As a result, these borrowers are able to use their fixed assets as collateral for other loans, including term financing of further investments. Some agricultural small or medium-size traders may have limited or no fixed assets. Warehouse finance structures may be the only opportunity for banks to begin to finance these types of borrowers.

Borrowers can potentially gain from simpler financing arrangements, higher leverage against their asset base, more straightforward sales and marketing of their stocks, and better pricing on loans. Banks should educate borrowers on the advantages and mechanisms of WR financing as compared to other methods of stock financing, engaging with them through meetings, seminars, brochures, and the Internet.

WR financing is important in developing business with new clients, enabling banks to move up the value chain (from processors and traders to farmer groups and larger individual farmers), diversify into new sectors (e.g., frozen fish, timber, distribution warehouses), and expand financing of commodity imports. In smallholder-dominated systems, it is more difficult to penetrate the farming sector than the trading sector, so effective education and promotion are crucial. Banks should develop internal capacity at both the headquarters and branch levels, and use their branch networks to access viable new segments further up the value chain and to organize promotion and training.

Critical to fine tuning a bank's marketing strategy is an understanding of the drivers (financing purposes) of the four key borrower segments and developing value propositions to meet each segment. Table 8.1 sets out borrowers' typical purposes and the key criteria banks should use in evaluating proposals from each segment. Besides those listed, criteria such as minimum lot size, minimum loan amount, and cross-selling opportunities are relevant for all four groups.

Strong forward market linkages—e.g., export contracts in the case of coffee—mitigate commodity price and marketing risks for the bank. However, banks should not uniformly insist on

Table 8.1 Typical drivers and key criteria for warehouse receipt borrowers

Borrower	Financing purpose	Key borrower evaluation criteria
Farmers	→Buy time to benefit from price recovery →Funds applied to buy inputs for new season and for other income-generating activities and to meet consumer needs	→Track record in depositing products in third-party-controlled warehouse →Minimum volume to be deposited/minimum loan amount →Existing relationships with bank and buyers →Financial records and credit standing →Understanding of the market and forward linkages →Understanding of WR financing →Potential for other banking services
Farmer organizations	→Buy time to benefit from price recovery →Funds to provide first payment to members →Create liquidity to finance more trade activities	→Same criteria as for individual farmers →Track record of organization →Membership commitment, measured by equity contribution and other factors →Management capability →Backward linkages to member and nonmember suppliers
Traders	→Liquidity to finance commodity trade	→Backward linkages to raw material suppliers and forward linkages to market →Credit standing →Marketing/logistical capability →Potential for other banking services →General and financial management
Processors	→Finance raw material and finished goods stocks	→Same as for traders →Reliability and efficiency of processing plant and associated equipment

forward contracts as a condition for financing. In Sub-Saharan Africa, forward contracting sometimes occurs with cash crops but is uncommon with lower-value crops such as grains and pulses, unless they are destined for specialized markets such as for seeds or brewing.

Traders primarily use WR financing to source more commodities for trading. In general, they self-finance the first batch of commodities that can be used as collateral, using the bank financing to increase trade volumes. Commodity processors typically use their stock as collateral for bank financing for a longer period than do traders. For instance, a soybean processor may import soybeans using import financing, providing fixed assets as collateral. Once the soybeans have been deposited in the warehouse, the import finance is converted into WR finance using the stock as collateral, and the fixed asset pledges can be released by the bank.

Trade facilitation and proprietary trading

As banks become more involved in providing WR financing to traders, processors, and producers, some of these fixed asset pledges can be released by the bank. Banks will also see opportunities in grain trading in cases where they are financing a specific client, enabling them to get involved in the transaction to secure its investment.

The range of possible trading operations includes collateral liquidation, brokerage for clients, back-to-back transactions where the bank is principal, and open market positions. Banks should only undertake proprietary trading if it fits their

tradition and corporate culture, if it is allowed under local laws, and if there are robust firewalls between proprietary and service functions. To take advantage of these opportunities, banks need to further develop their information support services, trade-facilitating ability, and stock management systems.

8.3 Risk management and mitigation strategies

There are a range of risks related to WR finance; these can be categorized as follows:

- Borrower credit risk
- Structuring risk
- Market and price risk
- Currency risk
- Operational risk of the bank
- Performance risk of the warehouse operator/ collateral manager
- Legal risk
- Government intervention risk.

Good management provides the first line of defense against risks associated with WR finance. Thus, a bank needs to examine the design and practical implementation of the regulatory system as it exists (section 6), the warehouse operator's/ collateral manager's track record and management systems (section 7), and the bank's own internal systems. Beyond good management, however, banks must carefully assess and address all of the above-listed risks prior to undertaking any WR financing. Specific considerations associated with each risk are described below.

Borrower credit risk

Warehouse finance can be a very secure form of asset-based lending when properly structured and monitored. It provides highly liquid collateral that is stronger than other forms of working capital loans. Although a borrower's financial ratios may be less important than with other agricultural finance products, credit risks do remain regardless of how well collateralized the warehouse finance loan. While the collateral in the form of a WR is a significant risk mitigation tool, it is important to assess all borrower risks and how they can be mitigated.

The volume of transactions in warehouse finance may seem to make it relatively cost-ineffective to do detailed due diligence on each borrower, and the degree to which banks can afford to do so will depend on local circumstances. The principle of "know your customer" remains important in warehouse financing, whether the lending involves CMAs, SMAs, direct monitoring by the bank, or public warehousing. Especially in the early stages of a public warehousing system, banks will need to invest considerable resources in knowing their customers along conventional lines for borrower credit assessment—particularly when the players are untried and the legal aspects of the new system (good title, negotiability, etc.) are untested.

It should be noted that knowing your customer not only applies to the borrower, but also to other parties on which the bank is relying in the transaction, such as collateral management or stock monitoring companies or, under public schemes, the warehouse operator. The primary source of repayment for warehouse loans is still the sale of the commodity by the borrower in the normal course of business: the borrower will store the commodity, sell to a buyer at a good price, repay the loan, and retain the profits for future business. Therefore, much of a bank's credit analysis focuses on assessing the borrower to ensure he or she has the means to carry out this business. The remaining analysis focuses on ensuring that either the bank is able to sell the commodity itself or force the borrower to sell while conditions still exist to require full repayment of the outstanding loan.

The bank should perform its usual credit analysis as it would for any other borrower, including an analysis of character, capital, financial capacity, conditions, and collateral. Analysis of character and management skills should include an examination of key staff in addition to owners, preferably in person. It is important to understand the capital invested by management to ensure that the

company has sufficient investment in the stocks and incentives to perform are sufficient. The borrower's systems for monitoring and managing payment to and from suppliers and buyers should also be reviewed.

The bank should analyze financial capacity, such as net worth, liquidity, and profitability as well as market conditions and buyers to assess the borrower's ability to sell the commodities to effect loan repayment. The bank can mitigate financial risks by requiring all sales proceeds to be transferred to the borrower's account at the same bank. The bank may also consider the need for a custodial account for receivables and sales proceeds.

The warehouse operator/collateral manager should only release the commodity after receiving a signed release warrant from the bank; this is a normal arrangement under CMAs. Where the WR financing involves public warehouses, it is possible that the bank will be protected by special clearing arrangements for licensed warehouses. If not, the bank may require its client and the respective warehouse operator to sign a tripartite contract similar to a CMA.

Regarding liquidity, the analysis should assess the borrower's financial capacity to top-up in the face of declining commodity prices or reduced cash flows due to unfavorable market conditions.

In terms of collateral, the bank needs to ensure two key points. First, the value of the collateral must be determined at initial loan approval and monitored regularly. Unlike real estate or equipment, the collateral value of commodities in storage varies according to market prices, which may change daily. A key risk in WR finance is that the market value of the bank's collateral may drop to such a level that it no longer covers the debt, impairing the borrower's ability to repay. The risks related to collateral value as determined by commodity market prices are described under "Market and price risk."

The second issue regarding collateral is that the bank needs to ensure its security is perfected. Perfection of interest in movable collateral such as commodities is different from loans secured by real estate. In its underwriting process, the bank must confirm that the collateral for its loan is not subject to any previously perfected security interests, which may take the form of a charge over the specific commodities, an interest in all inventories, or a floating charge over all assets. Specific legal issues related to securing interest in warehoused commodities are covered in section 4. The bank should carry out an examination of other collateral that is unencumbered as well as any security interests already granted to other banks that could affect the borrower's business. These may include guarantees, mortgages over plant and equipment, assignment of insurance over plant and equipment, and assignment of off-take contracts. The bank will need to carry out searches depending on the laws of the country, particularly regarding the status of WRs vis-à-vis other creditors and the enforcement of rights against WRs. The loan officer should also conduct a physical examination of plant and equipment assets and review the leases of any leased assets, if applicable.

Structuring risk

Despite the relative simplicity of a WR financing transaction, there are a number of structuring risks that must be identified and, where possible, mitigated. The key to mitigation is ensuring that the loan structure is consistent with the commodity to be financed in terms of duration, value, and volatility. Staff experience and training are the best tools for mitigating structuring risk, along with appropriate procedures that are regularly reviewed and adapted as needed. It may also be advisable to benchmark the proposed WR financing against other, more familiar, financing structures.

The loan should mature before the maturity date of the WR, after which the warehouse operator is not contractually bound to deliver commodity of the quality specified by the WR. The bank should assess the marketability of the commodity, confirming that the market is sufficiently liquid to find a ready buyer.

The maximum loan amount should be consistent with the value and price volatility of the

commodity to be financed. Besides understanding the specific commodity dynamics and historical performance, the bank should ensure that it uses a reliable and timely market information source to establish and update the loan's borrowing base. The market price information should at least match the frequency and/or other market triggers that will be used for a revaluation of the commodity and top-up requests.

The bank's analysis of the commodity market and its price dynamics will determine the market reference price the bank and borrower will recognize on a daily basis. The bank will analyze the borrower's estimated quantity of the collateral to be pledged and the borrower's historical volumes to estimate the total quantity to be financed. The total line of credit amount, or guidance line, can then be set as a function of the quantity multiplied by the market reference price.

Lenders structure the LTV, or advance, ratio that will apply to the loan, which is calculated as loan outstanding divided by collateral value.[2] The general price level and price volatility, and the lender's general perception of the market, will influence the decision on the LTV percentage.

The LTV ratio level is an important risk management tool. For instance, where default risk is deemed high, a lower initial loan-to-market percentage of the underlying commodity will be financed (e.g., from 75 percent to 65 percent of the market value of the commodity represented by the WR). Once the loan has been made, frequent monitoring of the LTV ratio will alert relevant branch staff to the need for top-ups or other actions to minimize the risk of loss to the client and his or her defaulting to the bank.[3] Processes for monitoring the LTV ratio are discussed in more detail under "Market and price risk," below.

The loan should have covenants that offer either an early warning or allow the bank to intervene in case the loan terms are no longer appropriate to the situation. The bank should also ensure that the loan agreement contains adequate other covenants to protect its position.

Market and price risk

The commodity collateral provides the secondary source of repayment for the bank, and adequate monitoring of prices and other market trends for that commodity are critical in managing the bank's risk exposure. Assuming that warehouses are correctly managed, market and price risks are likely to be the greatest risks and the ones that require the most active management.

The commodity price will change subject to weather conditions, demand, quality, and speculation; this can only be managed with a reasonable understanding of market dynamics. A strong drop in market prices will lead to a shortfall of collateral value versus the outstanding loan. This risk is mitigated by the fact that the bank is applying a given LTV ratio. This ratio will vary by crop and commodity; a lower ratio will typically be used for more price-volatile and perishable commodities.

Monitoring the loan amount versus the value of the commodity collateral gives advance notice to both the borrower and the bank that price and market risks are increasing. When the loan is structured and monitored properly, risk management practices give the borrower time to take action to avoid or cure defaults well before the bank's collateral position is seriously compromised. If the borrower does not act when required, the bank also should have sufficient time to exercise its rights to affect the secondary source of repayment in order to fully repay the outstanding loan.

[2] The bank typically bases the initial loan advance amount on the agreed LTV against the prevailing market price. Given the expectation that prices will generally rise following harvest (and thus the initial storage and loan advance), this is considered a conservative practice for banks. However, the bank still monitors the price, such that decreases in price from initial market will trigger top-up clauses or margin call provisions.

[3] Lenders may use a more complex system consisting of initial margins and variation margins similar to those used in futures contracts.

The following elements are necessary for banks to manage commodity price risk.

- **Knowledge.** It is important to monitor price movements along with all fundamental elements influencing the market so as to forecast market trends. The frequency of price observations will depend on the volatility of the market as well as on the source of information. The more volatile the market, the more frequent the observations should be, although it may be more difficult to obtain information with appropriate frequency. Good commodity knowledge will, for example, enable the loan officer to make a distinction between normal seasonal price fluctuations and market disruptions that may affect the commodity in an abnormal manner.

- **A strong market monitoring and internal information system.** The collected information should be available in a timely manner to all key decision makers in the bank, and include information on the LTV ratio. The availability of this information will help bank staff understand seasonal trends, monitor the value of the collateral, and take corrective action if needed. A market reference price must be set and agreed upon with the borrower for use in the borrowing base covenants and top-up clauses.

- **Setting the LTV ratio.** The LTV ratio should be implemented taking into account commodity price volatility and the financial strength of the borrower, with a lower ratio for highly volatile commodities or financially weaker borrowers. Uncertainty about future price movements and a lack of information on factors affecting supply and demand may also justify a lower LTV ratio. (See a discussion of this under "Structuring risk.") It should be noted that the intrinsic value of commodity collateral to the bank is equal to the net income after liquidation, which is determined by the market value of the commodity on a given day less carrying cost obligations and liquidation costs. Both carrying cost and liquidation costs can, to a great extent, be determined with certainty well in advance and should factor into establishing the LTV ratio.

- **Monitoring the LTV ratio.** Once the LTV ratio and price reference are included in the loan agreement, the ratio must be recalculated periodically to monitor each borrower's position against the covenant requirement. Monitoring is usually done via a borrowing base calculation for each commodity type for each borrower. The market price reference is the major element to consider. It needs to be constantly monitored, as the bank relies strongly on LTV compliance as a risk mitigation tool. The frequency of monitoring will depend on the volatility of the price and the availability of information, but should generally be done weekly.

- **Top-up clause.** When the price of the commodity falls to a certain level, the loan is structured to trigger a top-up clause (also known as a margin call). The top-up clause or margin call provision is defined in the credit agreement, requiring the borrower to pledge additional commodities or cash if the collateral value (as measured by the LTV ratio) falls below the agreed covenant because of a drop in the commodity price (and thus its value).

  In practice, in the case of larger traders and corporate clients with sufficient financial capacity, the loan officer may address an LTV ratio default by checking whether the borrower has the necessary unencumbered stocks or cash to fulfill the top-up clause, although action may not be required immediately.

  With small and medium-size agribusinesses and cooperatives, the bank can either require the borrower to reduce the outstanding loan balance (or overdraft its business account) or pledge additional collateral to restore the LTV ratio. In any case, the credit agreement typically defines the period of time within which the borrower must return to compliance. If the borrower does not come into compliance, this triggers a default and the bank has the right to sell the commodity.

- **Hedging.** If the future price of the commodity can be fixed in advance, the borrower and the bank can avoid price risk, and the bank may

apply a higher LTV ratio and thus advance a higher loan to the borrower.

Hedging may be approached in two ways. If the country has a liquid futures commodity exchange, such as SAFEX in South Africa, banks can demand that their customers hedge the price risk on the exchange. Because of the existence of SAFEX futures and options contracts, South African banks have been able to structure production finance requiring borrowers to deposit their product with certified silos. However, few countries have futures and options exchanges, and for various reasons (not least basis risk[4]), it is often quite difficult to hedge on foreign exchanges. A bank may be able to hedge its client's position by buying OTC put options from a reputable and financially solvent market player, such as a strong international trading company or locally based grain miller. Box 8.1 at the end of this section provides an example of how such put options work. The bank buying the option has to trust the integrity of the seller and its ability to honor the option if it is exercised. In African countries, opportunities to enter into such arrangements are at present quite limited for food commodities, due to the nature of government interventions and the consequent risks to prospective sellers of put options.

Currency risk

Currency or foreign exchange risk occurs when a loan is denominated in local currency while the income or costs that are associated with the commodities being financed are in foreign currency, or vice versa. The best way to deal with currency risk is to come to an agreement with the borrower on a currency risk management strategy, including foreign exchange hedging, physical contracting, and pricing practices. The bank must monitor the borrower's implementation of this strategy and engage in ongoing due diligence to adapt the loan structure as necessary. This includes monitoring and revision of the LTV ratio, as it can be impaired by the borrower's exposure to foreign exchange volatility.

Operational risk of the bank

Internal bank risks are easily managed, but can also be the most dangerous when complacency overrides vigilance. Operational risks facing banks in warehouse finance include the following:

- Poor handling of paperwork and electronic documentation
- Mismatch between borrowings and pledged WRs
- Failure to act on client default or exceeding the borrowing limit/LTV ratio
- Deficient or inadequate use of market information
- Lack of understanding or failure to act in relation to WR procedures and rules
- Undue reliance on an underperforming regulatory system.[5]

Strict internal procedures, communication, and reporting are essential for a successful WR financing program, as it is the bank's responsibility to monitor the specific client and/or commodity and to take appropriate action. Banks should treat physical WRs and related documentation with the same care accorded cash and contracts:

- All movements of physical documentation should be recorded. Records must reflect the date of every movement (receiving and releasing), the name and other information regarding the bank personnel receiving the document to create an audit trail of such movement, signatures when receiving and releasing documents, and indications of status changes of such documents (registration of a lien or ownership changes while in the bank's possession).
- Physical WRs should be kept in a specific location within a safe as soon as possible after

[4] Basis risk is the possibility that a commodity contract's basis, the difference between future and spot prices, will move against the investor concerned.

[5] This has been evident in some Latin American countries that have had regulatory systems since the early 1900s.

receipt by the bank; thereafter, they may be moved to a central depository within the bank or to a third party contracted by the bank. Full details of the documentation should be recorded upon receipt at the central depository, including the relevant contract number. Confirmation of receipt in the central depository should be given to the relevant contract manager, who should record the location of the receipts in the appropriate contract file.

- The process of receipt handling should be documented, managed, monitored, and audited. Discipline regarding document handling should be as strict as possible, and no deviations from rules and procedures should be allowed. Any noncompliance should be addressed quickly and appropriately.

The process of trading and securing WRs provides many opportunities for fraud. Banks should protect themselves against losses due to fraud by dividing up the process, including assigning different functions and responsibilities to specific personnel and building a firewall between functional units. The following delineation of functions may be considered:

- Front office personnel should work with clients and be responsible for the preparation and collection of necessary documentation. Depending on the personnel situation at a bank, the information function can also be accommodated by the front office.
- Back office personnel should be responsible for administrative functions including consolidation of information flows from the various departments (with a particular view to identifying discrepancies rapidly), maintenance of contract files, and contract administrative management. Consolidation of information is critical, as large fraud cases typically involve collusion between individual bank staff members and borrowers (and sometimes individual warehousing staff). Assuming at least one of the reporting flows is not compromised, record comparison will rapidly reveal discrepancies on the basis of which an investigation can be ordered.
- The credit department or financial division should be responsible for all cash flow and cash flow–related actions. It can also, in close coordination with the contract manager, monitor the LTV ratio.
- The central depository should be responsible for physical WRs; instructions for the release of documents should be well controlled.
- The internal audit department should continually monitor the processes in all involved departments/units.

In an e-WR system, the delineation of responsibilities poses new challenges. Most important actions such as transfers and encumbrances will need to be concentrated at one desk, but it may be possible to divide the process as far as decision making, reporting, auditing, control, and general management is concerned. Depending on the interface with the external e-WR system, the hardware may need specialized set-up within the bank and independent monitoring and control.

Particular attention should be given to contract management. Commodity finance or trading contracts often have follow-up responsibilities related to market monitoring, documentation submissions, payment monitoring, top-up calls and monitoring, expiration dates on OTC options, and decisions to exercise an option or liquidate collateral. Although many of these activities require management decisions, a dedicated person or division should be responsible for coordinating the process. Because of its importance, most organizations develop specific rules and procedures on contract regulation. This responsibility should not be delegated to junior or inexperienced personnel, and training is of the utmost importance.

As described above, there are a variety of documentation flows for WRs and there is a need for coordination between units responsible for managing client relations, credit and loan monitoring, and various back office functions. Appendix H provides an operational risk assessment tool that can be used (or modified) to help banks achieve smooth processing of a WR loan. A word

of caution is appropriate in this regard: although tools, manuals, and checklists are important in helping staff comply with good practice, their existence does not guarantee success. There is no replacement for good line management and clear operating procedures.

Performance risk of warehouse operator/collateral manager

The collateral value is at the heart of a warehouse financing structure, and the warehouse and its operator are critical to ensuring that the quantity and quality of the commodity are not compromised. Various measures are needed to prevent fire and other disasters, theft, and—above all—fraud. Issues related to warehouse operation and collateral management are detailed in sections 6 and 7. The present discussion is concerned with the ways in which the bank needs to monitor compliance with key regulatory and contractual requirements related to warehouse operators and the associated risks. Banks also should check for good practice with regard to the following:

- **Documentation**, with warehouse license (if applicable) in place and prominently displayed; samplers, weighers, and graders who are duly certified; insurance policy and performance guarantees in place and displaying required terms
- **Warehouse services and goods handling**, with quality and quantity checked at reception, storage quality and safety maintained, actual goods and documents continuing to match over time, and goods upon exit correctly delivered.

The collateral manager or licensed warehouse operator exercises quality and quantity control from receipt of goods at the warehouse through the end of the storage period; this is backed up by requisite insurance and performance guarantees.[6] Only a regulated system can enforce common minimum standards across all warehouse operators. Banks will need to take a close look at the terms of CMAs and other agreements to ensure they adequately meet credit requirements, requesting tighter terms when necessary. Banks should also make periodic visits to check on the performance of licensed warehouses.

Insurance, bonding and indemnity funds, and intervention by the regulatory agency (if one exists) provide a last line of defense. The bank needs to be comfortable with the wording of applicable policies within the context of its own credit culture, taking into account the points noted in box 7.1. If warehouses are regulated, much of the bank's due diligence will be to check whether they are in compliance (and whether the regulator is enforcing compliance).

In some cases, traders and processors may operate the warehouse where their own stocks are being held as collateral for a loan, creating a potential conflict of interest. In this regard, the regulatory provisions of some countries' public warehousing systems allow warehouse operators to issue WRs against their own stock, but require these to be marked as such. The collateral value banks attach to such WRs varies according to their general trust in the system and the warehouse operators involved, as well as their confidence in the specific client. For example, a loan officer in a Russian bank used the WR as an aid in persuading the credit committee to approve a loan to a warehouse operator in which the bank had confidence, even though the WR did not have much collateral value in its own right. Bankers will probably require enhanced stock monitoring to build confidence in such cases.

Legal and regulatory risk

Subsection 6.2 identifies a range of possible risks associated with the legal and regulatory framework supporting public warehousing systems. Some risks affect all kinds of warehouse financing, notably whether the lender can enforce its rights in the event of default and whether out-of-court enforcement is allowed in the jurisdiction.

[6] Depending on the terms negotiated, a CMA does not necessarily ensure quality; see discussion in subsection 7.6.

Other specific risks in this regard involve laws on foreclosure and bankruptcy. For example, foreclosure laws are worthless if local courts do not permit a bank to remove and sell its warehoused goods. Banks will need to factor the cost of foreclosure into their pricing and the LTV ratios assigned to the client. Bankruptcy laws sometimes make it difficult to establish CMAs, as they do not recognize the temporary leasing of warehouses to a collateral manager. If the warehouse owner becomes bankrupt, both the warehouse and its contents can become part of the bankruptcy proceedings.

Government intervention risk

In some commodity markets, particularly those for basic foodstuffs, there is a risk that governments will take unforeseen actions that will undermine the collateral value; this is discussed in certain country examples in subsection 10.4. Banks should analyze such risks before entering into a financing contract. They should consider the historical record (how far existing laws, regulations, and public pronouncements can be relied on as a guide to future actions), possible scenarios and the probability of their occurrence, and the impact of these scenarios on the bank.

Box 8.1 Example of an over-the-counter put option in South Africa

A producer applies for a loan from his bank on June 10, 2012, offering as collateral 100 tons of grade A white maize in the form of a WR. The producer intends to settle his bill with the bank by September 30, 2012, and retains all ownership rights to his maize. The rationale behind his action is that he needs cash now, but believes that maize prices will increase substantially by the end of September and wishes to profit from this.

The market price at the time of application was $160 per ton. The bank runs the risk that market prices will stay flat or rise only marginally, rather than follow normal seasonal trends; it decides to reduce this risk by applying an LTV ratio of 80 percent. The bank's management is still not satisfied with the risk and demands a guaranteed minimum price before approving the deal. The risk managers will now consider obtaining an OTC put option. They can, for instance, negotiate with a credible miller and buy an option to deliver 100 tons of grade A white maize during the month of October at a minimum price (strike price) of $128 (80 percent of $160) plus carry cost up to the date of delivery. A reasonable premium will be negotiated with the miller—e.g., $4/ton. This premium ($400 for the 100 tons) has to be paid immediately in return for the documented OTC put option. With the extra security in hand, the bank will now loan $12,800 to the client.

Based on two hypothetical market scenarios on June 30, 2012, the bank will follow one of two courses:

- Market prices stand at $240 per ton, 50 percent above the price when the producer applied for the loan. Taking all costs into consideration, the client will only have to pay the bank $180 to settle his financing contract and repossess the grain. The OTC will expire and be worthless. If the producer fails to repay the loan, the bank will simply exercise its contractual rights and liquidate the asset at the market price. Depending on the terms of the financing contract, the bank may have to refund the producer the excess income over $180.
- Market prices fall to $110 per ton, about 70 percent of the price at the time of application, and there is a high risk that the producer will dishonor the contract. Should this happen, the bank will exercise the option and deliver the WR to the option seller (the miller) and receive the minimum guaranteed amount of $128 per ton plus the carry costs. The miller pays the market price ($110), plus the difference between that price and the strike price ($18 plus carry cost). The total cost to the miller will be this difference less the premium received, plus interest on the premium for the period the seller had possession of it.

OTC put options can be utilized by banks in any instance where they need to cover the downside market risk related to collateral.

Source: Training developed by Pieter Esterhuysen for Common Fund for Commodities, 2001.

9 Warehouse Finance for Banks: Process

Banks and their staff need to have a good understanding of the steps involved in originating and monitoring warehouse finance loans, the details of which are laid out in section 8. This section describes a typical process for banks to use in warehouse finance. It breaks down the implementation process into four main phases:

1. Initial borrower screening and application processing
2. Predisbursement and disbursement
3. Stock verification and monitoring
4. Release of pledged commodity (or, in case of borrower default, liquidation of collateral)

The following descriptions of these phases are based largely on the practice of the National Microfinance Bank of Tanzania in lending against WRs for coffee. Appendix G contains samples of relevant documentation used by the bank in this process.

9.1 Initial screening and application processing

The loan officer or customer relationship manager is responsible for initial borrower screening, which is a very similar process to screening potential borrowers for a revolving line of credit or overdraft facility. The main difference is that the bank prefers to initiate this borrower screening and assessment process well in advance of seasonal borrowing; this allows time for the loan to be structured and credit agreements to be signed before commodities begin to be stored and loan advances are needed. Thus, best practice is for all the steps outlined below to be performed within a time frame that allows agreements to be clearly defined and signed before the borrower begins to deposit commodities in the warehouse.

Screen potential borrower

The process commences well before harvest, when potential borrowers provide the bank with a forecast of the volume they intend to store during the upcoming season. The bank screens the potential borrower using a typical credit analysis and an evaluation of the borrower's past volume in the commodities, in addition to a projection of the upcoming season.

To carry out this assessment, the bank focuses on four main criteria:

- Experience and track record, covering the borrower's years in business, turnover, capitalization, and liquidity in general as well as the borrower's experience in selling or trading the specific commodity
- Borrower history and performance with this or other banks, noting the type of accounts held

and other outstanding debts or encumbrances, including of the collateral being offered

- Whether the commodity is acceptable to the bank, noting in particular whether it is possible to determine the market value of the commodity and risks associated with government intervention in the market
- Whether the warehouse is acceptable to the bank, noting its permission to operate, its licensure and operation within the law, its experience with the specific commodity, and its maintenance of insurance coverage acceptable to the bank.

If any of the four conditions above seems unsatisfactory, the borrower's request should be rejected.

Prepare loan application

If the decision is positive, the loan officer begins to prepare the loan application in consultation with the borrower. The loan application form or credit approval memo will typically contain the following sections:

- Borrower's details, business name, biographical data, contact information, registration, tax identification number, address, telephone, physical location, banking history, and date of appointment with the loan officer
- Business information, ownership, governance, business type, employment, and major customers
- Description of and relevant comments on the commodity and location of the warehouse where the commodity will be stored
- Business financial position and performance, balance sheet, profit and loss accounts, cash flow statement, and financial ratios (see table G.1)
- Risk analysis, looking at the specific financial, management, market, and operational risks including a SWOT analysis (strengths, weaknesses, opportunities, threats; see table G.3)
- Loan officer conclusions and recommendations, including summary of financial viability, market, management skills, collateral, and risk assessment; review of financial ratios; and recommended terms and loan structure.

Determine and approve loan amount and structure

Based on its assessment, the bank will determine a guidance line amount, which establishes a maximum total loan exposure for that borrower to include in its credit approval request (see table G.4). The bank will also discuss key structuring elements, such as the LTV ratio (including the price reference source to be used, even though the price may not yet be known) and the provisions of the top-up clause that will apply. These elements should be discussed with the borrower, and the bank may prepare a term sheet (see table G.2) and ask the borrower to sign it before proceeding to loan approval.

The credit approval memo is circulated for proper approval on the basis of the details above. Once the loan and its detailed terms are approved by credit authorities, the bank continues to the next stage of the process.

Prepare and sign credit agreement

The credit agreement must next be prepared, including preconditions for disbursement and opening of a business loan account. If the commodities are not held in a WR system that adequately protects the bank's interests, an appropriate CMA or other tripartite agreement between the bank, the borrower, and the collateral management or stock monitoring company must be drawn up. This agreement should provide that the warehouse may only release goods after written approval from the bank, that the collateral manager will monitor and report on the goods stored under the agreement, and that all sales proceeds will be transferred to the borrower's account at the bank.

The bank and the borrower sign the credit agreement jointly, with an original stored in the appropriate department. The designated operations staff member opens the electronic borrower file in

the bank system for maintaining and updating all information on the new loan.

9.2 Predisbursement and disbursement

Once the commodity has been delivered to the warehouse and the WR has been issued, the bank is ready to finance the agreed LTV percentage against the commodity stored in the warehouse. To do so, its electronic file must contain information derived from the credit agreement and the calculated maximum value of the loan/overdraft facility. Table 9.1 presents an example using Tanzanian coffee financing, showing the volume of coffee the borrower intends to purchase, the calculated price of the parchment coffee (in U.S. dollars and Tanzanian shillings), and the calculated maximum value of the loan/overdraft facility.

The authorized bank staff member enters the information from the receipt in the electronic borrower file and places the original WR in the collateral file in a strong (safe) room. This step is very important, particularly in WR systems based on paper documentation, in which the original WR confers title. The available loan is adjusted, and the loan officer informs the borrower that the WR has been processed and that the borrower can now borrow up to the specified maximum amount under the loan, subject to the specified LTV, according to the exact quantity delivered to the warehouse as well as any other preconditions.

There are certain exceptions to this procedure, notably when the bank has accredited a collateral manager or public warehousing company as its agent. In such cases, the warehouse automatically makes loans against the crops delivered as long as they meet minimum quality specifications.

The bank is now set up to disburse against WRs presented by the collateral manager/warehouse operator (if operating under a conventional CMA) or the borrower (if using a public warehousing system). The loan officer first checks the WR, accepting only original receipts issued by the warehouse operator. These receipts should be numbered and should specify the volume, quality, and location of the stored commodity. If the document presented appears to be counterfeit, the total loan must be blocked immediately. If everything has been checked and approved by the loan officer, the WR is then handed over to the authorized bank staff member.

9.3 Stock verification and monitoring

The collateral manager/warehouse operator presents a weekly stock report, which can be cross-referenced with the bank's data. The stock is periodically revalued based on the bank's price and market monitoring activities, and the information entered on the borrowing base form. The borrowing base form is a report that tracks all the advances under the total loan facility with the current market value for the commodity collateral pledged against each advance (see table G.4). Monitoring activities are outlined in greater detail in subsection 8.3, under "Market and price risk."

Table 9.1 Tanzania coffee financing: example of approved loan facility

Type of commodity	Coffee	
Expected volume (kg)	400,000	
Price per kg	$1.21	T Sh 1,500.40
Total value of the commodity	$484,000	T Sh 600,160,000
Value of the overdraft facility (70% LTV)	$338,800	T Sh 420,112,000

9.4 Release of pledged commodity or liquidation of collateral

Release of pledged commodity

Once it has been confirmed that sales proceeds are in the borrower's bank account, the authorized bank staff member prepares a release warrant for the warehouse operator, including details on which commodity stocks to release and the name of the buyer. The staff member adjusts the loan in the electronic borrower file according to the sales transaction.

There are different options for repayment depending on the credit agreement and bank policy. The bank may choose to deduct the full loan amount from any sales proceeds it receives; this is the most conservative approach and would likely be taken if the borrower is relatively weak or if the total loan outstandings are already near the top-up clause for the entire loan facility.

Alternatively, the bank may adjust the borrowing base, paying down the loan by only the amount equal to the LTV ratio multiplied by quantity sold, and remitting the remainder of the payment received to the borrower. In this scenario, after the bank pays down the loan, the LTV ratio on the remaining collateral held remains the same as before the sale. This approach would be taken if the borrower is solid and market/price risks are not moving against the commodity. Borrowers understandably favor this second option (which was used in the Tanzanian case cited in table 9.1), although the bank may prefer to employ the first approach with weaker borrowers—or at least include in the credit agreement the option to do so depending on market conditions.

Liquidation of collateral

If a borrower is unable to sell the commodity or return to LTV compliance after triggering a top-up clause (or margin call), it will be necessary for the bank to liquidate the commodity to effect repayment of the loan. Liquidation requires market knowledge and experience, involves various staff members, and should be done with great care. Given that market conditions often change rapidly, the decision-making process should be brief.

The process of finding a buyer and effecting a sale is relatively simple where there is a formal commodity exchange market. In its absence, traders and processors can be invited to tender for receipts and a minimum price reserve can apply. The bank should know in advance whether there is a good possibility that WRs will be liquidated and can obtain advance offers to make sure the best price is obtained. The bank may employ an in-house or independent trader/broker to expedite the sale of the collateral. Alternatively, the bank could execute an OTC option (if one exists) upon taking formal possession of the collateral. Where an OTC option is executed, the bank should give the necessary notice of this option to the seller in accordance with the contract.

10 Experiences with Warehouse Finance and Warehouse Receipt Systems

This section presents varied approaches to and experiences with warehouse finance and WR systems from around the world. It includes practical information on the establishment of such systems as well as on the ways in which banks have financed commodities in various contexts. It thus provides a wealth of information to users of this guide, whether bankers, government officials, or other stakeholders in the financial and agricultural sectors.

The material presented here is by no means exhaustive, but does attempt to give some sense of the range of existing experience. The section begins with a brief discussion of practices in developed countries, illustrated by the United States and South Africa; and then moves to two contrasting Asian cases in India and Vietnam. Practices in Sub-Saharan Africa, excluding South Africa, are next briefly described, followed by those in the transitional economies of Eastern Europe and the former Soviet Union. The section concludes with a discussion of collateral management–based financing techniques that have been successfully employed in situations of political change and/or financial instability, notably in the former Soviet Union during the 1990s and in Argentina during a recent national liquidity crisis.

10.1 Practices in developed economies

Basic warehousing, collateral management, and stock monitoring services are widely available—and supported by legal frameworks—in Australia, Europe, and North America, although warehousing practices can be quite variable. Transferable WRs are commonly used as delivery instruments on commodity exchanges including the Chicago Mercantile Exchange and the London International Financial Futures Exchange. The exchanges register warehouses where sellers may deliver commodities against expiring contracts;[1] the sellers effect delivery by endorsing transferable WRs issued by these warehouses in favor of their buyers.

Some countries have made much greater use than others of transferable WRs in support of

[1] This refers to the futures and options exchanges that are the norm in developed countries. These mainly serve hedging purposes, in that most contracts (shorts or longs) are normally offset by opposite contracts (longs or shorts), and only a small percentage of expiring contracts result in physical delivery. Nonetheless, the physical delivery arrangements made through exchange-registered warehouses provide a vital link between futures and physical markets.

agricultural trade and trade financing, notably the United States and South Africa.

The United States

A transferable WR system in the United States was started through private initiative with the opening up of Midwestern agriculture in the 19th century. The system served as a means of handling and financing grain stocks moving through large trading centers, particularly Chicago. As the system developed, it attracted regulatory attention, initially from individual state legislatures and finally from the federal government, which passed the U.S. Warehouse Act in 1916. Since then, most states have provided for the mandatory licensing of grain handlers with either federal or state authorities and strict compliance with their respective regulatory regimes.

The United States has thousands of rural grain elevators, cotton gins, and other agribusiness enterprises (many cooperatively owned) offering farmers storage and warehouse receipting alongside a range of other commercial services (purchase on spot, forward, and other terms; input and equipment supply, etc.).

South Africa

South Africa provides a more recent example of the development and use of transferable WRs; here, they are used for white and yellow maize, wheat, sunflower, soybean, and—most recently—sorghum.

With the liberalization of grain markets in the mid-1990s and the abolition of the Maize and Wheat Boards, cooperative silo operators and their farmer members had to find other ways of financing grain inventories. They began to issue transferable silo certificates; these were quickly accepted by the banks. Around the same time, SAFEX started trading futures contracts and registered over 100 silo sites as delivery locations.

Over 70 percent of silo capacity belongs to two massive cooperatives—OTK (now known as AFGRI) and Senwes—which have a combined storage capacity of 9 million tons, or nearly 75 percent of the country's total silo capacity.[2] This high concentration of silo ownership seems to have facilitated a coordinated and speedy response to the radical policy changes introduced with the end of the apartheid era and a subsequent shift in the silo certificate system toward electronic certificates. See appendix D for more information on the South African WR system, including requirements for approval of warehouses; see subsection 5.1 for a discussion of electronic silo certificates.

10.2 Practices in India

India is the world's third largest agricultural producer, with overall production of around 600 million tons, of which food grains account for up to 40 percent, and fruits and vegetables for a sixth. Warehousing capacity has failed to grow along with agricultural production. The lack of warehousing infrastructure (including cold storage), coupled with inefficient storage practices, is leading to large storage losses.

Early warehouse experiences

In the first half century after independence, federal and state governments unquestioningly treated third-party warehousing as a public sector role, and legislated accordingly. The Central Warehousing Corporation (CWC) and 17 state corporations were set up to provide warehousing services to the public, issuing transferable WRs for this purpose. Another parastatal enterprise, the Food Corporation of India, which dominates the supply of wheat and rice for public distribution, not only built its own warehousing infrastructure but is the main client of the public warehousing companies.

To this day, most warehousing capacity is still in the hands of the public sector. As of March 31, 2010, the CWC operated 10.6 million tons of capacity, including bonded facilities; the state warehousing corporations operated 20.9 million tons; and the Food Corporation of India

[2] These cooperatives are today stockholder-owned companies, although shares remain widely held among the farming population.

28.8 million tons. These state companies together operate 60 million tons of India's 91 million tons of agricultural warehousing capacity (excluding cold storage warehouses); they own 37 million tons of this capacity and rent the remainder.[3] Stock management at many of these government warehouses leaves much to be desired.

In the late 1990s, there was a significant change in government policy toward agricultural marketing, and the Indian government began to encourage the development of exchange trading and private sector warehousing. Stimulated in part by government subsidies, various private sector entities (including specialized warehousing companies, large apex cooperatives, traders, processors, farmer groups, etc.) have invested in warehouses known as *godowns*. Today, private sector players provide 20 million tons of warehousing for their own use and about 10 million tons of public warehousing.

Most of the former were constructed by primary agricultural cooperative societies for use by their members, under a rural *godown* scheme of the National Bank for Agriculture and Rural Development, which provided a 25–33 percent subsidy for construction, resulting in the building of thousands of small warehouses. Most of these have a capacity of less than 1,000 tons; some reach 2,500 tons. A large number remain unused or used for purposes other than warehousing, primarily because farmers do not have sufficient trust in cooperative management to leave their goods in the warehouses. Moreover, many of the warehouses for own use are inefficiently managed, leading to large quantity and quality losses.

A growing number of large, professionally managed warehousing/collateral management groups are becoming involved in warehousing, with the new entrants in this sector focusing on public warehousing services. There are about eight national warehousing groups, and a large number of regional players with anywhere from 5–15 warehouses under management.

[3] The data in this subsection are from personal communications with Lamon Rutten, formerly of the Multi-Commodity Exchange Ltd.; and S. Kaul (n.d.).

Increasing role of commodity exchanges

In 2002–03, three electronic futures exchanges emerged: the National Multi-Commodity Exchange Ltd. in Ahmedabad; the National Commodities and Derivatives Exchange Ltd. (NCDEX) in Mumbai; and the Multi-Commodity Exchange Ltd. (MCX), also in Mumbai. The CWC was one of the promoters of the National Multi-Commodity Exchange Ltd.; the other two exchanges soon became engaged in warehouse management to ensure a safe delivery process on their platforms. After a few years, the leading exchange, MCX, spun off its delivery department into a separate company, the National Bulk Handling Corporation (NBHC), which soon became India's leading private sector warehouse manager. NCDEX set up a similar entity, National Collateral Management Services Limited (NCMSL). While maintaining its role as the logistics agent for agricultural deliveries on the MCX platform, most of NBHC's business is as a collateral management agent for banks. In the late 2000s, three electronic spot exchanges also became active. The largest of these is the National Spot Exchange established by MCX; another is managed by NCDEX; and the third by Reliance, one of India's largest private sector conglomerates.

All of these exchanges and their associated warehouse management agencies have sought to develop a physical infrastructure for quality control through their own investments and through collaboration with quality assurance and grading agencies. A few independent warehouse/collateral managers have also emerged.

WRs are the delivery instrument of these exchanges, and large quantities of a wide range of agricultural commodities—from potatoes to wheat, and from cardamom to mentha oil—have changed hands using this instrument. On the spot exchanges, depositors are given the choice between immediately selling the WRs they receive or using them to obtain a loan; they tend to do the former, but that may change over time.

By the end of May 2012, NBHC managed over 2.6 million tons of commodities across 2,000

warehouses. In the past five years, it has handled some 18 million tons of agricultural commodities, against which banks have lent Rs 250 billion ($5 billion). NCMSL manages some 700 warehouses, with a total capacity of over 1.5 million tons.

Warehouse lending is now estimated at $3.0–$3.5 billion, with most stocks collaterally managed. SMAs are uncommon in India, except where international banks finance commodities in port warehouses awaiting export. Lending against WRs issued by government warehousing companies is a long-standing practice, but has become less popular over time. It is now mostly limited to financing by government agencies, which are only permitted to store in CWC and state warehousing corporation warehouses. Although a few state-owned banks have a lingering distrust of the private sector, several have seen significant losses when financing against WRs issued by the government agencies, and most state-owned banks now primarily finance under CMAs. NBHC has master agreements with close to 40 banks, including the largest state-owned banks; other warehouse managers also have many such master agreements.

Warehouse receipt finance

WR finance has grown rapidly in recent years, but it is still far from reaching its full potential, given that preharvest finance stands at over $60 billion. For WRs issued by CWC and state warehousing corporations, banks typically financed 50–55 percent of the value of the commodities, this has increased to 70–75 percent, and in still relatively rare cases, can reach 80–90 percent if the commodities are hedged (various banks propose special credit lines for hedged commodities). For commodities that do not meet exchange specifications, that do not have a liquid and transparent market, or that are considered highly perishable, the LTV ratios can be lower—a situation that might change if products could be better graded and it were easier to dispose of stocks in case of default.

Banks are convinced of the potential of WR systems, as evidenced by interest rates; loans against stocks managed by the large warehouse management agencies feature rates 1–2 percent below their usual lending rates. However, banks still have a number of concerns about WR financing:

- Banks fear that it will not be possible to recover loans in case of fraud or mismanagement, or in case of the insolvency of the depositor.
- Underlying commodities may deteriorate, in particular if they are allowed to exceed their shelf life;[4] or vanish altogether.
- Available legal remedies are time consuming and inadequate, although better than those in other forms of agricultural finance since warehouse loans are secured by pledges, which do not necessitate court proceedings in the case of default.
- There are impediments regarding the negotiability of WRs, creating considerable difficulties for farmers and other depositors.
- WRs are not uniformly reliable across the different warehousing companies, and taking the necessary risk mitigation steps (using collateral managers, audits, and inspections and insurance) adds 0.5–1.0 percent of the value of the commodities to the costs involved.[5] On the other hand, banks have found that by using collateral managers they have much reduced losses arising from asset impairment.
- The use of WRs entails some tax disincentives, notably the ad valorem sales taxes and stamp duties that some states have introduced on pledge and hypothecation, and limitations to the rights of buyers to claim back excise duties paid by an original depositor.
- Because the government has been slow in adopting a framework for e-WRs, these only

[4] This is not a risk when large warehouse managers are used: they typically revalidate quality certificates every three or six months, depending on the commodity; and banks are alerted to call up the loan when quality certificates are approaching expiration.

[5] Typical monthly charges per warehouse are in the $600–$1,000 range. To some extent, banks that are willing to work with less expensive collateral managers that offer less risk coverage compensate by making more frequent inspections and audits using their own staff.

play a role when goods are delivered onto one of the exchanges. Even where they are used, an awkward process is required to dematerialize the e-WRs once they are physically delivered into a registry, and then rematerialize them (i.e., print a new receipt) to effect delivery. When exchanges are not involved, only paper receipts are used, leaving banks exposed to all the usual risks of paper WRs (falsification, loss, theft, and duplication).

Improvements in the regulatory framework for WR finance have been under discussion since the late 1990s. In 2007, the Indian government passed a Warehousing (Development and Regulation) Act, which came into force in October 2010 with the constitution of a new agency, the Warehousing Development and Regulatory Authority.

The new act was intended to address legal and regulatory shortcomings in WR finance and to make WRs negotiable. However, important components are missing, and many of the enabling measures needed to make the act fully effective are still pending. Additionally, private sector operators have thus far shown little interest in using the new WR format supplied by the regulating agency. Most WRs issued in India are thus still not considered negotiable, even though they are transferable.

Experiences unique to India

There are a number of interesting aspects to India's WR finance experience:

- WR finance is beginning to be used in India to form the basis for further financial instruments, with at least one microfinance institution bundling WR loans into a vehicle for refinancing with other banks. This practice helps these other banks meet the official minimum primary sector lending criteria.
- India has gone further than most countries in using WR finance in small amounts. For example, over the past five years, NBHC has enabled more than 100,000 farmers to obtain amounts ranging from $500 to $20,000.
- It is estimated that about one-tenth of WR finance in India is for farmers. To some extent (hindered primarily by the bureaucracy entailed in subsidized loans), WR financing acts as a vehicle for the provision of subsidized postharvest credit to farmers.
- Cash and carry trade is prevalent in many Indian markets. In this practice, investors buy nearby futures and simultaneously sell more distant futures contracts. They then take delivery of WRs on the nearby contract, and deliver the same in due time against the further-away contract, in the process making a low-risk profit.
- India's national commodity exchanges have been at the heart of creating modern warehousing practices with strict quality standards. They have done so by creating what are in effect closed user groups, in which each exchange only works with its own network of warehouses and quality assurance and grading companies. For the healthy development of the commodities market, warehousing and grading facilities should be usable across exchanges.
- Internationally, most lending under CMAs is driven by banks, which appoint a warehouse operator/collateral manager to help them manage their credit risk by securing the collateral. In India, a significant portion of such lending is instead driven by the warehouse operator/collateral manager. Under master agreements signed with banks, the warehouse operator/collateral manager arranges for the financing of all stocks meeting predetermined quality parameters, if the depositor so desires. In these cases, the bank gives the collateral manager a list of all documents required. When the farmer or trader deposits his or her goods, the collateral manager issues certain documents (e.g., quality certificates) and obtains others from the depositor (e.g., signed statements that the goods are free from any prior lien). After checking, the collateral manager sends the documents to the bank, and the bank credits the farmer's account. In principle, this mechanism can be further improved by applying technology; borrowers seeking to avoid an electronic audit trail for tax reasons oppose such an improvement.

10.3 Practices in Vietnam

Vietnam has emerged as an agricultural powerhouse over the last two decades, and has become a major exporter. It produces about 26 million tons of milled rice annually, and is the second largest exporter of this commodity in the world with exports of 7.1 million tons in 2011. It is the world's second largest producer of coffee; the largest producer of cashew; and a major exporter of rubber, tea, vegetables, fruits, coconuts, sugar cane, soybeans, groundnuts, cassava, pepper, cloves, and fishery products.

Vietnam has a banking sector of considerable sophistication and diversity, which includes 5 large state-owned banks, 30 joint stock commercial banks, 5 wholly foreign-owned banks, and about 50 branches of international banks. However, there is great disparity in the financing arrangements available at the ports and up-country (i.e., in developed processing/exporting areas as opposed to rural/farming areas), and in the services available to international and local players.

Large international trade finance banks are very active in the ports, particularly for coffee and pepper, attracted by secure and efficient facilities. Stocks financed by these banks and international traders are typically stored in bonded warehouses in industrial zones owned and operated by specialized warehousing companies such as Paccorine, Steinweg, and Unicontrol, as well as by foreign-domestic logistic companies such as Molenbergnatie Gemadept JV. Stock movements in bonded warehouses are checked by a customs officer located on site. In general, the declaration of stock certificates issued by reputable warehouse companies provides sufficient reassurance to the trade finance banks and enables calculation of the borrowing base. Some international traders (e.g., Armajaro, Ecom, and Olam) have also constructed inland warehouses.

Local exporters collect coffee in the rural warehouses from farmers, cooperatives, and local traders before accumulating it in bonded warehouses for export. The financing of these warehouses is done mainly on an informal basis. Vietnamese banks and exporters tend to use the services of either of two types of domestic companies in managing the warehouses:

- Security companies guard the collateral in warehouses against commonly reported problems arising from remote locations, poor facilities, criminal activity, losses in transit, and lack of insurance.
- Asset management companies—sometimes owned by the banks—offer various forms of collateral management and stock monitoring services. They normally operate in the warehouses of the bank's clients and often couple their oversight or managerial activities with specialized quality control services.

Vietnam has no specific WR law. Although there is a national secured transaction registration system, this database does not always provide accurate information, as some financial institutions fail to register collateral consistently.

Banks seeking to provide warehouse finance in the country face risks in the following areas:

- The same commodity being pledged to several lenders at the same time, due in part to the poor functioning of the above-mentioned national database
- Difficulties in enforcing insurance policies
- Lack of clarity in procedures dealing with bankruptcy of warehouse operators
- High levels of commodity price volatility
- A lack of quality third-party warehouses, professional collateral management companies, disciplined and independent security companies, and supporting logistical services between warehouses along the supply chain.

Because of these risks, Vietnamese banks generally prefer to take primary collateral in the form of property. This is less true for coffee, where banks can take title to farmland, than for other crops. Foreign banks and traders, for their part, tend to demand the services of international port warehouse and logistics operators.

Notwithstanding this situation, the overall volume of warehouse financing in Vietnam is quite large. Although banks will often finance up to 70 percent of commodities' value, the borrowing costs for local companies are relatively high, at reportedly 16–20 percent annual interest rates; international traders reportedly finance their operations in the country at a 3–5 percent interest rate.

Smallholders at the upstream end of the supply chain lack any form of stock financing, reportedly due to the lack of a strong business focus among cooperatives, which tend to be predominantly social/political entities.

There appears to be a critical shortage of efficient financing arrangements in Vietnam—particularly away from the ports—and there is a pressing need to reduce lending risks. Much of the problem can be addressed through the professionalization of collateral management services and regulatory reform. It may be possible to go beyond this to establish a robust system of public warehousing. Some observers argue that such a system could shift bargaining power to producers and away from the downstream players that now dominate the supply chains. It is also argued that better access to financing will have a positive impact on the quality of Vietnamese products, particularly coffee, through better access to agricultural inputs.

10.4 Practices in Sub-Saharan Africa

There has been considerable effort to establish WR systems in Sub-Saharan Africa in recent years, and this initiative provides some rich insights that may be of relevance to other regions. Three broad approaches have been utilized in Sub-Saharan Africa:

- Collateral management and stock monitoring
- Public warehousing initiatives along U.S. and South African lines
- Village-based and microfinance-linked inventory credit schemes

Collateral management and stock monitoring

Port warehousing companies and freight forwarders have long offered warehousing and collateral management services. Since the 1970s, inspection companies have become leading players in this regard, taking advantage of the liberalization of African commodity trade and the increasing involvement of international banks looking for specialized service suppliers in this field.

In Africa in the 1980s and 1990s, the liberalization of agricultural markets and the entry of international banks greatly boosted the role of international inspection companies, and the banks often required their borrowers to enter into CMAs. Since then, collateral managers have played an important role in ensuring the flow of trade credit in African countries—particularly to those local companies that, unlike their multinational competitors, cannot access low-interest credit offshore.

There are a number of international collateral management service providers, including ACE (Audit, Control and Expertise), Société Générale de Surveillance, Socotec, SDV, and Drum Commodities. There are also a small number of local companies that offer services similar to those of the international players, such as Baltonic (Tanzania), Transsenne (Senegal), and Ecosafe Ghana Ltd. Apart from managing collateral, these companies arrange insurance coverage for fire and allied perils, theft, errors and omissions, and fidelity (the latter two are sometimes lumped together as professional indemnity). In practice, fidelity is by far the most costly of these and must cover risks of fraud by staff and directors. Insurance coverage is vital to these operators, which do not normally have the net worth to allow them to cover large claims from their own balance sheet.

Access to collateral management services is fairly restricted, due to high fixed monthly charges (see subsection 3.2) and services that are largely concentrated in or near the main ports focused on imported and exported commodities. In landlocked parts of Africa, there are few service

providers and the quality of service tends to be relatively poor. Notwithstanding, many agribusiness enterprises, such as cotton ginners and larger milling concerns, pay these high charges, as CMAs are the only mechanisms that enable them to leverage their stocks to access timely commodity credit.

The collateral management business has experienced numerous serious frauds; banks have additionally experienced difficulties and long delays in obtaining recourse. Where it occurs, fraud has typically involved collusion between the staff of the collateral manager/warehouse operator and the depositor—and in some cases the bank.[6] Some inspection companies have backed out of the collateral management business due to the high risks and the often prohibitive cost of obtaining insurance coverage.[7] Others have made the terms of their collateral management offerings more stringent and costly. Some of the leading international inspection companies operating in West Africa now insist on doing business from their European headquarters rather than relying on local subsidiaries. Others have decided to restrict their services to stock monitoring (SMAs) without guaranteeing the integrity of the commodity.

Several underlying problems affect the performance of this industry. Demand for services is erratic and price competition is intense, meaning that collateral managers cannot maintain a large permanent payroll and sometimes find themselves having to hire and train staff hurriedly to meet upcoming contracts. Law enforcement is often lax, leading to considerable impunity for those responsible for fraud. Where losses do occur, the liability of the collateral managers is limited by clauses in the storage contracts, as noted in subsection 3.1. According to one expert, one of the industry's most serious weaknesses lies in the wording of contracts; various terms lead to confusion regarding the entitlements of the players involved. When collateral managers do make claims against their insurance, premiums can be increased to unaffordable levels and drive them out of business.

In this regard, it is worth noting that certain less-intensive forms of monitoring collateral can enable banks to engage in lending against stock in trade. Banks have historically carried out direct surveillance of warehouses, often without the involvement of independent inspectors, and some banks still perform this type of activity when appropriate. Additionally, banks often contract with inspectors to carry out surveillance under SMAs; this is typically only in connection with those clients with whom they already have a robust relationship and a long credit history. Confidence in these particular clients allows the bank to lend against stored commodities in limited cases without the additional security provided by CMAs.

Taking the region as a whole, direct surveillance, SMAs, and CMAs account for most trade financing where stock serves as collateral. Notwithstanding the above-mentioned limitations and problems in CMAs, collateral management companies provide a much-needed service and are the de facto main providers of services enabling warehouse finance in Sub-Saharan Africa, especially north of the Limpopo River.

Public warehousing initiatives along U.S. and South African lines

Since the 1990s, there have been various aid-supported attempts to introduce the public warehousing model in Sub-Saharan Africa; many of these efforts are listed in table 10.1.[8] Box 6.1 presents the steps that may be undertaken in establishing such a system in a given country.

The most significant efforts were made in Eastern and Southern Africa. The leading commodities

[6] Experience with collateral management has varied greatly from one country to another, with some countries not experiencing any such problems.

[7] According to an industry source consulted in 2009, only two or three companies were prepared to provide reinsurance coverage for collateral managers, due to the impact of large insurance claims around the world.

[8] The list is not exhaustive, and does not include cooperative and microfinance-linked schemes, which are briefly discussed at the end of this subsection.

targeted in these schemes were maize, cocoa, coffee, cotton, paddy rice, and sesame. In the case of maize, the main food crop, progress has been slow and difficult. Progress appears to have been more rapid with export crops in Tanzania (coffee and cashew) and Ethiopia (coffee, sesame, and pea beans), but the cocoa initiatives in Cameroon, Côte d'Ivoire, and Nigeria seem to have had limited lasting results.

The key difficulty with the maize schemes is the unsupportive policy framework in several of the countries listed, notably in Eastern and Southern Africa where maize is the leading food staple. Food prices are a politically sensitive topic, and this causes governments to intervene in a rather unpredictable manner at the borders, by buffer stock and food reserve operations, and through the distribution of emergency relief. In some cases, governments brazenly manipulate food prices for short-term political advantage. All of this creates a climate of uncertainty, where private sector players are nervous about holding stocks for many months, and bankers are reluctant to lend against

Table 10.1 Main aid-supported public warehousing initiatives in Sub-Saharan Africa

	Main sponsoring institutions	Years	WR system legislation	Regulatory institution	WR documentation	Main crops to date	Results: success/failure/issues
Cameroon, Côte d'Ivoire, Nigeria	CFC, International Cocoa Organization, national cocoa authorities	2000–05	Some legal texts drafted or published	National cocoa authorities	CMAs; paper receipt	Cocoa	Project completion report suggests limited lasting impact, due to bankers' fear of fraud, weak design, and poor management. Considerable collateral management for local exporters in Côte d'Ivoire, but dominant multinationals had limited need for it. One cooperative exported 15,000–20,000 tons/year, but sustainability questionable.
Ethiopia	Government of Ethiopia, IFPRI, IFAD, World Bank, IFC, CIDA, EU, UNDP, USAID, CFC	2005–12	Proclamation of 2002	ECX	e-WR	Coffee, sesame, pea beans (mandatorily traded through ECX)	More than half the stock traded on the ECX floor held in exchange-managed warehouses and electronically documented.
Ghana	DFID	1993–97	No act	No regulatory institution	Paper receipt	Maize	Deposits grew to 5,500 tons by 2005/06; subsequently ended due to unsupportive policies.
Kenya	EAGC, USAID, FSDT	2005–11	No act, but a task force is drafting legislation	Initially EAGC was certifying warehouses; regulator under the proposed act to be determined	Paper receipt	Maize	First warehouse certified in 2008, and one bank was actively involved in lending. Little progress since then due to low supply and unsupportive policies.
Malawi	ACE, GTPA, CFC, EU, AGRA, USAID	2011	No act	GTPA handling certification and audits	e-WR	Maize	First warehouse registered, with deposits, financing, and trading started through ACE. Periodic export bans inhibit trade.

(continued)

Table 10.1 Main aid-supported public warehousing initiatives in Sub-Saharan Africa (continued)

	Main sponsoring institutions	Years	WR system legislation	Regulatory institution	WR documentation	Main crops to date	Results: success/failure/issues
Mali	PRMC trader financing scheme	1987–93	No act	Ministry of Trade	Paper receipt	Millet, sorghum	Scheme peaked in 1988/89, with financing of 12% of marketed surplus; it then slumped and was subsequently abandoned. Problems: prices did not rise as anticipated, poor repayment, weak management and control of stores (Coulter and Shepherd 1995).
Tanzania	Ministry of Trade, CFC Presidency, IFAD, AfDB, SDC	1998–2011 (2 projects) 2005–09	Act of 2005	Ministry of Trade Warehouse Receipt Licensing Board	Paper receipt, with registry	Coffee, cashew, paddy rice, sesame, sunflower, cotton	Major and sustained uptake with coffee (~15,000 ton/year), cashew (60,000–70,000 tons/year), and sesame (9,450 tons in 2010/11). Issue of government intervention in grain markets, particularly at borders. Reasonable uptake in paddy rice, limited uptake with cotton in northern Tanzania.
Uganda	Ministry of Trade, EU, CFC, WFP	2002–10	Act of 2006	Uganda Commodity Exchange, under delegation from Ministry of Trade	e-WR (linked to South Africa e-system)	Maize, cotton	Significant progress, but on a small scale. Four grain warehouses operating by end 2010, total deposits of 8,133 tons of maize for the year. Seed cotton pilot in west Uganda with ~100 tons/year.
Zambia	CFC, ZACA, USAID, IFAD	2001–07	Legislation drafted but not implemented	ZACA, under contractual arrangement with certified warehouse operators	Paper receipt	Maize	Initial success, with deposits reaching 66,000 tons in 2004 and large-scale bank financing; subsequent collapse due to unsupportive policy and legal framework, and governance/management failure at ZACA.
	USAID, WFP, ZAMACE	2007–11	Amendment to Agricultural Credit Act of 2011	None appointed so far	Paper receipt	Maize	Unable to gain traction, due to heavy government intervention in the maize market.

Note: ACE = Agricultural Commodity Exchange; AfDB = African Development Bank; AGRA = Alliance for a Green Revolution in Africa; CFC = Common Fund for Commodities; CIDA = Canadian International Development Agency; DFID = Department for International Development; EAGC = Eastern African Grain Council; EU = European Union; FSDT = Financial Sector Deepening Trust; GTPA = Grain Traders and Processors Association of Malawi; IFAD = International Fund for Agricultural Development; IFPRI = International Food Policy Research Institute; PRMC = Programme de Restructuration du Marché Céréalier (Cereals Market Restructuring Program); SDC = Swiss Agency for Development and Cooperation International; UNDP = United Nations Development Programme; USAID = U.S. Agency for International Development; WFP = World Food Programme; ZACA = Zambia Agricultural Commodities Agency Ltd.; ZAMACE = Zambia Agricultural Commodity Exchange.

inventories. A similar problem stymied an effort to introduce grain WR finance in Ghana.

Many governments tend to distrust private grain markets and are much less inclined to adopt the facilitative approach characterized by the South African government. At the same time, the grain subsector in the other Sub-Saharan countries is much more fragmented and informal than in South Africa, at all levels from farming downstream, which makes it difficult for stakeholders to articulate and lobby for coherent strategies. These factors at the government and private stakeholder levels result in weak subsector coordination.

Four of the countries listed in table 10.1 have enacted legislation to facilitate the operation of a WR system, with the primary objectives of ensuring the negotiability of WRs (see subsection 4.4) and establishing a regulatory framework to ensure good practice and minimize the incidence of fraud. As of 2012, two East African countries (Tanzania and Uganda) had appointed official regulatory bodies. While these have been active in registering and licensing warehouses and training stakeholders, it is not yet clear that they have sufficient resources to carry out their functions over the medium to long term.[9] There is also a question as to whether these institutions will enjoy sufficient autonomy vis-à-vis their respective political establishments to make tough decisions on licensing of warehouses and enforcing compliance with regulatory norms. In Zambia, a nongovernmental certification body (Zambia Agricultural Commodities Agency Ltd.) was established in 2000; it eventually failed for a variety of reasons, notably an unsupportive government policy and legal framework, and poor governance and management. This is regrettable, as deposits had reached 66,000 tons in 2004/05, and its service revenue had put it well on its way toward breaking even. Box 10.1 presents some thoughts on moving public warehousing forward in this region.

More effective subsector coordination may explain the relative success with cash crops in Tanzania and Ethiopia. The Tanzanian coffee sector has benefited from various marketing-oriented institutions in operation since before coffee markets were liberalized. These institutions include the Tanzanian Coffee Board; various coffee cooperatives and cooperatively owned coffee-curing companies; a cooperative bank; a former government-owned bank with a large outstanding loan portfolio from its earlier loans to coffee cooperatives; and the Moshi Coffee Auction through which all coffee (excluding specialty coffees subject to a special exemption) must be transacted. These various entities enjoy a certain level of credibility, and their shared vision seems to have facilitated the establishment of the WR system for coffee. There are five licensed coffee warehouses: three cooperatively owned coffee-curing companies and two private sector competitors. In addition, farmer business groups producing specialty coffees have made considerable use of the WR system to finance their operations.

In the case of the Tanzanian cashew industry, the government has mandated a hybrid marketing structure involving an authorized single-channel primary marketing system combined with competitive selling to exporters and local processors. All primary marketing must be carried out by cooperatives (with smaller producer organizations supplying via unions) and they must sell the cashew by auction at government-licensed warehouses. Views differ as to the effectiveness of this system.[10]

[9] As noted above, however, the Tanzanian coffee system seems to be fairly secure, given that sales receipts are controlled at two levels—by the licensed warehouse's collateral management function and by the mandatory auction through which most coffee must pass before export.

[10] A World Bank report by Baregu and Hoogeveen (2009) found that cashew farmers face unfavorable pricing terms under the current WR system. Others argue that it is only because of the WR system that cashew production, which was being abandoned by Tanzanian farmers, was revived. Regardless, the government's setting a reserve price in excess of export parity in 2010/11 resulted in a serious hiatus for the industry, and international traders were no longer willing to buy product.

Box 10.1 Growing public warehousing in Sub-Saharan Africa

Donors and governments have provided vital public support in developing public warehousing systems, but with varying degrees of effectiveness. In some cases, donors and international financial institutions are very committed to working through governments, although this can restrict their ability to relate directly to private sector players. In other cases, donors and governments have lacked a clear, long-term strategy—e.g., with a heavy short-term focus on poverty alleviation and involving small farmers, at the expense of building volume and longer-term sustainability.

The key to sustainability is persuading private agribusinesses to adopt public warehousing as an attractive and profitable business model, something they can carry out alongside conventional trading and input supply operations. Programs thus need to maximize warehouse throughput, which means attracting all types of depositors, including traders, individual farmers, and groups of small farmers—not just the latter. The business of establishing a warehouse, learning to operate it, and achieving and maintaining regulatory compliance involves significant fixed costs which can only be covered at substantial levels of operation. Experience to date suggests that grain warehouses handling less than 1,000 tons per year are likely to prove nonviable or marginal.

The development of public warehousing systems in Sub-Saharan Africa is a work in progress, with some successes (particularly with export crops) but very limited impact so far with food crops. More effective subsector coordination is key to future progress, and this depends on the ability of the various stakeholders (government, private sector, and donors) to work together effectively.

It is possible that some changing practices on the part of certain stakeholders can reinforce coordination processes, notably South African agribusiness and the World Food Programme.

- Leading South African silo operators face a saturated domestic market and are actively investing in countries north of the Limpopo River. South African food and feed manufacturers, as well as banks, are accompanying this northward movement of agribusiness. South African silo operators work closely with (commercial) farmers in a high-volume/low-margin system, and are highly experienced in the provision of WR services. One of these companies, AFGRI, provided such services in Zambia and would still be doing so were the public policy framework in that country more favorable.
- The World Food Programme has become a leading player in the domestic markets of several African countries, procuring up to a million tons of cereals, pulses, and other food items per year. It carries out most of its procurement through tenders involving prequalified buyers, but under its Purchase for Progress (P4P) program (2009–14), it has been experimenting with other approaches, including direct purchase from farmer groups on cash and forward terms, purchasing goods held on WRs, and purchase through commodity exchanges. This trend may be tempered by the fact that the agency's procurement staff remains generally more comfortable with the traditional tender system. It thus cannot be assumed that P4P will lead to a major change in the way the World Food Programme carries out the bulk of its procurement.

The Ethiopian WR system is an interesting case that does not conform with the above generalizations (see appendix E for more information). The primary driver in the country is ECX, through which the government of Ethiopia has mandated the sale of certain export commodities (coffee, sesame, and pea beans), which must be deposited in exchange warehouses prior to sale. The volume of commodities traded on the exchange rose to 509,000 tons in 2010/11, creating a large public warehousing system virtually overnight.

WR financing is just beginning to develop, and banks express considerable confidence in the system. Nevertheless, stakeholders have raised some important questions about the ECX model, such as whether it enhances market efficiency, whether it is helping Ethiopia take advantage of rapidly growing markets for quality coffee and niche products, and whether it increases the likelihood that Ethiopian exporters will default on international contracts. Some of these concerns may prove unfounded, but they merit thorough research by those supporting ECX and those considering promoting the model elsewhere.

Village-based and microfinance-linked inventory credit schemes

Various village-level and microfinance inventory credit schemes have been organized in Africa by numerous supporting organizations, including in Ghana by TechnoServe, in Madagascar by CECAM (Caisses d'Epargne et de Crédit Agricole Mutuels, an agricultural savings and credit union), in Niger by the Food and Agriculture Organization of the United Nations (FAO), and in Tanzania by the Agricultural Marketing Systems Development Program and the USAWA network and by Rural Urban Development Initiatives (RUDI).[11]

As these programs are exclusively targeted at smallholder farmers, they do not fall into the category of public warehousing.[12] In these programs—with the exceptions of the now-terminated TechnoServe scheme and RUDI—commodities are mainly stored in the name of each smallholder depositor (identity-preserved storage) in village warehouses or secure domestic buildings. National grading standards are not applied, and WRs are not transferable. Microfinance institutions often provide the finance, with banks playing a refinancing role rather than financing farmers directly. Community pressures have often guaranteed high repayment rates with these schemes.

In Madagascar, the initiative helped small farmers store paddy rice and provided the cornerstone for the development of nine CECAM mutual microfinance networks. Inventory credit represented around 40 percent of the total loan portfolio, and with a reported repayment level of about 99 percent, inventory loans offset lower recovery with riskier agricultural production loans. Initially it was intended that stocks would be held in village warehouses run by producer organizations, but there was considerable mismanagement and the approach failed. Where CECAM appears to have achieved success is by financing paddy rice held in domestic buildings specially fitted to hold the stocks of the owner and a few neighbors, often family members. It is estimated that as of 2008, all the Malagasy networks (including CECAM's) were storing approximately 55,000 tons of paddy rice in about 10,000 such stores. This storage volume represented only about 1.4 percent of Madagascar's production, but was nonetheless very important to the livelihood of large numbers of semi-subsistence farmers.

The case exemplifies how commodity-collateralized financing can help such farmers and open rural markets to other financial products. On the other hand, an evaluation of the recent PARECAM (Programme to Support Resilience

[11] For more information on the Malagasy and Tanzanian initiatives, see Coulter (2009); Coulter and Mahamadou (2010) describes the scheme in Niger.

[12] Note that cereal banks are not considered here. These village-based institutions were heavily promoted in Sahelian countries from the 1970s onward as a means of enhancing food security and disposing of marketable grain surpluses. Because these were mainly funded by grants rather than by loans against stock, they do not fall within the purview of this guide.

to Food Crises in Madagascar) project indicates that there has been a renewed focus on collective storage with unpromising results.[13] The Malagasy experience has had some positive outcomes, but also points to the potential danger of outside agencies pushing collective approaches without sufficient consideration of their sustainability.

There are also interesting successes of storage and credit access in traditional wholesale markets. Wholesale market traders often provide storage to fellow traders, farmers, and others, using systems that depend largely on the reputation of the parties and the trust between them. Nowhere is this more apparent than in the massive Dawanau market of Kano, northern Nigeria. Here, warehouses are operated by individuals and market associations that also provide facilities for depositors to borrow from the operator or from banks.

10.5 Practices in Eastern Europe and the former Soviet Union

Since the end of the 1980s, a variety of approaches have been used in Eastern Europe and the former Soviet Union to collateralize stock for lending purposes. These include bank surveillance using Soviet-era documentation, employment of collateral managers, field warehousing, and regulated systems.

There has been considerable outside support for the development of WR systems in the region by the European Bank for Reconstruction and Development, the U.S. Agency for International Development, the Common Fund for Commodities, and others—much of it to establish licensing regimes along North American lines. An FAO report (Höllinger, Rutten, and Kiriakov 2009) shows that 12 countries have sought to develop WR systems, although such a system is most fully developed in only 3: Bulgaria, Hungary, and Kazakhstan. These three countries have special WR laws for grains rather than broad legislation encompassing various commodities and different commercial practices.

The Hungarian system consists of three very large and well-capitalized warehousing companies carrying out extensive field warehousing. Bulgaria and Kazakhstan are closer to U.S. practice; both have established well-structured and efficient government regulatory agencies and indemnity funds. The Bulgarian system is very well developed with 47 licensed public warehouses and over 500,000 tons of licensed capacity. Its experience highlights the importance of winning over the banks. Once banks had developed expertise in WR lending and established efficient internal procedures, the mechanism became quite simple with comparatively low administrative costs. Further, lending (interest) rates fell from 16 percent at the beginning of the program when only two banks were lending to 7–8 percent in 2008 when 10 banks were operating in competition.

Partial or failed implementation of these initiatives in the region has been attributed to a lack of initial consensus among government institutions, donors, and the private sector about key priorities and program components. In some countries, including Poland and Slovakia, government intervention was maintained at a high level, resulting in farmers not being interested in storage using WRs. In Ukraine, there have been inconsistencies in legislation and weaknesses in the licensing process, leading to a lack of trust.

In contrast to the South African case (appendix D), there has been very limited trading of WRs on secondary markets, which has been partially attributed to the immature nature of commodity exchanges and taxation regimes that discourage transfer between successive holders.

The FAO report describes the typical donor approach as being "very top-heavy," focusing on changes at the central level rather than working with local banks in a bottom-up fashion to develop pragmatic WR system schemes. The authors conclude that "Although it is essential to introduce all the core components of a WRS [WR system] to ensure its proper functioning, care should be

[13] A comprehensive evaluation of the PARECAM project can be found in Ramanampamonjy, Berarazana, and Clement (2011).

taken to avoid blueprints and allow for sufficient time for adjustments and consensus building" (Höllinger, Rutten, and Kiriakov 2009, 47).

10.6 Practices in times of political change and financial instability

In certain unstable and transitioning situations, the proceeds from commodity exports were the sole assets that could be monetized by international financial institutions for lending purposes to meet urgent hard currency needs. This was the case in both the Russian Federation and among former Soviet Union states during the 1990s, and in Argentina in 2001 when undergoing a national liquidity crisis.

In the former Soviet Union, the judicial system and commercial laws were obsolete and unpredictable (in general, not only in the area of WRs), especially with regard to secured transactions and bankruptcy. A number of innovative techniques were developed to address the urgent need of exporters for hard currency funding and the correlative need on the part of banks to ensure that the commodities would be used to repay their loans when sold. Many of these facilities were structured using collateral management services coupled with title-based structures. Three examples of successful initiatives in times and places of stressful economic situations follow.

Purchase and tolling transactions

While the law of secured transactions and WRs may have been weak in the former Soviet Union, the law of sales could be used to acquire raw materials and semifinished products that could then be controlled by collateral managers. The structure involved a bank (principally and initially Dutch banks) establishing a special-purpose company (SPC), owned by the bank, that would be the nominal borrower. The SPC would then purchase the commodities in some controlled location, release them as necessary for processing, rewarehouse them pending export, authorize release for shipment to port, and present the shipping documents to offshore purchasers that had undertaken to pay the bank directly upon presentation of documents. Field warehousing initially played an important role in such transactions, given that the raw materials and finished products needed to be located close to the manufacturing operation and no independent warehouse facilities were available. The tolling fees the SPC paid the manufacturer represented the eventual sales proceeds less financing fees and costs.

Purchase and repurchase transactions

A purchase-repo variation of the tolling transaction was pursued whereby export licenses could only be granted to local companies in certain former Soviet Union states. In this case, the commodities were initially purchased by the SPC but repurchased by the customer at the export port for purposes of export clearance. The commodities were held in the name of the SPC and controlled as before; however, the freight forwarder appointed to arrange export logistics was instructed to deliver the shipping documents directly to the bank, which would present them to the buyer's bank for payment under the letter of credit. Title to the goods therefore remained with the manufacturer only during the brief period when the forwarder held the shipping documents acting as the joint agent of the bank and the manufacturer. WRs were used whenever possible in port warehouses; however, prior to arrival in port, there was heavy reliance on collateral management services.

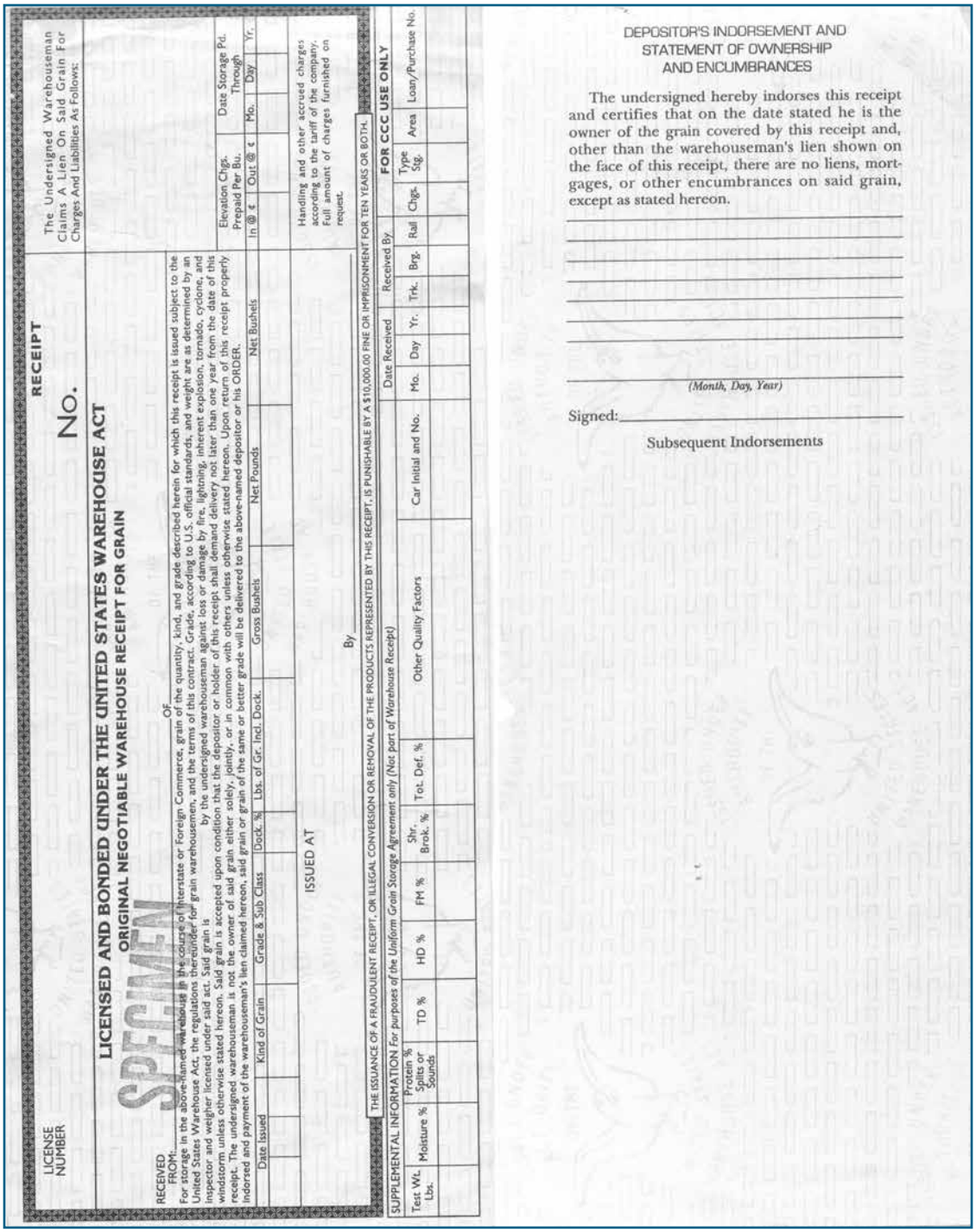
Collateral ring-fence transactions

A key concern in Argentina was to protect commodities from claims by local banks and suppliers that had the legal power to place the exporter into receivership at any time. Also, restrictions on exports by foreign enterprises reduced the flexibility for bank-owned companies to engage in purchase and tolling operations. Accordingly, the approach adopted used a local subsidiary established by the exporter to be the borrower and owner of the raw materials and of the processed goods prior to export. The shares of the subsidiary were pledged to the bank as additional security,

and the subsidiary was unable to borrow or guarantee any loans apart from the loan from the offshore bank. The commodities were controlled under tight CMAs, and WRs (recognized as negotiable documents under Argentine law) were transferred to the offshore bank as soon as the raw materials were purchased and delivered to local warehouses. Once the raw materials were in the plant, field WRs were issued to the bank, which was typically financing 100 percent of the exporter's throughput. In general, there were no difficulties with export formalities or currency licenses because these facilities were the only source of hard currency funding available.

Appendixes

Appendix A Negotiable Warehouse Receipt with Paper Documentation: United States



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No.

LICENSE NUMBER

The Undersigned Warehouseman Claims A Lien On Said Grain For Charges And Liabilities As Follows:

LICENSED AND BONDED UNDER THE UNITED STATES WAREHOUSE ACT

ORIGINAL NEGOTIABLE WAREHOUSE RECEIPT FOR GRAIN

SPECIMEN

RECEIVED FROM: OF

For storage in the above-named warehouse in the course of Interstate or Foreign Commerce, grain of the quantity, kind, and grade described herein for which this receipt is issued subject to the United States Warehouse Act, the regulations thereunder for grain warehousemen, and the terms of this contract. Grade, according to U.S. official standards, and weight are as determined by an inspector and weigher licensed under said act. Said grain is by the undersigned warehouseman against loss or damage by fire, lightning, inherent explosion, tornado, cyclone, and windstorm unless otherwise stated hereon. Said grain is accepted upon condition that the depositor or holder of this receipt shall demand delivery not later than one year from the date of this receipt. The undersigned warehouseman is not the owner of said grain either solely, jointly, or in common with others unless otherwise stated hereon. Upon return of this receipt properly indorsed and payment of the warehouseman's lien claimed hereon, said grain or grain of the same or better grade will be delivered to the above-named depositor or his ORDER.

Date Issued	Kind of Grain	Grade & Sub Class	Dock. %	Lbs. of Gr. Incl. Dock.	Gross Bushels	Net Pounds	Net Bushels

ISSUED AT

By

Elevation Chgs. Prepaid Per Bu. In @ ¢ | Out @ ¢

Date Storage Pd. Through Mo. | Day | Yr.

Handling and other accrued charges according to the tariff of the company. Full amount of charges furnished on request.

THE ISSUANCE OF A FRAUDULENT RECEIPT, OR ILLEGAL CONVERSION OR REMOVAL OF THE PRODUCTS REPRESENTED BY THIS RECEIPT, IS PUNISHABLE BY A $10,000.00 FINE OR IMPRISONMENT FOR TEN YEARS OR BOTH.

SUPPLEMENTAL INFORMATION *For purposes of the Uniform Grain Storage Agreement only (Not part of Warehouse Receipt)*

Test Wt. Lbs.	Moisture %	Protein % Splits or Sounds	TD %	HD %	FM %	Shr. Brok. %	Tot. Def. %	Other Quality Factors

Car Initial and No.

Date Received Mo. | Day | Yr.

Received By: Trk. | Brg. | Rail

FOR CCC USE ONLY

Chgs. | Type Stg. | Area | Loan/Purchase No.

DEPOSITOR'S INDORSEMENT AND STATEMENT OF OWNERSHIP AND ENCUMBRANCES

The undersigned hereby indorses this receipt and certifies that on the date stated he is the owner of the grain covered by this receipt and, other than the warehouseman's lien shown on the face of this receipt, there are no liens, mortgages, or other encumbrances on said grain, except as stated hereon.

(Month, Day, Year)

Signed:

Subsequent Indorsements

Appendix B Release Order/Warrant: Tanzania

NAME AND FULL CONTACT ADDRESS OF FINANCIER.

RELEASE WARRANT

TO: NAME AND FULL CONTACT ADDRESS OF WAREHOUSE OPERATORS

RELEASE WARRANT FOR …….
(Please enter specific commodity to be released)

This Warrant no ……date this……..day of ……...

For Account of (Name of Depositor):

Or assigned by endorsement hereon:

PARTICULARS[1]

GRADE	QUANTITY	REMARKS

The undersign (hereinafter referred to as "Financier") authorize the above mentioned goods to be released from your warehouse since the bank have already recovered the loan associated with it.

Prepared by:

Name……...Signature……Date…….

Authorized by:

Name……...Signature……Date…….

[1] Please attach inner documents

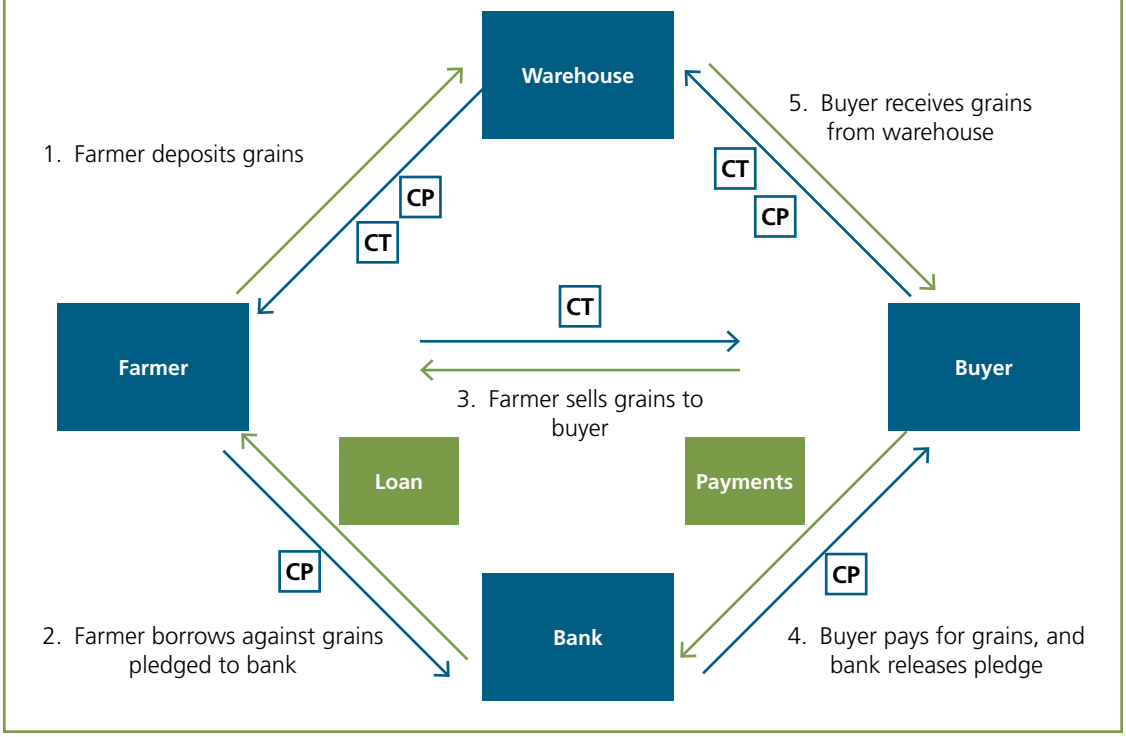
Appendix C Double and Single Warehouse Receipt Systems

As detailed in subsection 4.5, certain civil law countries use double WRs, while most common law countries use single WRs. This appendix describes the processes associated with the two systems and points up the differences between the two types of receipts.

Double receipt system

In a double receipt system (figure C.1), the warehouse operator issues a two-part receipt: a certificate of pledge and a certificate of title. If the owner wants to use the stored commodity as collateral for a loan, the certificate of pledge needs to be handed over to the bank and the certificate of title stays with the owner of the commodity. Once the certificate of pledge has been issued, the bank usually advances funds as a specified percentage of the value of the commodity. The bank does not give the borrower the full value of the goods in the warehouse so as to offset the costs that could be incurred in selling the commodity in case of a loan default, as well as against any potential decrease in value of the stored good caused by price volatility in the respective commodity market. The warehouse operator is obliged to transfer goods only after having received the original title certificate and the original certificate of pledge or the bank's release warrant to deliver the goods to a named buyer.

Figure C.1 Double warehouse receipt system: typical cycle of transactions



Source: Giovannucci, Varangis, and Larson 2004.

Note: = money flow; = document flow; CP = certificate of pledge; CT = certificate of title.

1. After harvest, the farmer (or farmer group, trader, or processor) deposits grains (or any other eligible commodity) at a licensed warehouse. The warehouse operator assesses the quality of the commodity and grades it prior to issuing the two-part receipt.
2. The farmer submits the certificate of pledge to the bank in exchange for a loan based on the value of the underlying commodity. The certificate is annotated to indicate that the commodity is pledged to the bank.
3. If the farmer decides to sell the commodity to a trader or processor, he or she signs a sales contract and transfers the certificate of title to the buyer.
4. The buyer pays back the loan to the bank, plus any accrued interest, in exchange for the bank's release of its certificate of pledge that was deposited with the bank when the loan was issued.
5. The buyer submits the certificate of pledge and the certificate of title to the warehouse; the warehouse releases the corresponding commodity.

Single receipt system

In a single receipt system, the warehouse operator issues one receipt representing the commodity. The receipt is a title document (except if issued under British law, in which case it would merely be a certificate confirming that the goods have been delivered into the warehouse).

If the owner wants to use the commodity as collateral for a loan, the WR needs to be handed over to the bank as security. The owner can sell the commodities that are stored in the warehouse either to a trader or primary processor, validating the sale by transferring the WR to the buyer. The buyer then pays back the loan plus interest directly to the lender, settles any outstanding storage and handling charges with the warehouse operator, and pays the balance to the seller. In practice, the latter payments will normally be cleared through the bank. When single WRs are used, the warehouse operator is obliged to deliver goods to a named buyer only after having received the original WR and a release order (or, in some countries, a bank's release warrant) from the original depositor or the depositor's bank.[1]

[1] Note that the warehouse operator generally has first claim on the goods with respect to payment of storage and other charges; if the depositor does not pay these charges (on the goods concerned, or other goods stored by this depositor), the warehouse operator has the right to refuse delivery.

Appendix D Warehouse Receipt System Integrated with a Commodity Exchange: South Africa

South Africa's grain production (around 12 million tons annually) is dominated by about 30,000 commercial farmers.[1] Until the early 1990s, these farmers received state support within the framework of a state-controlled marketing system. The African National Congress government liberalized trade in grains and abolished the existing commodity boards, but encouraged the private sector to develop an alternative institutional structure to support trade. This structure had to address a variety of needs, including the provision of market information, systems for resolving trade disputes, systems for financing trade, mechanisms for market pricing of grains, and management of price risks.

These needs were addressed through various institutional devices, including the upgrading of the South African Grain Information Service; the use of silo certificates (i.e., WRs); and the establishment of futures and options contracts for white and yellow maize, wheat, soybean, and sunflower on the SAFEX—which later became part of the Johannesburg Stock Exchange (JSE). Cooperative storage complexes began issuing farmers transferable silo certificates, indicating location, quantity, and grade for producers that deposited grain with them. The farmers could trade these or use them to raise bank financing.

Today, silo operators either issue silo certificates in their own name, or issue the more widely used SAFEX certificates. Producers may appoint brokers to sell their grains or sell independently on the open market. The benchmark price is usually the SAFEX price for the nearest month. Where producers wish to defer sales, they can obtain financing against the silo certificates. In such cases, the borrower must usually hedge against any downside price risks using futures and options contracts traded on the exchange. The availability of price risk management instruments backed by silo certificates has allowed banks to structure attractive financing, requiring borrowers to deposit their produce with certified silos. A borrower's deposit track record is used in determining the output against which financing is provided. Buyers of silo certificates include processors, which may take delivery of the underlying commodity on presentation to the silo operator, and investors. The investors participate in the market primarily to make gains from anticipated price movements, but play a crucial role in making the market liquid and enabling risk sharing.

Because South Africa has no act governing WRs (the act of 1930, which had done so, was rescinded during the apartheid era), silo certificates are handled under contractual law. The JSE provides regulatory oversight for most of the certificated grain tonnage in South Africa through its procedures for approving silo owners and silos. The JSE has approved nearly 200 silo sites belonging to 17 owners; in 2011, 4.26 million tons of white and yellow maize, wheat, sunflower, soybeans, and sorghum were delivered to these locations.

In the wake of some instances of default and fraud linked to unsuccessful price speculation by certain warehouse operators and traders, the JSE has tightened its regulatory provisions in recent years. The following highlights the principal requirements a silo owner must now satisfy.[2]

→ **Registration.** The owner must be registered as a legal entity in South Africa.

[1] The information in this appendix is drawn from Coulter (2009).

[2] For the JSE's full requirements, see http://www.jse.co.za/Libraries/SAFEX_AP_-_Products-_Agricultural_Derivatives_Contract_Specs/AD_Contract_Specifications.sflb.ashx, appendixes C and D.

- **Financial standing and credit.** It must demonstrate good financial standing by having a net worth as follows:
  - R 20 million (approximately $3 million) for a storage capacity of up to and including 60,000 tons
  - R 40 million (approximately $6 million) for a storage capacity of up to and including 100,000 tons
  - R 60 million (approximately $9 million) for a storage capacity over 100,000 tons

  The above financial criteria apply to all of the silo owner's registered delivery points. The JSE may call for additional financial guarantees at any time and at its discretion. The silo owner must also annually provide an auditor's written confirmation of its financial position and ability to meet obligations to holders of SAFEX silo receipts. The JSE reserves the right to request an unaudited financial statement at any time. If the silo owner fails to deliver the quantity and quality of the commodity reflected on the face of the receipt, it must make a cash settlement to holders of the receipt within 24 hours of notification by the JSE (except under specified exceptional circumstances) and be liable to a 30 percent cash penalty.

- **Experience, expertise, and physical facilities.** The silo owner must have a two-year track record of successful operation, and adequate experience and technical expertise in handling and storing the commodity. Each silo must have the necessary equipment and appliances for bulk receiving, storage, and outloading under all weather conditions; and each must be operated by properly trained and qualified personnel. The silo owner must own the registered silo site or hold it on a minimum five-year lease. It must also have a minimum storage capacity of 10,000 metric tons on a maize equivalent basis, and a minimum load-out rate of 500 tons per nine-hour working day.

- **Recordkeeping, inspection, and reporting.** The JSE rules list a series of requirements in this area. It may moreover verify and audit the commodities stored by the silo owner and appoint a suitably qualified person to ascertain compliance with JSE requirements. The silo owner must provide the JSE with a copy of each paper SAFEX silo receipt within a week of its issue, and notify the JSE of its presentation or redemption through monthly reporting. All electronic SAFEX silo receipts issued and canceled by the silo owner are to be available to the JSE online via the preferred service provider. The silo owner must biannually furnish the JSE with written confirmation from its external auditors that there is sufficient physical product of the required quality and quantity stored by the silo owner to meet all its obligations to depositors and/or silo receipt holders (including both SAFEX and non-SAFEX silo receipts). It must also provide the JSE with a copy of all South African Grain Information Service audit letters resulting from physical audits.

- **Insurance coverage.** The silo owner must have silo buildings, equipment, and all commodities stored therein comprehensively insured with reputable insurers, as determined by the JSE, against the following minimum risks: fire, earthquake, earth tremor, malicious damage, storm, flood, spontaneous combustion and explosion, lightning, terrorism, theft, and public violence. It must have insurance against damages suffered as a result of fraud by its employees. It must annually furnish the JSE with a declaration from its insurer certifying the details of the amount and risks for which the silo owner is insured, including details about events specific to the grain products traded on the JSE that resulted in any claims by the silo owner for the previous year.

Significantly, JSE rules also provide for the following:

- The depositor pays storage charges in accordance with a tariff determined by the JSE.
- Silo owners must adequately provide for commingling of grain held in the same silo but belonging to different depositors.
- Silo owners are to inload and outload the commodity consecutively without giving unreasonable

preference to one receipt holder, depositor, or owner of the commodity over another.

- In the event of deregistration, the JSE has the right to appoint a collateral manager to manage the deregistration process.
- Disputes related to SAFEX silo receipts are to be immediately reported to the JSE and resolved through arbitration, with the arbitrator appointed by the JSE.

The JSE's primary defense against fraud and malpractice is to require silo owners to have adequate managerial and physical capacity and a high net worth of not less than R 20 million (approximately $3 million). In contrast, the federal warehouse licensing program in the United States allows for a basic net worth of $150,000, a figure that was raised from $50,000 only in 2003. This disparity reflects the differing objectives of the JSE and the U.S. government. While the JSE is mainly concerned with establishing reliable mechanisms for delivering commodities against exchange contracts, the U.S. system was established to facilitate the emergence of relatively small rural elevator businesses. Its regulatory requirements thus place more emphasis on performance guarantees and less on net worth than do those of the JSE. The U.S. federal licensing program requires the posting of unconditional bonds, and some state programs have set up indemnity funds to which warehouse operators must contribute; both of these mechanisms provide further financial backing to support silos.

Appendix E Warehouse Finance and Warehouse Receipt System: Ethiopia

Ethiopian banks have long provided traders and government enterprises with merchandise loans, carrying out direct surveillance and without using a collateral manager. There have been few problems with them, and repayment levels have been reported at about 99 percent.

With regard to public warehousing, the government of Ethiopia passed a WR system act in 2003. Subsequently, the Ministry of Agriculture established a regulatory unit that licensed eight warehouses belonging to the parastatal Ethiopian Grain Trade Enterprise. Although the ministry attempted to persuade cooperatives, commercial farmers, and others to deposit wheat and maize, response was negligible. In 2007, ECX was established and became the government's preferred instrument for implementing the WR system; the earlier initiative was discontinued.

ECX began as a cash (spot trading) exchange, with the intent of moving to futures trading. According to its founding proclamation, it may also operate warehouses and certify third-party warehouse operators "to carry out weighing and inventory management of agricultural commodities and issue Exchange warehouse receipts for the purposes of Exchange trading." ECX began operation in 2008, made an unsuccessful attempt to attract cereals trade, and then switched its attention to coffee. The government of Ethiopia mandated the entire coffee crop—both for export and domestic consumption—be traded through ECX, in place of auctions in Addis Ababa and Dire Dawa (located in the east of Ethiopia). Cooperative unions and large commercial farms have a special derogation that entitles them to export crops directly. The volume of coffee trade grew rapidly, and in September 2011, two other export commodities (sesame and pea beans) were assigned a similar mandate.

By the third year of ECX operation (fiscal 2010–11), the volumes of commodities traded had reached 509,000 tons, of which 51 percent was coffee, 41 percent sesame, 7 percent pea beans, and 1 percent maize (maize being the only nonmandated commodity).[1] Net earnings were reported at Br 50 million (about $3 million), and the return on capital employed at 55 percent.

ECX has certain distinguishing and/or unusual features, apart from its mandatory function:

- It is government owned, but its large membership (245 full members and 283 limited members) is mainly drawn from the private sector. Only members can trade on the exchange; thus, nonmembers wishing to trade must use members as brokers.
- All commodities must be deposited in ECX warehouses before they can be offered for sale on the trading floor. By the end of 2010–11, ECX had established 55 warehouses in 16 locations with a capacity of 2.8 million bags, or approximately 168,000 tons.
- ECX operates its warehouses itself and has thus far not taken any steps to certify third-party operators. Title is transferred to buyers using e-WRs that ECX itself issues and holds in its central depository; the system is described in appendix F. A system of performance guarantees including an indemnity fund has been established in line with good international practice.
- All stocks are stored on a commingled basis by grade; this is a departure from international practice, which typically allows for identity

[1] Data here and throughout this appendix are from ECX (2011).

preservation of high-value commodities like Arabica coffee and cocoa.

- The government has mandated procurement arrangements involving primary transaction centers in each *kabele* (lowest administrative level) as a complementary measure; these are fenced locations where all mandated crops must be traded before being shipped to ECX warehouses.
- Since 2005, ECX has benefited from substantial donor funding—ECX (2011) lists about $20 million in current and planned projects.
- ECX has recruited staff with extensive international experience in the financial sector, mainly people from the Ethiopian diaspora, and with salaries paid by the donor community and the government; four such staff members were in place as of March 2012.

ECX has had difficulty in gaining traction with food commodities; this is attributed to lower-than-expected production, lack of on-site cleaning facilities, low-quality grains resulting in a high percentage of rejections, a government export ban, and traders' fear that a formal system such as ECX will bring them under the purview of the tax authorities. The government plans to mandate the trading of maize and wheat through the primary transaction centers and ECX in 2012–13, and intends to progressively extend the system to other crops.

Until 2010, ECX used WRs only as a delivery instrument. In September 2010, however, ECX began a program of WR financing with sesame and pea beans, with technical support from IFC. During the first 12 months of this program, the government-owned Commercial Bank of Ethiopia advanced about $1.14 million against a total of 292 tons of sesame and 170 tons of pea beans in three storage locations. The program faces two major limitations: (1) the short expiration date on the WRs (30 days for coffee and 60 days for the other two crops), which makes it infeasible to lend for coffee and limits the duration of loans for the other crops; and (2) a government financial sector measure that requires private banks to buy government bonds. In practice, the Commercial Bank of Ethiopia is the only bank extending WR loans. Other banks want to join the lending activity, seeing ECX warehouses as highly secure and possessing the government's implicit guarantee, but cannot afford to do so because of the requirement to buy bonds.

ECX's main strength lies in the operational arrangements it has put in place in establishing the trading system and exchange-linked warehouses (delivery locations). Moreover, its WRs inspire confidence among the banks, avoiding the distrust that has held back warehousing initiatives in some other countries. However, significant logistical problems result from a combination of Internet and power failures and a shortage of physical capacity (in terms of warehouses and truck scales/weigh bridges). These deficiencies make it difficult to handle large volumes of mandated crops, and result in large tailbacks at certain sites; in the worst cases, trucks reportedly wait in queues for over 10 days. There is also a major black market for coffee. The planned mandating of over 1 million tons of grain crops will likely only exacerbate these problems.

Even if the logistics are successfully addressed and the government decides not to mandate grain crops for the moment, concerns have been raised about the current model. First, there is a question as to whether the mandated structure enhances market efficiency or simply adds steps and associated costs. Independent research should help in clarifying this complex issue. Second, it is not known whether the system is having a positive or negative impact on commodity quality. For example, there is widespread concern among exporters and international traders that the system is "commoditizing" Ethiopian coffee. This could reduce the country's ability to fully exploit rapidly growing international niche markets (e.g., gourmet, organic, ecological, fair trade) for quality washed Arabica. There is also a concern that the system is creating a disconnect in supply chains, exacerbating defaults on export contracts.

Appendix F Electronic Warehouse Receipt System: Ethiopia Commodity Exchange

This appendix describes and illustrates the e-WR procedure adopted by ECX.

Pre–warehouse receipt financing preparations

Prior to the financing of the WR, a number of preparatory steps must be completed by the various parties involved:

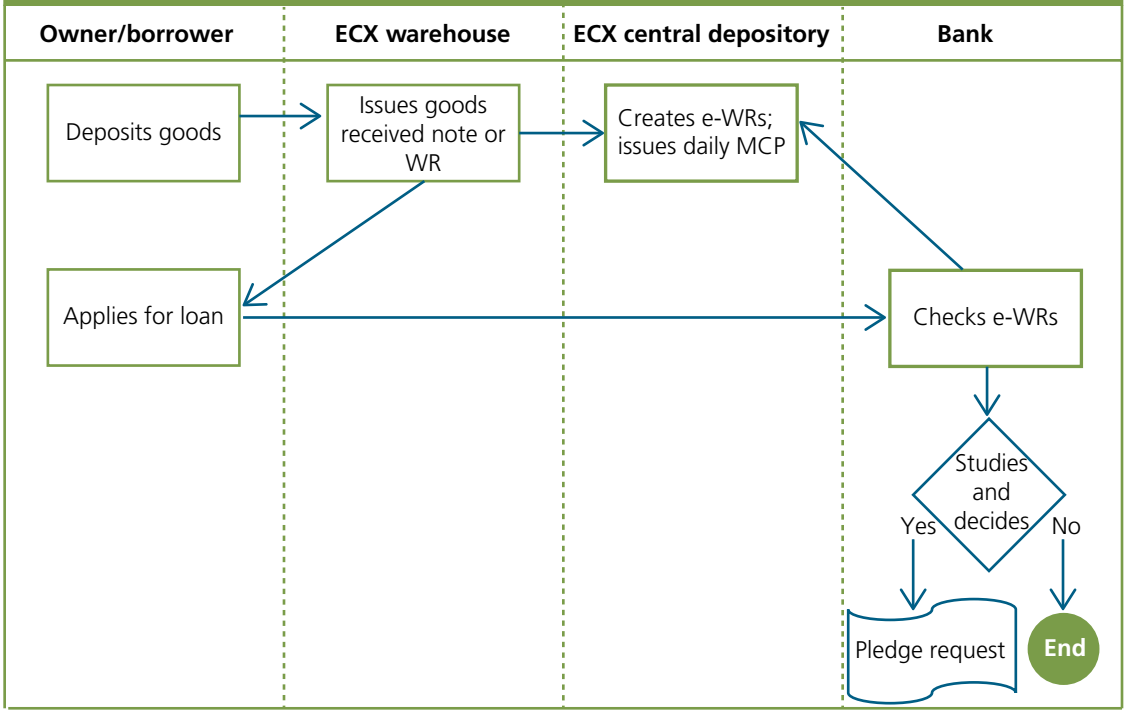
- The potential borrower must register with ECX as a member or client, in accordance with ECX rules and procedures, in order to be able to deposit commodities in an ECX warehouse.
- The bank must register with ECX in order to be able to receive e-WRs and to exchange information with ECX regarding the status of WRs, pledges, and market data.
- The bank must establish a line of credit for the potential borrower for ECX WR-backed financing.

Warehouse receipt verification (optional)

When a commodity owner deposits approved goods in an ECX warehouse, the warehouse will issue a goods received note, which triggers the creation of an e-WR at the ECX central depository. The existence of this receipt will be reflected in the member client position report (MCP) issued the following day by the ECX central depository (figure F.1).

The commodity owner can then approach the bank for a loan, using either the goods received note or a paper copy of the MCP to verify the

Figure F.1 Warehouse receipt verification



existence of the collateral commodity. The bank may wish to check the status of the receipt submitted by the borrower with ECX to verify its existence, status (e.g., it may already have been pledged), and/or matching with the data reflected in the goods received note and MCP. Based on the information received from ECX, the bank makes its decision as to whether to proceed with the borrower's financing request.

Pledge of warehouse receipt and financing

Upon receipt of the borrower's financing request, the bank will ask ECX to pledge the WR to it. Provided the receipt is still valid, the information provided by the bank is correct, and the receipt has not already been pledged, the ECX central depository will confirm its pledge of the receipt to the bank (figure F.2).

If the bank did not perform the status check outlined above, it will verify that the received pledge matches the commodity type, quality, and quantity by comparing the borrower's goods received note against the details of the WR pledge.

If the information associated with the pledge meets the bank's requirements with regard to the quantity and quality of the underlying commodity, loan disbursement is approved.

Pledge confirmation is reflected in the daily MCP issued by the ECX central depository to its members.

Monitoring and reporting

The ECX central depository provides the bank with a daily report on the status of the commodities financed by the bank (figure F.3). This report

Figure F.2 Pledge of warehouse receipt and financing

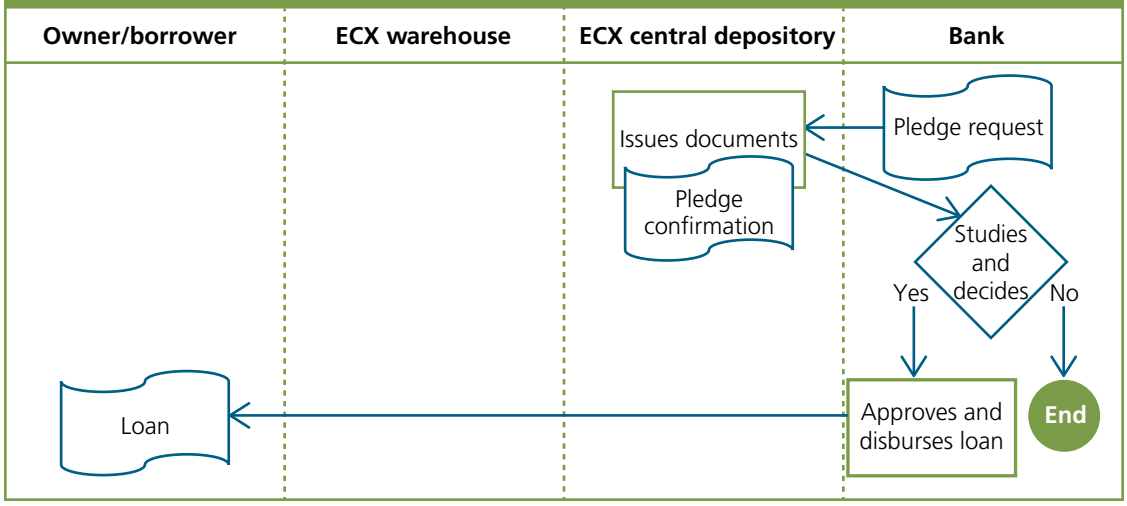
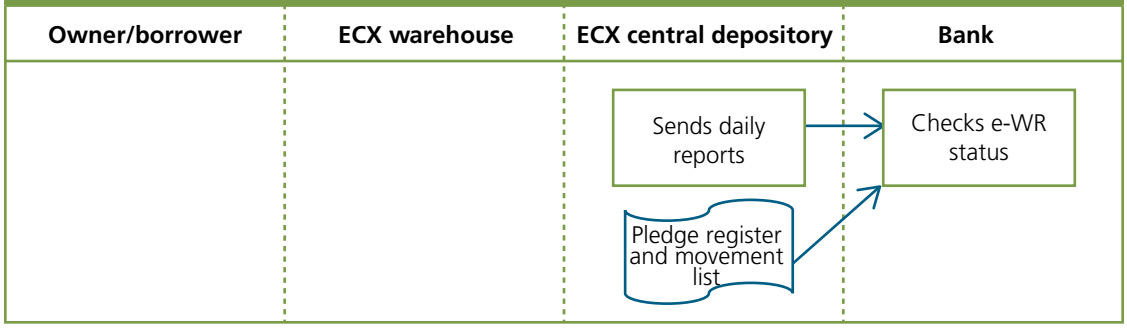


Figure F.3 Monitoring and reporting



includes the number of pledged WRs, those with a no-sale status, those whose no-sale status has been lifted, and those that have been sold. Information on the sale results is also included in the report, as discussed below.

ECX also provides live market data on commodity prices, volumes traded, and so on, through its public website to enable the bank to monitor its exposure against outstanding WR-secured loans.

Lifting no-sale restriction

ECX will not allow the sale of any WR with a no-sale restriction at its trading sessions; any pledged receipt has a no-sale restriction unless or until the bank formally requests the lifting of such restriction.

Upon agreement between the borrower and the bank, the bank will instruct the ECX central depository that the no-sale restriction on a pledged WR can be lifted. The receipt's changed status will be reported in the next MCP. Simultaneously, the bank will give the ECX clearing house details on the account to which the proceeds of the sale (less ECX fees and taxes) should be paid (figure F.4).

Sale of warehouse receipt

The WR is sold in ECX trading sessions following the lifting of the no-sale restriction. The buyer pays the proceeds of the sale to the ECX clearing house, which also guarantees the settlement of the sale and pays the balance of the sale (less fees and taxes) to the bank's designated account. If the WR was worth more than the outstanding bank loan and fees, the bank refunds the difference to the borrower; if it was worth less, the borrower pays the difference to the bank.

Once the receipt has been sold, the pledge on it (or on the part that has been sold) is lifted, and the buyer can take delivery of the commodity (figure F.5). This system offers a maximum level of security to the bank, without requiring the borrower to secure sufficient funds to repay the bank in order to allow the sale of the goods.

Release of warehouse receipt pledge

In the event that the borrower prepays the loan or if the commodity market price increases significantly and the bank is willing to release part of the

Figure F.4 Lifting no-sale restriction

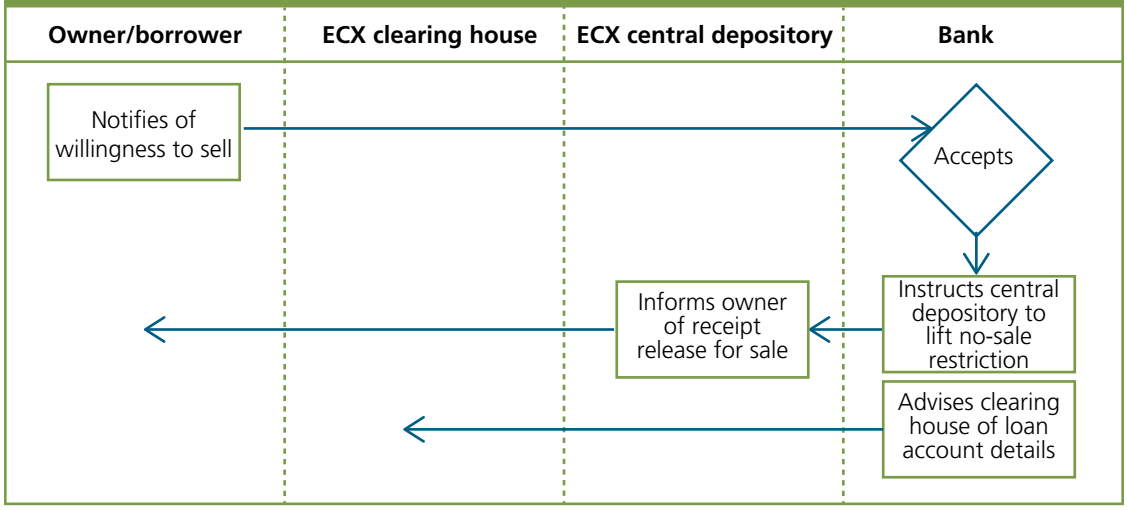
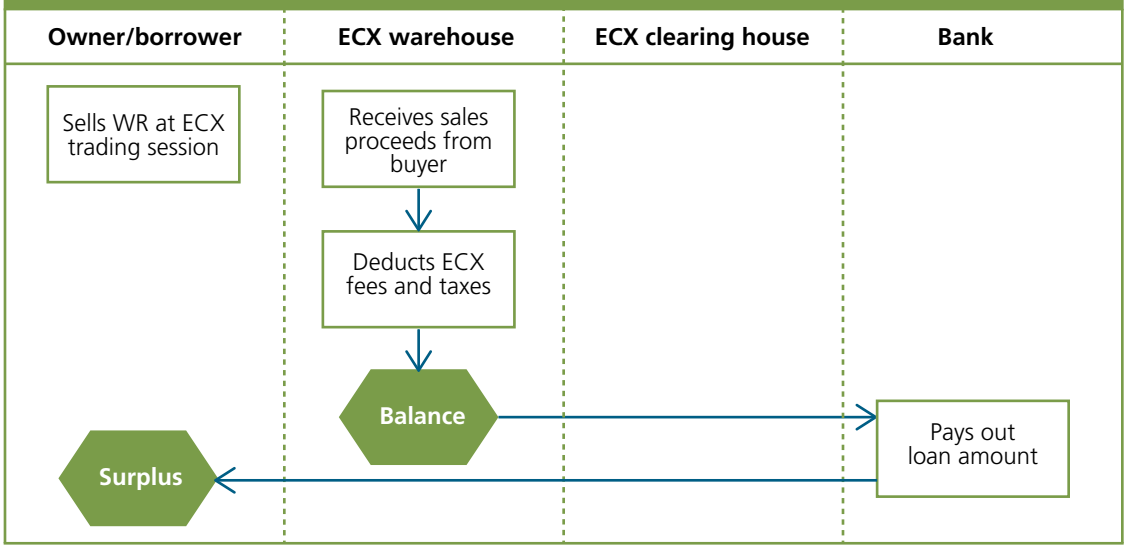


Figure F.5 Sale of warehouse receipt



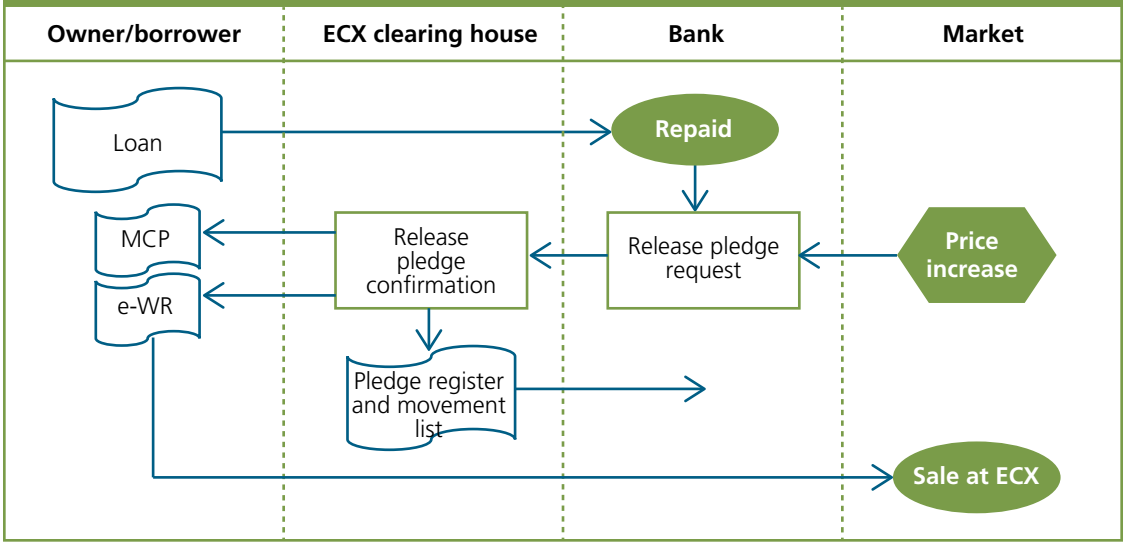
excess collateral, the bank may request that ECX release the WR pledge.

The removal of the pledge is listed in the MCP and appears on the e-WR, which allows the owner of the receipt to sell the commodity on the market. The proceeds of the sale are paid directly to the commodity owner rather than to the bank. The value of the sale in a trading session is paid and guaranteed by the ECX clearing house, and the balance of the sale (less ECX fees and taxes) is paid directly to the owner's account (figure F.6).

Foreclosure

If the borrower fails to repay the loan on maturity, the bank may initiate foreclosure. Typically, the loan maturity is the same as the expiration date of the ECX WR. There is a heavy penalty (3.5 percent of the original WR value per day) for any receipt that is outstanding beyond its expiration date. However, the loan could have been advanced for a period less than the expiration of the WR for various reasons, and/or the borrower may be in breach of the loan agreement with the bank, as

Figure F.6 Release of warehouse receipt pledge



a consequence of which the bank may decide to force the sale of the WR.

If a WR loan reaches its maturity date without the receipt having been sold (repaid), the bank gives the borrower five days' notice that it intends to foreclose on the loan. The borrower is then granted an additional 15 days to repay the loan (e.g., by requesting the sale of the WR through ECX).

If after a maximum period of 20 days (5 days notification + 15 days additional period), the borrower has failed to repay the outstanding loan amount, the bank notifies ECX of its foreclosure of the WR. The bank then initiates the sale of the receipt through ECX (or privately, if the commodity is not a mandated commodity) (figure F.7). Mandated commodities are currently export-quality coffee, sesame, and white pea beans.

After the bank sends a foreclosure notification to the ECX central depository, it has an additional 20 days to sell the WR/commodity; it has a total of 40 days' automatic extension of the WR if the expiration date is reached without having to pay the penalty being charged by ECX.

The bank instructs its agent to sell the commodity. For a sale through ECX (for mandated commodities), the bank appoints an intermediary ECX member to act as its agent. For nonmandated commodities such as wheat, maize, red pea beans, chickpeas, and sorghum, the bank may choose to sell privately and withdraw the commodity from the ECX warehouse after paying the appropriate fees and taxes.

The balance of the proceeds of a commodity sale at an ECX trading session is paid into the bank's account by the ECX clearing house. Any surplus remaining after the loan repayment and penalties are covered is paid to the borrower (figure F.8).

Figure F.7 Initiating foreclosure

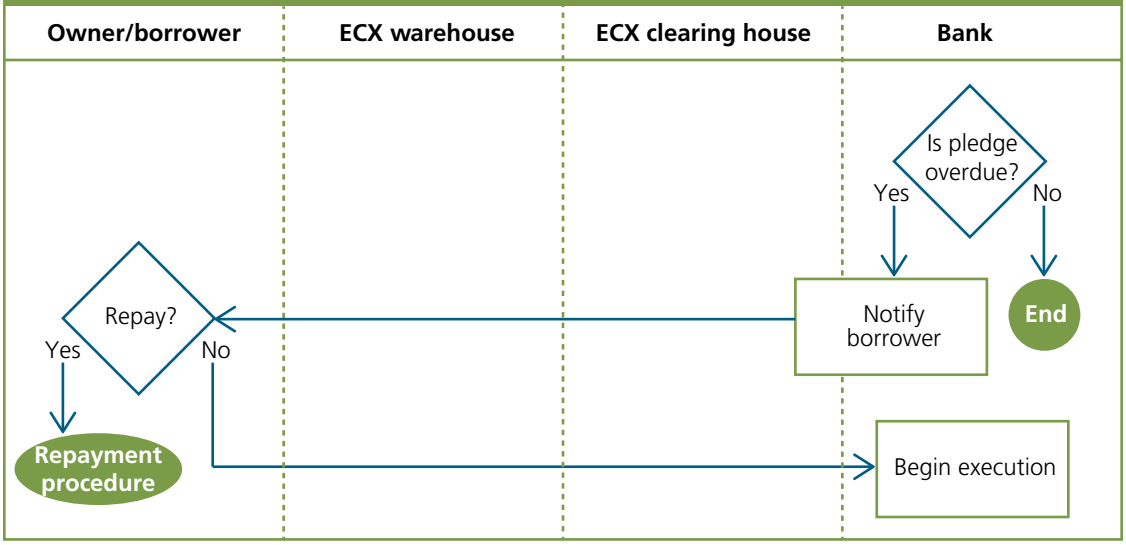
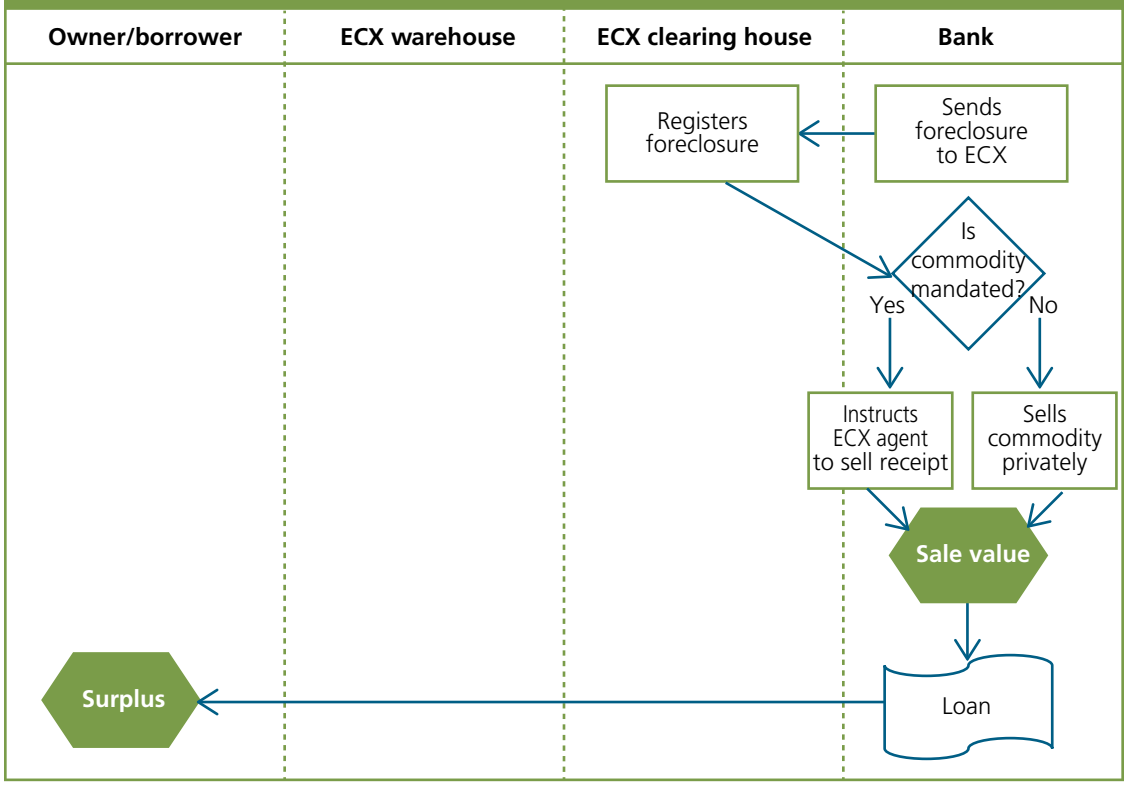


Figure F.8 Foreclosure sale



Appendix G Addis Corn Company Case Study: Ethiopia

In this case study, note that the WR system is fully integrated in the commodity exchange. In Ethiopia, ECX issues the WR; this is not the case with other commodity exchanges (such as SAFEX in South Africa), where the warehouse operator typically issues the WR.[1]

Presentation

Addis Corn Company is a long-standing client of the fictional Ethiopian Commodity Bank. In 2007, the company began collecting maize from small cooperatives and farmers and selling it to local millers and traders. By now, it has developed into a midsize trader with sales of about Br 200 million and net profits of about Br 20 million. It has developed a strong sourcing network inland with several small warehouses in maize-producing areas. Key operational and financial data are provided in this appendix.

Addis Corn Company has been growing significantly since 2007, with sales volumes of about 1 million quintals doubling to about 2 million quintals by 2010. Although the company has shown increasing profitability in line with its growth, its working capital management has been mediocre. In particular, turnover of stocks has slowed: in 2007, stocks stayed in the warehouse for 100 days; this had increased to 200 days in 2010. The huge increase in inventory value has been largely financed by short-term loans provided by the Ethiopian Commodity Bank. Capitalization of the company has been reasonable at around 30 percent, with part of the profits being retained and part being distributed as dividends.

The Ethiopian Commodity Bank has historically financed Addis Corn Company mainly on the basis of merchandise loans backed by the maize stocks stored in the client's own warehouses. A long-term loan was used to finance its warehouse expansion and is secured by a first-ranking mortgage on the warehouses. Advance ratios under the merchandise loans are in the range of 50–70 percent, because grading in the client's warehouse is only moderate due to limited sampling. Also, the actual volume of stocks is difficult to quantify.

Addis Corn Company's management is experienced and well regarded. It would like to continue the company's growth in maize trading throughout 2011. Several smaller competitors went bankrupt in the economic crisis, and Addis Corn Company wants to take over their available market share.

The additional working capital loans requested for 2011 amount to approximately Br 30 million (on top of current working capital loans of about Br 70 million). In 2011, the new ECX WR system will become operational, which may provide a more secure stock financing system than the current merchandise loans, which are deemed a rather laborious method of stock financing.

Financials

Table G.1 presents mock financials for the Addis Corn Company, provided for illustration purposes only and showing the basic financials that could be expected from a smaller commodity trading company.

[1] This case study was presented at a seminar in April 2011 to promote WR financing to Ethiopian banks under an IFC capacity-building program.

Table G.1 Example Financials: Addis Corn Company

	2007	2008	2009	2010	2011[a]
Operational data					
Sales volume (quintal)	1,000,000	1,250,000	1,500,000	2,000,000	2,600,000
Own storage capacity (quintal)	250,000	312,500	375,000	500,000	650,000
Average maize price (Br/quintal)	100	130	140	90	100
Price change % year over year		30	8	–36	11
Profit and loss (Br)					
Sales	100,000,000	162,500,000	210,000,000	180,000,000	260,000,000
Cost of goods sold	85,000,000	116,000,000	170,000,000	157,000,000	212,000,000
Gross profit	15,000,000	46,500,000	40,000,000	23,000,000	48,000,000
Fixed cost	1,500,000	1,750,000	2,000,000	2,500,000	3,000,000
Operating profit (earnings before interest and tax)	13,500,000	44,750,000	38,000,000	20,500,000	45,000,000
Interest cost	3,000,000	5,000,000	9,000,000	8,000,000	9,000,000
Earnings before tax	10,500,000	39,750,000	29,000,000	12,500,000	36,000,000
Tax (30%)	3,150,000	11,925,000	8,700,000	3,750,000	10,800,000
Net profit	7,350,000	27,825,000	20,300,000	8,750,000	25,200,000
Distributed as dividends	2,000,000	15,000,000	15,000,000	5,000,000	10,000,000
Retained as reserves	5,350,000	12,825,000	5,300,000	3,750,000	15,200,000
Balance sheet (Br)					
Fixed assets	10,000,000	15,000,000	17,000,000	20,000,000	25,000,000
Current assets, of which	32,506,849	64,753,425	103,941,781	110,719,178	150,719,178
Inventories	23,287,671	47,671,233	79,178,082	86,027,397	116,164,384
Accounts receivable	8,219,178	15,582,192	23,013,699	22,191,781	32,054,795
Cash balance	1,000,000	1,500,000	1,750,000	2,500,000	2,500,000
TOTAL ASSETS	42,506,849	79,753,425	120,941,781	130,719,178	175,719,178
Capital	7,500,000	7,500,000	7,500,000	7,500,000	7,500,000
Retained earnings	5,350,000	18,175,000	23,475,000	27,225,000	42,425,000
TOTAL EQUITY	12,850,000	25,675,000	30,975,000	34,725,000	49,925,000
Long-term loans	2,500,000	7,500,000	10,000,000	10,000,000	10,000,000
Short-term loans	22,499,315	38,633,219	68,322,945	73,090,068	98,369,521
Accounts payable	4,657,534	7,945,205	11,643,836	12,904,110	17,424,658
Current liabilities	27,156,849	46,578,425	79,966,781	85,994,178	115,794,178
TOTAL EQUITY AND LIABILITIES	42,506,849	79,753,425	120,941,781	130,719,178	175,719,178
Ratios and indicators					
Gross margin (%)	15.0	28.6	19.0	12.8	18.5
Operating margin (%)	13.5	27.5	18.1	11.4	17.3
Net margin (%)	7.4	17.1	9.7	4.9	9.7
Days inventories	100	150	170	200	200
Days receivables	30	35	40	45	45
Days payables	20	25	25	30	30
Capital ratio (%)	30	32	26	27	28
Current ratio (%)	1.2	1.4	1.3	1.3	1.3
Average interest rate (%)	12	11	11	10	8
Dividend ratio as % of net profits	27	54	74	57	40

a. Projected.

Questions

Based on review of the background and the financial statements:

- What action would you advise to the Ethiopian Commodity Bank credit committee?
- Prepare a SWOT (strengths, weaknesses, opportunities, threats) analysis.
- What do you consider to be the key risks, and how could these risks be mitigated?
- If your advice to the bank credit committee is positive, draft a summary term sheet for the borrower addressing loan term, loan type (e.g., current account), interest rate, financial covenants, any other covenants, conditions for disbursement, top-up clause, and security.
- Explain how repayment of the loan will occur under a best-case scenario (the commodity is sold by the client through ECX before the maturity date of the loan).
- Explain how repayment of the loan will occur under a worst-case scenario (in the event of default with repayment via foreclosure of collateral by the lender).

SWOT analysis

Strengths

- Track record
- Proven management
- Reasonable solvency
- Reasonable liquidity
- Reasonable profit margins for a commodity trader
- Even in a bad year (2010, prices down by 36 percent), the company is profitable

Weaknesses

- Working capital management (especially stock turnover moving in the wrong direction)
- Dependency on maize alone (no other crops traded)
- Storage conditions are moderate
- Storage is in borrower's own warehouses, creating potential conflict of interest

Opportunities

- Replace merchandise loans with WR financing loans
- Increase LTV ratio under WR financing
- Decrease storage/operational risk by using ECX warehouses
- Diversify into other crops such as sesame and pea beans (under WR financing)
- Improve inventory turnover by also using ECX warehouses (should shorten the average storage period because of having to comply with ECX regulations)
- Daily accounts receivable should improve because of direct payment via ECX (as compared to delayed payments by current customers of Addis Corn Company)

Threats

- Large negative swings in maize price could trigger a call for top-up clause payment (margin call)
- If the maize crop were to fail, company will not be able to cover fixed costs and other financial obligations, as its only business is maize trading
- Further deterioration of stock turnover
- Underutilization of the borrower's own storage capacity (since WRs can only be issued in ECX warehouses)

Term sheet

See table G.2.

Table G.2 Example Term Sheet: Addis Corn Company	
Borrower	Addis Corn Company
Lender	Ethiopian Commodity Bank
Facility	A Br [100 million] committed revolving WR financing facility
Drawing mechanism	Loan is disbursed from a current account under a Br [100 million] overdraft limit
Purpose	To finance maize stocks of the borrower stored in ECX warehouses against WRs
Loan term	[1] year (to be renewed subject to the lender's approval)
Advance term	Maximum 90 days (the maximum storage period of maize in ECX warehouses)
Advance repayment date	Any advance ultimately shall be repaid by the last date of the advance term
Loan maturity date	Any outstanding advances under the loan should ultimately be zero on the last day of the loan term
Availability period	Up to 1 month before the end of the loan, term drawdowns can be made by the borrower under the loan
Minimum draw-down amount	Br [100,000]
Loan-to-value ratio	[75%] (advance amount divided by collateral value)
Collateral value	Volume of the maize pledged to the lender multiplied by the market price
Market price	Price of maize per quintal as quoted daily by ECX; in the event this price is not quoted by ECX, an alternative price reference shall be used to be agreed between the lender and the borrower (e.g., Mesalemia price)
Top-up clause (margin call)	In the event the LTV ratio exceeds [80%] during the term of the loan, the lender will give notice to the borrower and the borrower shall be obliged to return the ratio back to [75%] within [10] business days after the date of notice by either →pledging additional maize to the lender, or →prepaying part of the loan
Interest rate	In line with the market price for WR financing to be further discussed between the lender and the borrower
Security	→ECX warehouse pledge issued and confirmed by ECX →Negative pledge on any other stocks of the borrower
Financial covenants	→Capital ratio of at least 25% →Current ratio of at least 1.2% Ratios are measured [once/twice] per year based on the audited company accounts
Other covenants	→The borrower shall notify the lender of its willingness to sell the WRs before the advance repayment date →The borrower agrees that the lender shall be allowed to enforce its pledge on the WRs via a sale on the ECX trading floor in the event of default after giving the required notice period of [5] days, followed by a further grace period of [15] days →Limitations on dividend distributions (to be preapproved by the lender) →Restrictions on change of ownership

(continued)

Table G.2 Example Term Sheet: Addis Corn Company (continued)	
General conditions precedent for disbursement	The standard conditions precedent for these type of loans as per the lender's internal policies (e.g., the normal "know your customer information," any relevant licenses and company registration documents mandated for the Ethiopian business environment) →Lender's approval of the borrower's application →All legal documents signed, including the loan agreement →Legal agreement between the lender and ECX regarding their transactions
Specific conditions precedent for disbursement	→WR information provided by the borrower as per official position report (or alternatively, the paper goods received note, for which the bank will ask ECX for the corresponding e-WR identifier) →Pledge confirmation by ECX →No material adverse changes
Event of default	→If the LTV ratio exceeds [80%] for more than [10] days (i.e., if the borrower has failed to act on the top-up clause within the agreed-upon time) →If the borrower breaches the financial covenants →If the borrower breaches any of the other covenants →In case of bankruptcy →Any material adverse change in the company or its business
Foreclosure of WRs	In the event of default, the lender will issue a notice of default to the borrower of its intent to proceed with a foreclosure on the pledged WR(s) if not repaid within [5] days. After taking into account a [15]-day reparation period, the lender can execute its collateral by presenting the foreclosure request to the ECX central depository. The central depository will proceed with the sale or withdrawal (if allowed) of the commodity. Any surplus remaining after repaying ECX costs and the borrower's debt service (principal plus accrued interest plus fees) will be transferred to the borrower's account.

Risk analysis

See table G.3.

Table G.3 Example Risk Analysis: Addis Corn Company

Risk	Comment	Mitigation
Price risk	Maize prices can be volatile. A significant price drop could decrease the collateral value to below the loan amount.	The top-up clause ensures timely repair by the borrower of a breach of the LTV ratio.
Lack of top-up capacity	In the event of a large price drop, the borrower could be forced to pledge additional maize or prepay part of the loan. This requires the borrower to hold sufficient reserves in case of this occurrence.	Before disbursement, the borrower could set aside an additional volume of WRs to back up the top-up clause (or a similar amount in cash collateral).
Storage risk	Despite the improved storage management in ECX warehouses, there is still a risk of damage to collateral.	ECX guarantees any operational risk including storage risk related to WRs.
ECX operational risk	Mistakes made by the central depository, delays in clearing by the clearing house, electricity blackouts hampering the ECX electronic system.	Any operational risk is covered by the ECX guarantee.
Reluctance of borrower to sell before the deadline	In case prices have decreased during the loan term, the borrower may be reluctant to sell before the deadline.	If the borrower does not sell before the repayment date, the lender can trigger a default event, including issuing a notice to foreclose within [5] days. If the borrower does not react within the notice period, the lender is entitled to commence foreclosure proceedings after a further [15] days.
Bankruptcy of borrower	In case of a complete failure of the maize crop, Addis Corn Company will be hit hard and bankruptcy could be the result.	Since the lender will only disburse funds based on WRs, a failure of the maize crop will not immediately put the WRs' financing structure at risk (i.e., postharvest finance). However, complete crop failure leaves Addis Corn Company with nothing to buy or sell—resulting in risks on repayment of any general outstanding loans (such as the mortgage referenced in case study).

Example of a borrowing base calculation

See table G.4.

Table G.4 Example Borrowing Base: Addis Corn Company

	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10	Wk 11	Wk 12	Wk 13	Wk 14	Wk 15
Maize price (Br/quintal)	100	110	110	120	100	90	80	80	90	80	100	110	130	130	120
Total new WRs pledged (quintal)															
Maize	500,000	—	—	—	600,000	—	—	—	500,000	—	—	—	—	—	—
Total volume of WRs sold (quintal)															
Maize	—	—	—	—	—	300,000	200,000	—	—	—	—	200,000	200,000	—	500,000
Total pledged WR position (quintal)															
Maize	500,000	500,000	500,000	500,000	1,100,000	800,000	600,000	600,000	1,100,000	1,100,000	1,100,000	900,000	700,000	700,000	200,000
Total pledged WR value (Br)															
Maize	50,000,000	55,000,000	55,000,000	60,000,000	110,000,000	72,000,000	48,000,000	48,000,000	99,000,000	88,000,000	110,000,000	99,000,000	91,000,000	91,000,000	24,000,000
Loan (Br)															
Beginning balance	—	37,500,000	37,500,000	37,500,000	37,500,000	82,500,000	55,500,000	39,500,000	39,500,000	73,250,000	73,250,000	73,250,000	51,250,000	25,250,000	25,250,000
Disbursement	37,500,000	—	—	—	45,000,000	—	—	—	33,750,000	—	—	—	—	—	—
Repayment	—	—	—	—	—	27,000,000	16,000,000	—	—	—	—	22,000,000	26,000,000	—	25,250,000
End balance	37,500,000	37,500,000	37,500,000	37,500,000	82,500,000	55,500,000	39,500,000	39,500,000	73,250,000	73,250,000	73,250,000	51,250,000	25,250,000	25,250,000	—
Advance ratio (LTV) (%)	75	68	68	63	75	77	82	82	74	83	67	52	28	28	0
Covenant for top-up clause	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
In compliance (OK) or top up?	OK	OK	OK	OK	OK	OK	Top up	Top up	OK	Top up	OK	OK	OK	OK	OK

Appendix H Operational Risk Assessment Tool

Step	Risk identified	Type of risk	Monetary risk	Probability of occurrence	Mitigation	Comments
Application	Delays in processing applications	Strategic	Medium		Speed up loan screening by loan officers	
	Lack of checks and balances	Operational	Medium		Increase number of staff	
	Failure to locate and identify borrower	Operational			Correct filling of credit application forms	
Appraisal and approval	Borrowers do not keep financial business statements	Credit	Medium	Often		Failure to keep financial statements can result in failure to lend to a good project or loans issued to a business that has "window dressed" its accounts
	Borrowers do not know how to write a business plan	Credit	Medium	Often		Failure to write a business plan can result in diversion of a loan to fund an idea/project that is likely to fail
	Perfection of security (land) can take a long time, delay loan issuance	Credit	Medium	Often		Continue lobbying the Ministry of Land and other partners to speed the process of securities perfection
	Noncompliance with regulatory rules and legislation	Operational	High	Seldom		Review how the regulatory framework applies, seek guidance from legal counsel
	Lack of credit references and credit bureau; poor evaluation of borrower's ability to pay	Credit	Medium	Seldom		Effective measures require fully fledged reference bureau; continue internal character reference practices and internal posting of blacklisted defaulters
	Government and political influence on operations	Credit	High	Seldom		Follow established credit procedures
	Collateral valuations, verifications, and recording	Credit	Medium	Seldom		Follow up with loan compliance officers to ensure branches adhere to established guidelines

Step	Risk identified	Type of risk	Monetary risk	Probability of occurrence	Mitigation	Comments
Appraisal and approval	Issuing loans to businesses that do not exist	Credit			Visit borrower business sites	
	Issuing bad loans and nonrepayment	Credit			Proper analysis of borrower's financial information	
	Nonexistent commodity/ counterfeit WR	Credit	High	Seldom	Proper check of WR and warehouse operator; spot check physical goods	
Documentation, disbursement, and administration	Lack of loan management processes including inaccurate/untimely MIS reports, disregarding credit policies and procedures, poor/nonexistent management of arrears	Operational	High	Periodic		Continue to improve MIS; implement improved MISs if necessary; introduce MIS loans back office
	Void and null contracts	Operational			Issue complete letters of offer, loan agreement, and authentication of loan agreement	
Monitoring and review	Loan officers might not follow up on daily system-generated arrears report	Credit	Medium	Seldom		Failure to follow up on loans that are due can result in loss of the money loaned
	Inadequate/ inappropriate training at senior levels regarding business and related risk understanding	Strategic	Medium	Seldom		Continue training branch managers, loan compliance officers, audit and compliance managers, etc.
	Bribery/corruption and fraud (internal and external)	Operational	Medium	Periodic		Expand monitoring scope by managers and increase loan operation compliance follow-up
Repayment	WR (certificate of pledge) missing from bank files	Operational	High	Seldom	Correct filling of documents within the bank	

Note: MIS = management information system.

Appendix I Internal Processing for Warehouse Receipt Financing: Ethiopia Example

Initial screening

Step	Role	Action	Detailed instructions	Support tool or system
1.1	Loan officer	Receive request for WR financing	Loan department provides applicant company information form to be completed by the borrower	WR routing form
1.2	Loan officer	Initial screening of borrower including character and liability checks	Screening of the applicant company information form prepared by the borrower	WR routing form
1.3	Loan officer	Decide to proceed	Decision is based on the information received: is the borrower eligible, is the participating warehouse acceptable to the bank, is the commodity acceptable to the bank. Borrowers and participating warehouses are selected based on their performance (years in business, turnover, history with the bank). The warehouse license, registration of WRs, and performance guarantee are checked. If the bank is not satisfied, a reason for rejection is provided.	WR routing form and creation of borrower file (if positive decision)
1.4	Loan officer	Financial analyses of loan applications including business information collection and collateral	Collection of additional information and documentation, preparation of the borrower analysis, collateral analysis, financial analysis, and risk analysis. Preparation of recommendations. The analyses are carried out using an application that includes (1) borrower analysis, (2) collateral, (3) balance sheet, and (4) risk analysis.	Lending procedure with special attention to collateral valuation
1.5	Branch manager	Recommendations and review	Review of the completed analyses and recommendations, calculation of the loan, and preparation of an advisement for the head office (only if positive). The branch manager needs to concur with the proposal before sending it to the head office.	WR routing form
1.6	Head office	Loan approval/ rejection	Approval or rejection of credit facility: information to the branch manager concerning the decision made by the head office, including the reason for rejection.	
1.7	Loan officer	Inform branch manager and borrower	Inform the branch manager and borrower of the decision made by the head office. In case of rejection, prepare and send a letter of rejection.	

Predisbursement instructions

Step	Role	Action	Detailed instructions	Support tool or system
2.1	Loan officer	Prepare credit facility agreement in business account	Prepare the credit facility agreement in business account for the WR facility and the general terms and conditions of the bank and current account terms and conditions.	
2.2	Loan officer	Check loan agreement and inform the borrower	The loan officer informs the borrower that the loan will be granted under the conditions described in the credit facility agreement for the WR facility.	Borrower file
2.3	Branch manager	Sign loan agreement jointly	The branch manager and the borrower sign the loan agreement jointly. After the agreement has been signed by all parties, one original goes to the head office, one original is filed at the branch, and one original is provided to the borrower.	Borrower file + original in branch safe
2.4	Branch operations manager	Open account in bank system	Open the borrower file in the bank system.	System
2.5	Loan officer	Collect and handle WR	The borrower brings an MCP issued by the ECX (document stating the existence of the WR in the ECX central depository) to the bank and requests disbursement. A register is created showing the type, quality, quantity, and expected value of the commodity; the warehouse that issued the goods received note; the number of the receipt; and the owner of the commodity. The WR is submitted to the branch operations manager.	Borrower file
2.6	Loan officer	(Optional) Check WR with ECX central depository	Check the validity of the WR with the ECX central depository before the pledge is requested. Check if (1) a goods received note or WR exists and is owned by the borrower, (2) the WR is approved by the ECX central depository, and (3) the WR is not already pledged.	
2.7	Loan officer	Receive WR status check from ECX central depository	The loan officer verifies the status check received and, if the information confirms that of the goods received note or e-WR information received from the borrower, can proceed to the pledge request from the ECX central depository; the information is sent to the branch operations manager.	Borrower file + bank safe
2.8	Loan officer	Submit pledge request to ECX central depository for goods received note/e-WR	The loan officer submits a pledge request to the ECX central depository for the underlying commodities of the goods received note or the e-WR submitted by the borrower.	
2.9	Branch operations manager	Receive ECX pledge confirmation	Verify the ECX pledge confirmation and e-WR details; if they match the decision, proceed with loan disbursement. The branch manager is informed of the decision to proceed with loan disbursement.	Borrower file

2.10	Branch operations manager	Register and activate credit facility through registration in client account	In the account, note the volume of the stored commodity and calculate the disbursement value of the loan.	System and borrowing base certificate
2.11	Loan officer	Verify activated credit facility	Verify registered and activated credit facility in borrower account.	
2.12	Branch operations manager	File original loan agreement in strong room	File the WR with the original loan agreement in the strong room.	
2.13	Loan officer	Inform the borrower	Notify the borrower that the WR has been processed and that the loan/overdraft has been increased by an amount based on the agreed borrowing base for the commodity value.	

Entering information from the warehouse receipt to the borrower's electronic file: example calculation

Approved limit of the loan		
Type of commodity	Coffee (parchment)	
Expected volume (kg)	400,000	
Price per kg	$1.21	T Sh 1,500.40
Connected base auction cleaned coffee	$1.89	
Total value of the commodity	$484,000	T Sh 600,160,000
Value of the overdraft facility (70% LTV)	$338,800	T Sh 420,112,000

Trans-action/ receipt no.	Kgs of coffee deposited	Kgs of coffee sold	Total kgs of coffee in stock (cumulative)	Value of coffee deposit/sale	Total value of coffee in stock (cumulative)	Loan amount disbursed/ repaid	Total loan facility value (cumulative)
601	163,152	0	163,152	197,361.29	197,361.29	138,152.90	138,152.90
612	104,035	0	267,187	125,848.79	323,210.08	88,094.15	226,247.06
613	18,269	0	285,456	22,099.60	345,309.68	15,469.72	241,716.77

Release of pledged commodity

Step	Role	Action	Detailed instructions	Support tool or system
3.1	Loan officer	Receive request from borrower to allow sale of commodity	The borrower informs the bank that it wishes to proceed with the sale of a specific commodity under the ECX WR through the ECX at least x days prior to maturity of the loan. The branch operations manager is informed.	Borrower file
3.2	Branch operations manager	Request that ECX lift the no-sale restriction on the WR	The bank requests that ECX lift the no-sale restriction on the WR (or part of the WR) and proceed with the sale of the underlying commodity.	Borrower file
3.3	Loan officer	Receive confirmation of details and proceeds of sales transaction from ECX	Provide confirmation to the branch office that proceeds of the sales transaction (less ECX fees) are in the bank account.	
3.4	Branch operations manager	Adjust loan in the borrower file after the sales transaction	Calculate the new maximum disbursement amount, taking into account the reduced stock pledged after the sales transaction.	System + borrower file
3.5	Loan officer	Inform the borrower	Inform the borrower of the new maximum disbursement value of the loan or excess to be paid to the borrower.	

Release of pledge on borrower's electronic file with commodity sale: example calculation

Trans-action/ receipt no.	Kgs of coffee deposited	Kgs of coffee sold	Total kgs of coffee in stock (cumulative)	Value of coffee deposit/sale	Total value of coffee in stock (cumulative)	Loan amount disbursed/ repaid	Total loan facility value (cumulative)
601	163,152	0	163,152	197,361.29	197,361.29	138,152.90	138,152.90
612	104,035	0	267,187	125,848.79	323,210.08	88,094.15	226,247.06
613	18,269	0	285,456	22,099.60	345,309.68	15,469.72	241,716.77
625	21,500	0	306,956	26,008.06	371,317.74	18,205.65	259,922.42
626	11,394	0	318,350	13,783.06	385,100.81	9,648.15	269,570.56
634	11,190	0	329,540	13,536.29	398,637.10	9,475.40	279,045.97
641	21,763	0	351,303	26,326.21	424,963.31	18,428.35	297,474.31
659	73,384	0	424,687	88,770.97	513,734.27	62,139.68	359,613.99
661	19,445	0	444,132	23,522.18	537,256.45	16,465.52	376,079.52
662	21,002	0	465,134	25,405.65	562,662.10	17,783.95	393,863.47
Sale		(25,000)	440,134	(30,241.94)	532,420.16	(21,169.35)	372,694.11
Sale		(375,000)	65,134	(453,629.03)	78,791.13	(317,540.32)	55,153.79
705	250,000	0	315,134	302,419.35	381,210.48	211,693.55	266,847.34

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2121 Pennsylvania Avenue, NW
Washington, DC 20433 USA
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