CAMBODIA
FINANCE FOR SMALL AND MEDIUM-SIZED AGribusinesses

Potentials and Constraints of Using Warehouse Receipts Financing in Cambodia
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POTENTIALS AND CONSTRAINTS OF USING WAREHOUSE RECEIPTS FINANCING IN CAMBODIA

June 15, 2014
Agriculture Global Practice
East Asia and Pacific Region
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Acknowledgments

The Potentials and Constraints of using Warehouse Receipt Financing in Cambodia rice was prepared by a consultant Lamon Rutten with support from Muniroth Sok Alassane Saw (country manager, World Bank) and Paavo Eliste (senior agricultural economist, World Bank) provided overall direction and guidance for the analyses.

This report reflects the findings of two consecutive missions to Cambodia – 3 weeks in 2012 and 2 weeks in 2014. Findings were presented to and discussed with stakeholders, whose comments were highly valuable.

This report was commissioned under the Cambodia Food Crisis Capacity Support Partnership (FCCSP) Trust Fund, and funded by Australian Aid.

The FCCSP is a joint AusAID - World Bank initiative to support Royal Government of Cambodia and stakeholders to address the constraints in smallholder agriculture and social protection that have been identified in the context of the food and financial crises.
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.

Collateral Manager

Company that ensures the integrity of warehouses, and the quality and quantity of commodities stored therein, so that these can be offered as collateral for a loan.

Collateral Management Agreement

An instrument, which allows a product owner to secure a loan by using the commodity as collateral. It is usually a three party agreement involving the product owner / borrower, the collateral manager and the bank. A similar instrument may involve four parties such as: product owner / borrower, the collateral manager, the financing bank and the buyer.

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

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.

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Indemnity Fund

A fund that is to provide money to indemnify producers for losses incurred due to the failure to perform of a warehouse operator that is a member of the Fund.

Public Warehouse

A storage facility that offers its services to all firms and people.

Release order/warrant

A document issued by a lender requiring a warehouse operator to release commodities to a given party.

Stock Monitoring Agreement

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

Warehouse Receipts

Warehouse receipts are issued by warehouse operators 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 commodity.
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AFD</td>
<td>Agence Française de Développement</td>
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<tr>
<td>AusAID</td>
<td>Australian Agency for International Development</td>
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<tr>
<td>CM</td>
<td>Collateral Manager</td>
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<td>CMA</td>
<td>Collateral Management Agreement</td>
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<td>EU</td>
<td>European Union</td>
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<td>EWRS</td>
<td>Electronic Warehouse Receipts System</td>
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<td>FAO</td>
<td>Food and Agriculture Organisation</td>
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<td>FOB</td>
<td>Free On Board</td>
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<td>IDA</td>
<td>International Development Association</td>
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<tr>
<td>IFC</td>
<td>International Finance Association</td>
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<tr>
<td>JICA</td>
<td>Japan International Cooperation Agency</td>
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<tr>
<td>Kg</td>
<td>Kilogram</td>
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<tr>
<td>MAFF</td>
<td>Ministry of Agriculture, Forestry and Fisheries</td>
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<tr>
<td>NBC</td>
<td>National Bank of Cambodia</td>
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<tr>
<td>NGO</td>
<td>Non-Governmental Organization</td>
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<tr>
<td>OECD</td>
<td>Organization for Economic Cooperation and Development</td>
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<tr>
<td>OPM</td>
<td>Open Paddy Market</td>
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<tr>
<td>RDB</td>
<td>Rural Development Bank</td>
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<td>RGC</td>
<td>Royal Government of Cambodia</td>
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<tr>
<td>SMA</td>
<td>Stock Monitoring Agreement</td>
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<tr>
<td>USA</td>
<td>United States of America</td>
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ការបង្កើនការនាំចេញអង្កររបស់ប្រទេសកម្ពុជា ត្រូវឱ្យមានការបង្កើនលទ្ធភាពទទួលបានហិរញ្ញប្បទានសមស្របសម្រាប់វិស័យកសិកម្មការផលិតអង្ករមានប្រមាណជា១៥ភាគរយនៃផលិតផលក្នុងស្រុកសរុប(ស.ស.ស)នៃវិស័យកសិកម្មរបស់ប្រទេសកម្ពុជា។ ការផលិតការកែច្នៃនិងការផ្សព្វផ្សាយទីផ្សារអង្ករត្រូវបានគេប៉ាន់ប្រមាណថាផ្ដល់ការងារដល់ប្រជាពលរដ្ឋចំនួនមួយភាគប្រាំនៃប្រជាពលរដ្ឋសរុបចំនួន១៥លាននាក់របស់ប្រទេសនេះ។ រដ្ឋាភិបាលកម្ពុជាបានដាក់ចេញនូវគោលដៅនាំចេញអង្ករ១លានតោនត្រឹមឆ្នាំ២០១៥។ បើទោះបីជាការនាំចេញអង្ករបានកើនឡើងពី៥០០០តោននៅក្នុងឆ្នាំ២០១០ដល់៣៧២០០០តោននៅក្នុងឆ្នាំ២០១៣ក៏ដោយគោលដៅសម្រាប់នាំចេញនេះនៅតែជាមហិច្ឆតាមួយយ៉ាងធំធេង។ ការនាំចេញអង្កររបស់ប្រទេសកម្ពុជាត្រូវបានគេរបៀបថានឹងកើនឡើងលើសពីតួលេខនេះនៅក្នុងរយៈពេលវែង។ ការនាំចេញស្រូវអង្ករភាគច្រើនរបស់ប្រទេសកម្ពុជារួមបានក្នុងទម្រង់ជាស្រូវដែលត្រូវលក់ក្រៅព核定ទៅប្រទេសវៀតណាមនិងប្រទេសថៃ។ ប្រសិនបើស្រូវដែលនាំចេញបែបនេះត្រូវបានប្រមូលចូលក្នុងរោងម៉ាស៊ីនកិនស្រូវហើយនាំចេញក្នុងទម្រង់ជាអង្ករវិញវាមិនឃើញមកដើម្បីសម្រេចគោលដៅនៃការនាំចេញបាន១លានតោន។ ការសម្រេចគោលដៅនេះត្រូវមានការពង្រីកសមត្ថភាពកែច្នៃស្ដុកទុកនិងដឹកជញ្ចូនអង្ករឱ្យបានឆាប់រហ័ស។ ប៉ុន្ដែមូលធនដែលមានសម្រាប់ធ្វើបែបនេះគឺជួបប្រទះនឹងឧបសគ្គយ៉ាងធ្ងន់ធ្ងរ។ ចំណុចរាំងស្ទះធំជាងគេចំពោះការបង្កើនការនាំចេញគឺការទទួលបានមូលធនសម្រាប់ប្រតិបត្ដិការពីខាំងក្រៅក្នុងកម្រិតតិចតួច។ រោងម៉ាស៊ីនកិនស្រូវភាគច្រើននៅខ្វះមូលធនសម្រាប់ប្រតិបត្ដិការហើយត្រូវបង្ខំចិត្តប្រើប្រាស់ទ្រព្យសម្បត្តិរយៈពេលវែងរបស់ខ្លួន(ដូចជាhttp://www.adbi.org/files/2013.02.22.cpp.day5.ses3.1.final.policy.options.cambodia.pdf) ។
ដីធ្លី អគារ និង គ្រឿងឧបករណ៍ ដើម្បីទទួលបានកម្ចីរយៈពេលខ្លី ដើម្បីបំពេញតម្រូវការសម្រាប់ប្រតិបត្ដិការរបស់ខ្លួន។ នេះធ្វើឱ្យប៉ះពាល់ដល់សមត្ថភាពរបស់រោងម៉ាស៊ីនកិនស្រូវក្នុងការប្រមូលថវិការយៈពេលវែង ដើម្បីបង្កើនសមត្ថភាពស្ដុកនិងផលិតរបស់ពួកគេ។ ស្រូវនិងអង្ករដែលស្ដុកទុកមិនត្រូវបានប្រើប្រាស់ជាវត្ថុធានានេះគឺជាផលដំណាំតាមរដូវដែលត្រូវស្ដុកទុកនៅក្នុងរយៈពេលមួយវែង។ ប្រសិនបើអង្ករនិយុះនៅក្នុងបរិមាណដ៏ច្រើនបែបនេះអាចប្រើប្រាស់ជាវត្ថុធានាបានវា នឹងជួយធ្វើឱ្ធុសម្រាប់ប្រតិបត្ដិការឆ្លើយតបចំពោះតម្រូវការជាក់ស្ដែងរបស់វិស័យកិនស្រូវ(រៀងរាល់ការទិញនិយុះនិងស្ដុកទុកបានមួយតោននឹងនាំឱ្យអាចទទួលបានកម្ចីសម្រាប់ទិញនិងស្ដុកទុកបន្ថែមទៀត)។ ការធ្វើបែបនេះក៏អាចធ្វើឱ្ធុសម្រាប់ការយកមកវិញនូវអចលនទ្រព្យដែលប្រើប្រាស់ដើម្បីទទួលបានកម្ចីសម្រាប់វិនិយោគរយៈពេលមធ្យមនិងរយៈពេលវែងផងដែរ។ ប្រទេសកម្ពុជាស្ថិតនៅក្នុងស្ថានភាពដ៏ល្អដើម្បីដាក់ឱ្ធុសម្រាប់ការផ្ដល់ហិរញ្ញប្បទានដោយយកផលដំណាំដាក់ជាវត្ថុធានាវិស័យកសិពាណិជ្ផកម្ពុជាភាប់ចាប់អារម្មណ៍ដោយសារតែទំហំនិងស្ថិរភាពរបស់វិស័យនេះ។ ការផលិតអង្ករឱ្យបានមួយលានតោនប្រហែលជាតម្រូវឱ្ធុសម្រាប់ការផ្ដល់ហិរញ្ញប្បទានមូលធនសម្រាប់ប្រតិបត្ដិការរហូតដល់៣០០លានដុល្លារ។ ការផ្ដល់ហិរញ្ញប្បទានមូលធនសម្រាប់ប្រតិបត្ដិការក៏ត្រូវការសម្រាប់ការផលិតការកៃច្នៃនិងការផ្សព្វផ្សាយទីផ្សារអង្ករក្នុងស្រុកផងដែរ។ លើសពីនេះវិស័យកសិពាណិជ្ផគឺជាវិស័យដែលមានភាពរឹងមាំនិងបានបង្ហាញពីកំណើនក្នុងសន្ទុះមួយថេរខណៈពេលដែលវិស័យធំៗផ្សេងទៀតដូចជាអចលនទ្រព្យទេសចរណ៍និងការនាំចេញសម្លៀកបំពាក់មានការថមថយក្រោយវិបត្ដិហិរញ្ញវត្ថុសកលឆ្នាំ២០០៨មុននឹងងើបឡើងវិញម្ដងទៀត។ ដូច្នេះធនាគារជាច្រើនបានរិះរកវិធីបង្កើតវត្ដមានរបស់ខ្លួននៅក្នុងវិស័យកសិពាណិជ្ផហាងវិស័យស្រូវអង្ករក្លាយជាក្រដាសន៍សំខាន់មួយ។
ការផលិតអង្ករធ្វើឡើងជាលក្ខណៈប្រមូលផ្ដុំ។ ខេត្ដចំនួន ៤ ក្នុងចំណោមរាជធានីខេត្ដទាំង ២៤ របស់ប្រទេស រួមចំណែកស្ទើរតែពាក់កណ្ដាលនៃការផលិតអង្ករសរុបរបស់ប្រទេសកម្ពុជា។ ជាគោលការណ៍នេះផ្ដល់លទ្ធភាពឱ្យអ្នកផ្ដល់ហិរញ្ញប្បទានអាចប្រើប្រាស់ស្ដុកស្រូវក្នុងបរិមាណច្រើន ដោយមិនចាំបាច់គ្របដណ្ដប់លើតំបន់ភូមិសាស្ដ្រធំពេក។ អង្ករដែលផលិតបានគឺមិនមានលក្ខណៈដូចគ្នាតែមួយឡើយ ហើយត្រូវបានបែងចែកប្រភេទនិងផ្ដល់តម្លៃឱ្យទៅតាមតម្លៃយោង។ រោងម៉ាស៊ីនកិនស្រូវនិងឈ្មួញអង្ករបែងចែកអង្ករជាបីប្រភេទ (អង្ករក្រអូប អង្ករចម្រុះនិងអង្ករស) និងដាក់តម្លៃដល់ប្រភេទនីមួយៗទាបឬខ្ពស់ទៅតាមតម្លៃយោង។ ដូច្នេះសម្រាប់ធនាគារដែលចង់ផ្ដល់ហិរញ្ញប្បទានទៅតាមអង្ករដែលមានក្នុងស្ដុកមានតម្លៃយោង ដែលគេអាចប្រៀបធៀបដើម្បីកំណត់ពីតម្លៃរបស់អង្ករនោះបាន។ រោងម៉ាស៊ីនកិនស្រូវគឺជាអតិថិជនសក្ដានុពលរបស់ធនាគារ ដោយសារតែពួកគេរក្សាទុកស្ដុកក្នុងបរិមាណច្រើនមានការលើកទឹកចិត្ដមិនត្រឹមតែដើម្បីធានាយ៉ាងណាឱ្យពួកគេមានវត្ថុធាតុដាក់គ្រាន់ ដើមគ្រាន់ដើម្បីឱ្យរោងម៉ាស៊ីនកិនស្រូវរបស់ពួកគេអាចដំណើរការយូរបំផុតតាមដែលអាចធ្វើបានប៉ុណ្ណោះទេ ប៉ុន្ដែដើម្បីបំពេញទៅតាមតម្រូវការរបស់អតិថិជនដែលចង់បានប្រភេទអង្ករសជាក់លាក់ផង។ កសិកររក្សាទុកស្ដុកដែលជាគោលការណ៍អាចឱ្យពួកគេទទួលបានហិរញ្ញប្បទានតាមរយៈធនាគារស្រូវក្នុងសហគមន៍ ប៉ុន្ដែបទពិសោធន៍អន្ដរជាតិបង្ហាញថានេះជាការលំបាកនៅក្នុងការបង្កើតនូវធនាគារសម្រាប់ទំនិញអង្ករដែលផ្ដោតលើការធ្វើពាណិជ្ជកម្មឲ្យបានជោគជ័យណាស់។ ការផ្ដល់ហិរញ្ញប្បទានដោយផ្ទាល់ដល់អ្នកនាំចេញ (តាមរយៈការដាក់ឱ្យអនុវត្ដនូវគម្រោងផ្ដល់កម្ចីដោយប្រើប្រាស់គណនីអតិថិជនជាវត្ថុធានា (factoring)) ដើម្បីឱ្យអ្នកនាំចេញទាំងនោះអាចទទួលបានហិរញ្ញប្បទានភ្លាមៗទទួលបានហិរញ្ញប្បទានភ្លាមៗសម្រាប់ការន គឺអាចធ្វានិងជាអ្វីដែលគេចង់ធ្វានិង
ការមើលិនការបង្កើតប្រការៈពិសោធន៍ដោយមានទំនុលៈកូសុង់រោង ប្រការៈការរៀនប្រការៈនុយក្រូចណោះនូវការបន្តិទ័រ
វិស័យស្រូវអង្ករក្រុមជាតិ មានការប្រើប្រាស់មិនមែនមិនមានការសន្ទ័មិនស្រូវអង្ករក្រុមជាតិ
មានតម្លៃស្រូវទាបបំផុតភ្លាមៗក្រោយប្រមូលផល។

ការសន្ទ័មិនស្រូវអង្ករក្រុមជាតិ
មិនទំនងជាមានភាពខុសប្លែកគ្នាអ្វីឡើយ។

កិច្ចសន្យានៅក្នុងវិស័យនេះមិនត្រូវបានគេគោរពជានិច្ចកាលឡើយដែលនាំឱ្យរោងម៉ាស៊ីនកិនស្រូវនិងធនាគារដែលផ្ដល់ហិរញ្ញប្បទានដល់កិច្ចសន្យានេះត្រូវប្រឈមនឹងហានិភ័យនៃការមិនសងប្រាក់មកវិញឬស្រូវ/អង្ករដែលចាំបាច់ត្រូវស្វែងរកអ្នកបញ្ចាក់ថ្មី-អាចនៅតម្លៃមួយដែលនាំឱ្យមានការខាតបង់។

បង្កើនលក្ខខណ្ឌអនាម័យនិងភូតិគាមអនាម័យកាន់តែតឹងរ៉ឹងជាងមុននៅតាមប្រទេសនាយកនាំចូលនាំឱ្យហានិភ័យកាន់តែមានខ្ពស់ទៀត។ភ្លាមៗអ្នកនាំចេញអាចដឹងថាលោនរបស់គាត់ត្រូវបានគេបដិសេធមិនឱ្យចូលទៅក្នុងប្រទេសអ្នកទិញរបស់គាត់។

ធនាគារចាំបាច់ត្រូវបង្កើតនូវរចនាសម្ព័ន្ធច្បាប់និងកិច្ចសន្យាឱ្យបានត្រឹមត្រូវមួយដើម្បីធានាឱ្យមានការប្រើប្រាស់ស្រូវនិងអង្ករដែលស្ដុកទុកធ្វើជាវត្ថុធានា។បើធៀបជាមួយនឹងទម្រង់នៃវត័យធានាដទៃទៀតដូចជាដីធ្លីអចលនទ្រព្យឬគ្រឿងឧបករណ៍នានានៅតំឡៅវត្ថុធានាជាអ្វីដែលធនាគារងាយស្រួលដកហូតជាងនៅក្នុងករណីដែលអ្នកខ្ចីមិនអាចសងបានហើយអាចលក់បានឆាប់រហ័សនិងលក់ក្នុងតម្លៃដែលអាចព្យាករដឹងជាមុនបាន។

ទំហំទីផ្សារទាំងមូលមានតម្លៃឱ្យធនាគារនៅកម្ពុជាអភិវឌ្ឍជំនាញឯកទេសក្នុងវិស័យស្រូវអង្ករនេះ។

ការគ្រប់គ្រងវត្ថុធានានិងការប្រើប្រាស់ឃ្លាំងសាធារណៈអាចបង្កើតឱ្យមានវត្ថុធានសម្រាប់កម្ចីប្រកបដោយប្រសិទ្ធភាពដូច្នេះការបង្កើតឱ្យមានការផ្ដល់ហិរញ្ញប្បទានដោយប្រើប្រាស់សន្និធីជាវត្ថុធានសម្រាប់មូលធនសម្រាប់ប្រតិបត្ដិការសំខាន់ជាងគេផ្ដល់នៃអត្ថប្រយោជន៍យ៉ាងធំធេងសម្រាប់វិស័យស្រូវអង្ករកម្ពុជា។វាជាក្រុមក្រមិនអាចធ្វើឱ្យមានមូលធនសម្រាប់ការវិនិយោគរយៈពេលវែងដែលចាំបាច់ដើម្បីបង្កើនសមត្ថភាពរបស់ប្រទេសកម្ពុជាឱ្យក្លាយជាអ្នកចេញអង្ករប្រកបដោយភាពប្រកួតប្រជែង។ក្នុងពេលជាមួយគ្នាវានឹងកាត់បន្ថយបញ្ហាស្ថិតនៃតម្រូវការមូលធនសម្រាប់ប្រតិបត្ដិការ។
ការគ្រប់គ្រងវត្ថុធានា គឺជាយន្ដការដ៏ល្អមួយ ដើម្បីបង្កើតឱ្យមានវត្ថុធានាប្រកបដោយប្រសិទ្ធភាព។ នៅក្នុងការគ្រប់គ្រងវត្ថុធានា ធនាគារជួលភាគីទីបីមួយ ដែលគេហៅថាអ្នកគ្រប់គ្រងវត្ថុធានាឱ្យធ្វើការគ្រប់គ្រងសន្និធិជាក់ស្ដែងនៅទីតាំងរបស់អ្នកខ្ចី។ 

អ្នកគ្រប់គ្រងវត្ថុធានា ដកហូតសិទ្ធិគ្រប់គ្រងសន្និធិពីអ្នកខ្ចីតាមរយៈការដាក់សោរខ្លួននៅក្នុងឃ្លាំងនិយបុគ្គលិករបស់ខ្លួនធ្វើការគ្រប់គ្រងចលនាទំនិញចូលនិងចេញពីឃ្លាំងនោះ។ 

អ្នកគ្រប់គ្រងវត្ថុធានាធ្វើការងារឱ្យធនាគារនិងរាយការណ៍ទៅកាន់ធនាគារដោយមានការទទួលស្គាល់ពីវត្ដមានស្រូវនិងអង្ករតាមរយៈការចេញសក្ខីបត្រឃ្លាំង(warehouse receipts)។ 

អ្នកគ្រប់គ្រងវត្ថុធានាក៏ផ្ដល់នូវការធានាលើការបន្ដមានវត្ដមានរបស់ទំនិញទាំងនេះផងដែរ និងមានការទទួលខុសត្រូវចំពោះធនាគារប្រសិនបើនៅក្នុងករណីដែលអនកខ្ចីមិនអាចសងបំណុលបាន ធនាគាររកឃើញថាទំនិញទាំងនោះលែងមានវត្ដមាននៅក្នុងឃ្លាំងទៀត។

ជាគោលការណ៍ ការគ្រប់គ្រងវត្ថុធានាក៏ជាឧបករណ៍ផ្ដល់ហិរញ្ញប្បទានលើសន្និធិល្អជាងគេសម្រាប់រោងម៉ាស៊ីនកិនស្រូវធំៗដោយសារតែវាកាត់បន្ថយចំណាយភ័ស្ដុភារ។ 

បើទោះបីជារោងម៉ាស៊ីនកិនស្រូវនៅកម្ពុជាភាគច្រើនពុំមានឃ្លាំងសម្រាប់ស្ដុកទុកធំៗក៏ដោយមានរោងម៉ាស៊ីនស្រូវខ្នាតធំប្រមាណជា 40 ដែលមានឃ្លាំងបំពាក់បរិក្ខារល្អៗនិងមានសមត្ថភាពស្ដុកទុកស្រូវយ៉ាងហោចណាស់10,000 តោនក្នុងមួយរដូវប្រកបដោយប្រសិទ្ធភាព។ 

ជារួមស្រូវប្រមាណជា400,000 តោនអាចប្រើប្រាស់សម្រាប់ជាវត្ថុធានាដើម្បីទទួលបានហិរញ្ញប្បទានតាមរយៈរោងម៉ាស៊ីនស្រូវធំៗទាំងនេះ។ 

ឃ្លាំងសាធារណៈផ្ដល់សេវាដល់សាធារណជនទូទៅមិនត្រឹមតែចំពោះម្ចាស់រោងម៉ាស៊ីនស្រូវឬឈ្មួញណាម្នាក់នោះទេ។ 

ឃ្លាំងប្រភេទនេះអាចជារបស់និងដំណើរការដោយរដ្ឋាភិបាលឬវិស័យឯកជន។ 

អ្នកគ្រប់គ្រងវត្ថុធានាទើបស្នើសុំការធានារបស់ខ្លួនដោយប្រើប្រាស់ឃ្លាំងសាធារណៈ។
ប្រើប្រាស់ឃ្លាំងដែលមិនត្រូវបានប្រើប្រាស់ដល់ការប្រើប្រាស់ទាំងនោះដើម្បីផ្តល់សេវាស្ដុកទំនិញនិងសេវាផ្ដល់ហិរញ្ញប្បតិបត្តិសាធារណជនទូទៅ។ ការប្រើប្រាស់ឃ្លាំងសាធារណៈអាចធ្វើឱ្យមានការចាប់អារម្មណ៍ចំពោះរោងម៉ាស៊ីនកិនស្រូវនិងឈ្មួញរាប់ពាន់នាក់នៅក្នុងប្រទេសកម្ពុជាដែលមានបំណងប្រើប្រាស់ស្រូវដែលពួកគេស្ដុកទុកធ្វើជាវត្ថុធានាកម្ចីប៉ុន្ដែមានទំហំតូចពេកឬមានឃ្លាំងដែលមិនសមស្របតាមលក្ខណៈបច្ចេកទេសសម្រាប់អ្នកគ្រប់គ្រងវត្ថុធានាដែលមានទំហំតូចពេកឬមានឃ្លាំងដែលមិនសមស្របតាមលក្ខណៈបច្ចេកទេសសម្រាប់អ្នកគ្រប់គ្រងវត្ថុធានា។ រោងម៉ាស៊ីនកិនស្រូវនិងឈ្មួញទាំងនេះត្រូវបង់ថ្លៃសម្រាប់ស្ដុកទុកនិងត្រូវរ៉ាប់រងចំណាយភ័ស្ដុភារបន្ថែមនៅពេលដែលពួកគេត្រូវស្ដុកស្រូវរបស់ខ្លួននៅទីតាំងឆ្ងាយពីកន្លែងធ្លាប់ប្រកបអាជីវកម្មកន្លងមកប៉ុន្ដែចំណាយនេះអាចកាត់កងជាមួយនឹងការបន្ទាប់ចំណាយសម្រាប់ការផ្ដល់ហិរញ្ញប្បតិបត្តិស្រូវដែលត្រូវបានស្ដុកទុកមានឃ្លាំងនៅកំពង់ផែដែលគេស្ដុកទុកអង្ករមួយរយៈពេលខ្លីដើម្បីរង់ចាំការនាំចេញប៉ុន្ដែឃ្លាំងទាំងនេះពុំមានសមត្ថភាពដើម្បីក្លាយជាឃ្លាំងស្រូវឡើយ។ លើសពីនេះស្រូវនិងអង្ករគួរស្ដុកទុកដោយឡែកពីគ្នា។ គេអាចប្រគល់ឃ្លាំងស្រូវឯកជនទៅឱ្យអ្នកគ្រប់គ្រងឯករាជ្យដើម្បីប្រើប្រាស់ឃ្លាំងទាំងនេះធ្វើជាឃ្លាំងសាធារណៈ(នេះអាចជាក្រុមហ៊ុនតែមួយដែលផ្ដល់សេវាគ្រប់គ្រងវត្ថុធានាដែរ)។ អ្នកកាន់ឃ្លាំងគួរចុះកិច្ចព្រមព្រៀងភ្នាក់ងារ (agency agreements)ជាមួយនឹងធនាគារដើម្បីរៀបចំកម្ចីភ្លាម(អាចរកបានក្នុងរយៈពេល១-២ថ្ងៃ)សម្រាប់ស្រូវដែលដាក់នៅក្នុងឃ្លាំងនេះ។ ជម្រើសនេះនឹងអាចមានភ្លាមតែម្ដងហើយទទួលបានជោគជ័យខ្ពស់នៅក្នុងប្រទេសឥណ្ឌា។ ការគ្រប់គ្រងដោយឯករាជ្យគឺមានសារៈសំខាន់សម្រាប់ឃ្លាំងសាធារណៈ។ រោងម៉ាស៊ីនស្រូវដែលមានឃ្លាំងដោយខ្លួនឯងមិនគួរមានអ្វីពាក់ព័ន្ធជាមួយនឹងការគ្រប់គ្រងឃ្លាំងនេះឡើយ។ នៅពេលបំពេញនាទីជាអ្នកសម្របសម្រួលការផ្ដល់ហិរញ្ញប្បតិបត្តិករឃ្លាំងគួរមានភាពស្មោះត្រង់ជាមួយនឹងធនាគារតែមួយគត់។
ការធ្វើឱ្យគ្រប់គ្រាន់គ្រប់ទៅតាមរយៈពេលវែង

ប្រភេទអំពីពេលប្រើប្រាស់នៃប្រព័ន្ធមួយ

ប្រព័ន្ធចាប់ពីរយៈពេលមធ្យម ដល់រយៈពេលវែង ប្រព័ន្ធនេះអាចប្រើប្រាស់សម្រាប់អាយឺម៉ង់មួយចំនួន ដូចជា រឿងកុំព្យូះ និងអំពីការអនុវត្តផ្លូវបំផ្លាញរបស់ប្រទេស។ ស្រុកស្រូវប្រើប្រាស់នេះអាចត្រូវបានមានការគ្រប់គ្រាន់គ្រប់ទៅតាមរយៈពេលវែង។

ប្រព័ន្ធនេះប្រើប្រាស់សម្រាប់អង្ករក្នុងការនាំចេញរហូតដល់ការនាំចេញ។

ប្រទេសកម្ពុជាក៏ត្រូវត្រូវការឃ្លាំងថ្មីព័ន្ធនេះសម្រាប់គោលដៅនៃការនាំចេញអង្ករមួយលានតោន។

ឃ្លាំងនេះត្រូវប្រកួតប្រជែងជាតិជាមួយយើង។ ដើម្បីគ្រប់គ្រាន់សម្រាប់ការនាំចេញអង្ករមួយលានតោន

ក្នុងការជួញដូរឬការផ្តល់ហិរញ្ញបម្រាប់។ ការដោះស្រាយបញ្ហាជាមួយឃ្លាំងតាមរយៈការអនុវត្តប្រព័ន្ធអេឡិចត្រូនិច (warehouse receipt system)។

ឃ្លាំងតូចៗ អាចមានទំនាក់ទំនងជាមួយនឹងឃ្លាំងធំៗ សម្រាប់ការស្ដុកទុករយៈពេលវែង ដែលមានទំនាក់ទំនងជាមួយនឹងឃ្លាំងដែលស្ដុកសម្រាប់នាំចេញនិងសម្រាប់ចែកចាយ។

រោងម៉ាស៊ីនកិនស្រូវ ឈ្មួញ ធនាគារ និងអ្នកផ្សេងទៀត ដែលចាប់អារម្មណ៍ចំពោះការជួញដូរឬការផ្តល់ហិរញ្ញបម្រាប់អង្ករ ឬស្រូវ ត្រូវមានប្រព័ន្ធអេឡិចត្រូនិចដែលផ្ដល់លទ្ធភាពឱ្យមានការធ្វើសកម្មភាពមួយចំនួន ដូចជា ការលក់សក្ខីបត្រឃ្លាំងតាមប្រព័ន្ធអេឡិចត្រូនិច ការចេញថ្លៃលទ្ធកម្រិតអិនរយៈពេលខ្លីលើស្រូវដែលស្ដុកទុក។

ចប់ពីរយៈពេលមធ្យម ដល់រយៈពេលវែង ប្រព័ន្ធនេះអាចមានការគ្រប់គ្រាន់ទៅតាមរយៈពេលវែងដ៏លើស្រូវដែលស្ដុកទុក ដើម្បីដើម្បីមានប្រព័ន្ធអេឡិចត្រូនិចដែលផ្ដល់លទ្ធភាពឱ្យមានការធ្វើសកម្មភាពមួយចំនួន ប្រព័ន្ធអេឡិចត្រូនិចក្នុងការជួញដូរឬការផ្តល់ហិរញ្ញបម្រាប់។

ជាហេដែលជាតិប្រើប្រាស់របស់យើង មានកម្រិតបំផ្លាញមួយចំនួន ដើម្បីដើម្បីយើងឯកសារនូវការមានទំនិញផ្តល់ហិរញ្ញបម្រាប់អង្ករ ឬស្រូវ ត្រូវមានប្រព័ន្ធអេឡិចត្រូនិចដែលផ្ដល់លទ្ធភាពឱ្យមានការធ្វើសកម្មភាពមួយចំនួន ដូចជា ការលក់សក្ខីបត្រឃ្លាំងតាមប្រព័ន្ធអេឡិចត្រូនិច ការចេញថ្លៃលទ្ធកម្រិតអិនរយៈពេលខ្លីលើស្រូវដែលស្ដុកទុក ។
ការផ្ដល់ហិរញ្ញប្បទានដោយប្រើប្រាស់សក្ខីបត្រឃ្លាំងជាវតថុធានា (Warehouse receipts finance) ត្រូវបានរកឃើញថាមានសុវត្ថិភាពជាងការផ្ដល់ហិរញ្ញប្បទានក្នុងទម្រង់ផ្សេងទៀត។ ជាមួយនឹងហានិភ័យនៃការពុំមានលទ្ធភាពសងតិចតួចនិងលទ្ធភាពប្រមូលទ្រព្យសម្បត្ដិមកវិញខ្ពស់នៅក្នុងករណីមិនអាចសងបាន ធនាគារគួរសុខចិត្ដផ្ដល់កម្ចីក្នុងអត្រាការប្រាក់ទាប។ ប្រព័ន្ធជួញដូរសក្ខីបត្រតាមប្រព័ន្ធអេឡិចត្រូនិច (EWRS) ដែលមានប្រសិទ្ធភាពអាចផ្ដល់នូវឱកាសថ្មីៗដល់ឈ្មួញអង្កររោងម៉ាស៊ីនកិនស្រូវនិងអ្នកនាំចេញ។ ឱកាសទាំងនេះមិនត្រូវតែនាំឱ្យសង្វាក់ផ្គត់ផ្គង់អង្ករកាន់តែទន់ភ្លន់និងប្រសិទ្ធភាពប៉ុណ្ណោះទេប៉ុន្ដែថែមទាំងបង្កើតនូវគុណតម្លៃពិតប្រាកដនិងផ្ដល់ឱកាសទទួលបានប្រាក់ចំណេញដល់អ្នកដែលអាចប្រើប្រាស់ប្រព័ន្ធEWRSទៀតផង។ ដូច្នេះការអនុវត្ដប្រព័ន្ធEWRSដែលល្អអមជាអាក្សររៀបរាប់ខាងលើមានសារៈសំខាន់ដើម្បីឱ្យប្រព័ន្ធសក្ខីបត្រឃ្លាំងនេះអាចទទួលបានការពេញនិយមក្នុងចំណោមតួអង្គនៅក្នុងវិស័យស្រូវអង្ករនិងអ្នកផ្ដល់ហិរញ្ញប្បទាន។ ក្រុមនីមួយៗដោយឡែកៗពីគ្នាអាចប្រើប្រាស់ប្រព័ន្ធEWRSរៀងខ្លួនប៉ុន្ដែឱកាសនឹងមានកាន់តែច្រើនប្រសិនបើមានវេទិកាអេឡិចត្រូនិចមួយសម្រាប់រាល់សក្ខីបត្រឃ្លាំងទាំងអស់នៅក្នុងប្រទេសកម្ពុជាដែលដំណើរការដោយក្រុមហ៊ុនឯករាជ្យមួយ។ រដ្ឋាភិបាលមានតួនាទីយ៉ាងសំខាន់ដែលត្រូវបំពេញនៅក្នុងការបង្កើតនូវបរិយាកាសអំណោយផលមួយសម្រាប់ប្រព័ន្ធសក្ខីបត្រឃ្លាំងនេះ។ ជំហានសំខាន់ទីមួយដែលត្រូវអនុវត្ដគឺការលុបចោលនូវភាពមិនស៊ីសង្វាក់គ្នានៅក្នុងច្បាប់ស្ដីពីប្រតិបត្ដិការដែលមានការធានានិងក្រមរដ្ឋ-ប្បវេណីស្ដីពីការប្រើប្រាស់ចលនទ្រព្យនៅក្នុងករណីដែលមិនមានលទ្ធភាពសង។ ជំហានផ្សេងទៀតរួមមានការកែលំអបញ្ចូលបែបផ្ដួចផ្ដើមជាមុនអាចធ្វើឡើងសាកល្បងសិនមុននឹងពង្រីកទូទាំងប្រទេស។ ការចៀសវាងមិនផ្ដល់ឧបត្ថម្ភធនខាងឥណទាន
បច្ចេកវិទ្យានិងការវិនិយោគលេខ១០

ការសាងសង់ឃ្លាំងទៅតាមការផ្គត់ផ្គង់ក៏ជាជំហានដ៏សំខាន់មួយដែលរដ្ឋាភិបាលត្រូវអនុវត្ដផងដែរ។

ជម្រើសគោលនយោបាយសម្រាប់រដ្ឋាភិបាលតារាងខាងក្រោមបង្ហាញពីលំដាប់លំដោយដែលអាចមានរបស់សកម្មភាពផ្សេងៗនិងតួនាទីគាំទ្រដែលរដ្ឋាភិបាលអាចបំពេញ។

ជំហានទី១៖ ការលុបចោលនូវភាពមិនស៊ីសង្វាក់និងភាពមិនប្រាកដប្រជាក្នុងការបកស្រាយសនិទានកម្ម៖ ការផ្ដល់ហិរញ្ញប្បទានដោយប្រើប្រាស់សក្ខីបត្រឃ្លាំងអាចអនុវត្ដក្របខ័ណ្ឌច្បាប់ស្ដីពីប្រតិបត្ដិការមានការធានាដែលកំពុងចូលជាធរមាន។ ប៉ុន្ដែប្បញ្ញត្ដិនៃច្បាប់ស្ដីពីប្រតិបត្ដិការដែលមានការធានានេះចាំបាច់ត្រូវតែមានការបញ្ផាក់ឱ្យបានច្បាស់ធៀបជាមួយនឹងក្រមរដ្ឋប្បវេណី។

ផ្នែកបញ្ហា សកម្មភាពដែលត្រូវបានលើកឡើងជាអនុសាសន៍ទីភ្នាក់ងារដែលទួលខុសត្រូវក្របខ័ណ្ឌចបាប់មានប្បញ្ញត្ដិដែលមិនស៊ីសង្វាក់គ្នារវាងច្បាប់ស្ដីពីប្រតិបត្ដិការដែលមានការធានានិងក្រមរដ្ឋប្បវេណីដែលនាំឱ្យមានការព្រួយបារម្ភថាតើច្បាប់ណាដែលត្រូវយកមកអនុវត្ដនៅក្នុងករណីដែលមានវិវាទកើតឡើង។ ភាពមិនប្រាកដប្រជាក្នុងនេះចាំបាច់ត្រូវតែដោះស្រាយ។

ពិនិត្យឡើងវិញលើច្បាប់ពាក់ព័ន្ធធ្វើការងារជាមួយនឹងស្ថាប័នរដ្ឋាភិបាលពាក់ព័ន្ធដើម្បីដោះស្រាយបញ្ហាដែលបានរកឃើញ។ បង្កើនការយល់ដឹងអំពីច្បាប់នេះ។

គណៈកម្មាធិការនៃករសួងសេដ្ឋកិច្ចនិងហិរញ្ញវត្ថុ/ក្រសួងយុត្ដិធម៌ដែលទទួលបន្ទុករៀបចំចបាប់ស្ដីពីប្រតិបត្ដិការដែលមានការធានាដោយមានការគាំទ្រពីIFC(កំពុងបន្ដមាន)និងADB។

* សំបូរukan* និងការសាងសង់ឃ្លាំងទៅតាមការផ្គត់ផ្គង់
ការគ្រប់គ្រងវត្ថុធានា ដែលអាចមានភាពទាក់ទាញចំពោះរោងម៉ាស៊ីនកិនស្រូវធំៗជាងគេ ប្រហែលពី 30-40 អាចអនុវត្ដសាកល្បងសិន (ដោយរាប់បញ្ចូលទាំងករណីដែលរោងម៉ាស៊ីនកិនស្រូវមានបំណងបម្លែងឃ្លាំងរបស់ខ្លួនឱ្យទៅជាឃ្លាំងសាធារណៈផង)។

ការសាល្បងនេះអាចជាគម្រោងរបស់ក្រុមហ៊ុនឯកជនដែលមានការសហការគ្នារវាងរោងម៉ាស៊ីនកិនស្រូវ ធនាគារនិងក្រុមហ៊ុនគ្រប់គ្រងវត្ថុធានា ប៉ុន្ដែមានកិច្ចការដែលរដ្ឋាភិបាលអាចធ្វើបានដើម្បីគាំទ្រដល់គម្រោងបែបនេះដូចសង្ខេបខាងក្រោម។

**បញ្ហាដ៏សកម្មភាពដែលត្រូវបានលើកឡើងជាអនុសាសន៍ទីភ្នាក់ងារដែលទទួលខុសត្រូវបញ្ផីវត្ថុធាន**

- បញ្ជាក់ថាសម្រាប់ “ការិយាល័យឯកសារ” ប្រព័ន្ធនេះត្រូវបានបង្កើតនៅឆ្នាំ 2007 និងគ្រប់គ្រងដោយក្រសួងពាណិជ្ជកម្ម។
- ចាប់តាំងពីពេលនោះមកហាក់បីដូចជារៀនមានការចូលរួមពីអ្នកពាក់ព័ន្ធរយល់ដឹងជាសាធារណៈឬសកម្មភាពកសាងសមត្ថភាពពាក់ព័ន្ធនឹងបញ្ផីនេះឡើយ។
- ស្ថានភាពបែបនេះចាំបាច់ត្រូវតែធ្វើការកែតម្រូវ។
- លើសពីនេះដើម្បីឱ្យបញ្ផីវត្ថុធាននេះមានវាយតម្លៃលើ “ការិយាល័យឯកសារ” បច្ចុប្បន្ន -បញ្ចូលប្រព័ន្ធនេះបង្កើតគំរូសម្រាប់ទាញយកឯកសារមកវិញនៅពេលដែលមានការបាត់បង់ (disaster recovery model) -បង្កើនការយល់ដឹងនិងជម្រើសបញ្ចើតបញ្ផីសក្ខីបត្រឃ្លាំងតាមប្រព័ន្ធដែលអេឡិចត្រូនិចបង្កើនការយល់ដឹងនិងជម្រើសបញ្ចើតបញ្ផីសក្ខីបត្រឃ្លាំងតាមប្រព័ន្ធដែលអេឡិចត្រូនិច ក្រសួងពាណិជ្ជកម្ម ដោយមានការគាំទ្រពី IFC
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| សមត្ថភាពនិងការយល់ដឹង          | របស់អ្នកផ្ដល់កម្ចី          |
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| និងចលនទ្រព្យជាវត្ថុធានា          | សាធារណជន          |
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| និងសិក្ខាសាលានានា          | ពីIFC          |

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សេចក្តីរួម កំពុងសម្របសម្រុងការប្រការរបស់ក្រុមបរិស័ព្យនេះ:

| សម្រាប់ការផ្សព្វផ្សាយពីសេវាឃ្លាំងសាធារណៈ | សនិទានកម្មដែលនេះអាចជាការបោះជំហានចេញពីគម្រោងសាកល្បងទៅជាគម្រោងផ្ដល់ហិរញ្ញប្បទានដោយប្រើប្រាស់សក្ខីបត្រឃ្លាំងជាវត្ថុធានានៅទូទាំងប្រទេសដែលចាំបាច់ត្រូវតែមាននៅក្នុងរយៈពេលវែង។ បន្ថែមពីលើសកម្មភាពដែលត្រូវបានលើកឡើងខាងលើការផ្សព្វផ្សាយពីសេវាឃ្លាំងសាធារណៈតម្រូវឱ្យរដ្ឋាភិបាលអនុវត្ដសកម្មភាពដូចខាងក្រោម៖

| បញ្ហា | សកម្មភាពដែលត្រូវបានលើកឡើងជាការបោះជំហាន | ការផ្គត់ផ្គង់ឥណទានធនាគារនៅកម្ពុជាមានសន្ទនីយភាពប៉ុន្តែអតិថិជនមិនខ្ចីច្រើនឡើយដោយសារតែអត្រាការប្រាក់ខ្ពស់និងជម្រើសវត្ថុធានានៅមានកម្រិត។ មានហានិភ័យមួយត្រង់ថាជាសម្រាប់គម្រោងសក្ខីបត្រឃ្លាំងនឹងត្រូវបានផ្ដល់នូវឧបត្ថម្ភធន។

- កែលំអបរិយាកាសធុរកិចចដែលនឹងនាំឱ្យអត្រាការប្រាក់ថយចុះទាបជាងមុន
- ពង្រីកជម្រើសវត្ថុនា(ឧ.ទៅប្រើប្រាស់ចលនទ្រព្យវិញ)
- ចៀសវាងមិនឧបត្ថម្ភអត្រាការប្រាក់ឬផ្ដល់កម្ចីបែបសម្បទានរដ្ឋាភិបាលកម្ពុជា

<p>| សេចក្តីយាង | ស្រុកស្នូរសារបែបសម្បត្តិ | ស្ការសំខាន់អោយទាក់ទង | ស្រុកស្នូរសារបែបសម្បត្តិ |
| សម្រាប់ការផ្សព្វផ្សាយពីសេវាឃ្លាំងសាធារណៈ | សនិទានកម្ម | សកម្មភាព |
| សម្រាប់ការផ្សព្វផ្សាយពីសេវាឃ្លាំងសាធារណៈ | សនិទានកម្ម | សកម្មភាព |</p>
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**រដ្ឋាភិបាល**

រដ្ឋាភិបាល

**ការសារពត៌ប្រែដោយ**

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**ក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ**

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ការពឹងអាស្រ័យលើអ្នកគ្រប់គ្រងវត្ថុធានាអន្ដរជាតិគឺជាលទ្ធភាពមួយ។ មានក្រុមហ៊ុនអន្ដរជាតិចំនួនពីរដែលបានបើកការិយាល័យរបស់ខ្លួននៅក្នុងប្រទេសកម្ពុជារួចទៅហើយដើម្បីផ្ដល់សេវាក្នុងសេវាខ្មែរ។ បច្ចុប្បន្ននេះក្រុមហ៊ុនទាំងពីរផ្ដោតលើសេវាជាអំពីការនូវវត្ថុធានានេះ។

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ការពឹងអាស្រ័យលើអ្នកគ្រប់គ្រងវត្ថុធានាអន្ដរជាតិអាចនាំមកនូវជំនាញឯកទេសនិងសហ្វ្រូវបានដ៏សំខាន់និងធនាគារិកអាចការតែងគោលនយោបាយក្នុងជួររដ្ឋាភិបាលនិងអ្នកធ្វើសេចក្ដីសម្រេចចិត្ដក្នុងវិស័យអង្ករដើម្បីសម្រេចនូវជម្រើសផ្សេងៗទាំងនេះ។

ក្រុមហ៊ុនអន្ដរជាតិដែលបានបើកការិយាល័យរបស់ខ្លួននៅក្នុងប្រទេសកម្ពុជារួចទៅហើយដើម្បីផ្ដល់សេវាអន្ដរជាតិ។

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ធនាគារនៅកម្ពុជា ដែលនឹងក្លាយជាអ្នកទទួលផលសំខាន់ៗប្រសិនបើពួកគេអាចផ្ដល់កម្ចីកាន់តែងាយស្រួលដល់វិស័យស្រូវអង្ករអាចចាប់អារម្មណ៍ចំពោះគំនិតផ្ដួចផ្ដើមនេះដោយដាក់ទុនមូលធនដំបូង(ដែលមិនចាំបាច់មានចំនួនច្រើន)ដើម្បីបង្កើតនូវក្រុមហ៊ុនចូលហ៊ុនគ្នាបែបនេះ។

អត្ថប្រយោជន៍ដែលអាចទទួលបានតាមរយៈការផ្ដល់ហិរញ្ញប្បទានមូលធនសម្រាប់ប្រតិបត្ដិការបន្ថែមដល់វិស័យស្រូវអង្ករមានទំហំធំគ្រប់គ្រាន់ដើម្បីឱ្យអ្នកដែលចូលរួមក្នុងគំនិតផ្ដួចផ្ដើមនេះទទួលបានប្រាក់ចំណេញគ្រប់គ្រាន់ដើម្បីកសាងនូវហេដ្ឋារចនាសម្ព័ន្ធស្ថាប័នដែលចាំបាច់របស់ខ្លួនសូម្បីតែនៅក្នុងរយៈពេលខលី។

ខណៈពេលដែលសកម្មភាពជាច្រើនក្នុងចំណោមសកម្មភាពចាំបាច់ទាំងនេះទំនងជានឹងត្រូវធ្វើឡើងដោយវិស័យឯកជនការគាំទ្រពីរដ្ឋាភិបាលដូចជាក្នុងការរៀបចំយុទ្ធសាស្ត្រនិងសម្របសម្រួលកិច្ចខិតខំប្រឹងប្រែងនានា។

នេះនឹងបង្កើតនូវប្រព័ន្ធលិយិៃមួយដែលអាចជួយសម្រេចបំណងប្រាថ្នារបស់រដ្ឋាភិបាលសម្រាប់វិស័យស្រូវអង្ករនិងដាក់ចេញនូវមូលដ្ឋានដើម្បីសម្រេចនូវកំណើនកាន់តែមាននិរន្ដរភាពនិងតុល្យភាពបន្ថែមទៀត។
Executive Summary

Increasing Cambodia’s rice export requires better access to financing suitable for agriculture

Rice production accounts for some 15 per cent of Cambodia’s agricultural gross domestic product (GDP). Rice production, processing and marketing is estimated to employ a fifth of the country’s population of 15 million.

The Government of Cambodia has set a goal to export 1 million tons of milled rice by 2015. Although exports of milled rice have grown from 50,000 tons in 2010 to 372,000 tons in 2013, the export target remains too ambitious. Cambodia’s rice exports are expected to exceed this number in the longer term.

Most of Cambodia’s rice exports are in the form of paddy, traded informally to Vietnam and Thailand. If these paddy export flows could be captured for local milling and exported in the form of rice, it would be enough to reach the goal of 1 million tons. This would require a rapid expansion of capacity for processing, storing and transporting rice. Unfortunately, the available capital for doing so is severely constrained.

The main bottleneck for growing exports is poor access to external working capital. Most of the rice millers are short of working capital and are forced to use their long-term assets (land, buildings and equipment) to secure short-term loans for working capital needs. This hampers miller’s ability to raise long-term funds for upgrading their storage and production capacity.

The paddy and rice stocks are not used as collateral for working capital loans. Rice is a seasonal crop, which has to be stored over a prolonged period of time. If these large physical rice stocks and paddy rice could be used as a collateral, it would help to align working capital loans with the actual needs of the milling sector (every ton bought and stored would unlock further loans to buy and store more). It would also free up fixed assets to underwrite medium and long term investment loans.

Cambodia is well positioned to introduce crop collateral based financing

The Cambodia’s agribusiness sector is potentially attractive to the commercial banks because its size and stability. Producing one million tons of milled rice may require as much as US$300 million in working capital finance. Working capital finance is also needed for the domestic rice production, processing and marketing. In

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3 An Asian Development Bank presentation states that the aspiration should be that “Cambodia will export, at least, 5 million tons of milled rice by 2030”, on the back of a paddy production of 15 million tons (http://www.adbi.org/files/2013.02.22.cpp.day5.ses3.1.final.policy.options.cambodia.pdf).
addition, the agribusiness sector has proven to be robust and shown steady growth while other large sectors like real estate, tourism and garment exports stumbled post the 2008 global financial crisis before recovering again. Many banks have thus been looking at ways to increase their presence in agribusiness, and the rice sector has become a prime target.

**Rice production is fairly concentrated.** Four of the country’s 24 provinces contribute almost half of the Cambodia’s total rice production. In principle, this permits financiers to get access to large paddy stocks without having to cover too large geographical region.

**The produced rice is far from uniformed but it is categorized and valued against reference prices.** Rice millers and traders categorize rice into three varieties (fragrant, mixed and white) and price each variety at a discount or premium to a reference price. Thus, for bankers who wish to finance against rice inventory, there is a reference price against which to determine the value of that rice.

**The rice mills are potential clients for the banks** as they maintain large inventories, have an incentive not just to ensure that they have enough raw materials to keep their mills operating the longest time possible, but also, to meet client demands for specific kinds of white rice.

**Farmers hold stocks, which in principle could be financed through community rice banks.** International experience shows, however, that it is remarkably difficult to create successful and commercially oriented commodity cereal banks. Direct financing of exporters (by introducing a factoring scheme) so they would get immediate finance against export receivables, is possible and desirable, but would bring only very limited extra funding (worth a few weeks of rice exports) to the sector.

**Expanding financing for the mills will lead to improved financing for the whole rice sector.** Rice millers can act as financiers both upstream (pre-financing traders and at times, even providing inputs on credit to farmers) and downstream (selling on credit to wholesalers and exporters, permitting the latter to sell on deferred payment terms to international buyers). Alternative ways to boost working capital in the sector show much less potential.

**Possible risks of adopting crop collateral**

**Financing mills is not without risk because paddy prices and rice prices are volatile.** It is often assumed that the lowest price levels for paddy will be reached immediately after harvest, when many farmers are in a hurry to sell, and climb back up couple of months after harvest. This is not necessarily the case, because paddy prices can continue falling long after the harvest while prices in the global rice market are shrinking. Rice prices in Cambodia are strongly influenced by international market conditions. This means that an inventory, financed by a bank, could turn out to be less worthy then initially thought.
Rice milling is a competitive industry and profit margins are not large. There have been many bankruptcies in the past, and the volatility of milling margins shows that the future experience is unlikely to be any different. Contracts in the sector are not always honoured, exposing mills and banks that finance them to the risk of unpaid bills or paddy/rice that needs to find a new buyer – probably at a loss.

Increasingly stringent sanitary and phyto-sanitary conditions in importing countries add to the risk. An exporter may suddenly find that his cargo is refused entry into the country of his buyer.

Banks need to create a proper legal and contractual structure to ensure the use of paddy and rice inventory as effective collateral. Compared to other forms of collateral such as land, real estate or equipment, paddy or rice are actually easier for a bank to seize in case of a borrower’s default, and can be sold more rapidly and at a more readily predictable price. The overall size of the market makes it worthwhile for Cambodian banks to develop expertise in the rice sector.

Collateral management and the use of public warehouses can create effective loan collateral

Developing inventory finance as a prime working capital tool can therefore be of great benefit to the Cambodian rice sector. It will free up capital for the needed long-term investments that will boost Cambodia’s position as a competitive rice exporter. At the same time, it will lead to less of a mismatch between working capital needs and credit availability.

Collateral management is a proven mechanism to create effective collateral. In collateral management, the bank engages a third party, called a collateral manager to take physical control over the inventory in a borrower’s premises. The collateral manager effectively removes control over the stock from the borrower, by putting his own lock on the warehouse and engaging his own staff to control the movement of goods into and out of the warehouse. The collateral manager will also exercise quality control over the goods in store, and measure the quality and quantity of the paddy entering the warehouse. The collateral manager works for and reports to the bank, with the presence of paddy and rice acknowledged through the issuance of warehouse receipts. He also provides assurance over the continued presence of the commodities, and is liable to the bank if, in the case of a borrower default, the bank finds that the commodities are no longer present.

Collateral management is in principle the best inventory finance tool for large rice mills as it minimizes their logistics costs. Although a majority of Cambodia’s mills don’t have storage facilities, there are around 40 large-scale modern mills, which have well-equipped warehouses and capacity to safely store at least 10,000 tons of paddy per season. Collectively, ca 400,000 tons of paddy rice can be financed through these large mills.

A public warehouse offers its services to the public at large, not just to one miller or trader. It could be owned and operated by either the government or the private
sector. Collateral managers may branch out from field warehousing to public warehousing, taking control over underutilized warehouses and opening them up for storage and financing services to the public.

**Using a public warehouse could be of interest to the many thousands of mills and traders in Cambodia** who wish to use their paddy stocks as loan collateral but are too small or have warehouses that are technically unsuited for collateral managers. They would have to pay storage costs and face extra logistics costs by storing their paddy in a location away from their traditional place of business, but this can be compensated by lower financing costs and the ability to do larger volumes because paddy, once stored, can be immediately refinanced.

**In Cambodia, there are currently no public warehouses for paddy storage.** There are port warehouses where rice is stored for short periods awaiting exports, but these do not have the capacity to become paddy warehouses. Moreover, paddy and rice should be stored separately.

**Private paddy warehouses can be turned over to an independent manager in order to use them as public warehouses** (this could be the same company providing the collateral management services). The warehouse operator should sign agency agreements with banks to arrange immediate loans (available within 1-2 days) for any paddy deposited into the warehouse. This option would be immediately available and is proven to be very successful in India.

**Independent management is critical for public warehouses.** The mill that owns the warehouse should have absolutely nothing to do with its management. When acting as a facilitator of financing, the warehouse operator should be solely loyal to the bank.

**In the medium to long turn, the government might consider promoting of an integrated warehousing system** to serve the entire rice value chain, from production to exports. The country needs new warehouses in order to achieve the export goal of 1 million tons of milled rice. It would be preferable if these warehouses were built as part of an integrated network of public warehouses rather than as private warehouses that are attached to mills but isolated from the larger logistics system.

**Integrated warehouses should be linked through common standards and a common electronic warehouse receipt system.** Feeder warehouses could be linked to large warehouses for longer-term storage, which, in turn, are linked to export and distribution warehouses. Mills, traders, banks and others interested in trading or financing rice or paddy will have access to an electronic system that will permit such things as the electronic sale of warehouse receipts, procurement tenders, forward contracts, even demands for short-term financing of paddy stocks.

**Warehouses could be built and managed as Public-Private Partnership schemes,** together with improved transport facilities along Cambodia’s chief waterways. Port authorities, and others active in warehousing in export ports, could be a nodal part in such a system. Setting up a management structure that makes a warehouse a suitable financing tool for a bank has a cost, a largely fixed one, hence the need to use sufficiently large warehouses.
Warehouse receipts finance has proven safer than other forms of finance. With less default risk and a higher likelihood of recovering assets in the event of a default, the banks should be willing to lend at reduced rates.

Efficient electronic warehouse receipt trading system (EWRS) unlocks many new opportunities for rice traders, millers and exporters. Opportunities that not only lead to a more nimble and more efficient rice value chain but also create real value and thus profit opportunities for those with access to the EWRS. Thus, accompanying any of the previous options with a good EWRS is critical for making the warehouse receipts system popular among rice sector participants and financiers. Each separate venture could operate its own EWRS, but more opportunities would be unlocked if there is a common electronic platform for all warehouse receipts in the country, operated by an independent firm.

The Government has an important role to play in creating conducive environment for warehouse receipt system. The important first step to take is to remove discrepancies in the Secured Transaction Law and the Civil Code on the access to movable assets in case of default. Other steps include an improvement of the collateral registry, strengthening of the lenders’ capacity and awareness, and providing insurance guarantees for the warehouse receipt system. Proactive support can be given to a pilot before moving to the nationwide scale-up. Avoiding the credit subsidization and supply-driven investments in construction of warehouses is also an important step for the Government to take.

**Policy options for the Government**

Below table presents possible sequencing of the various actions and the supporting role that the Government can play.

<table>
<thead>
<tr>
<th>STEP 1: REMOVE DISCREPANCIES IN LAW AND UNCERTAINTIES ABOUT INTERPRETATION</th>
</tr>
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<tbody>
<tr>
<td><strong>Rationale:</strong> Warehouse receipt financing can be implemented under the existing Secured Transactions Law. However, the provisions of this Secured Transaction Law need to be clarified vis-à-vis the Civil Code.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Areas</th>
<th>Issues</th>
<th>Recommended actions</th>
<th>Responsible agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal Framework</td>
<td>There are conflicting provisions between the Secured Transactions (ST) Law and the Civil Code, and thus concerns about what will prevail in case of a conflict. This uncertainty needs to be resolved.</td>
<td>Review relevant laws; work with relevant government agencies to address the issues identified; raise awareness about the law.</td>
<td>MEFF/MoC/Ministry of Justice Committee on the Law on Secured Transactions, with support from IFC (already ongoing) and ADB.</td>
</tr>
</tbody>
</table>
**STEP 2: IMPLEMENT A DEMONSTRATION PROJECT**

**Rationale:** Collateral management, which may be attractive for the about 30-40 largest rice mills, can be tested (including in cases where the mill wishes to convert his warehouse into a public warehouse). The pilot would be a private business project between millers, banks, and collateral managers, but there are some things the government can do to support such projects, as summarized below.

<table>
<thead>
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<th>Areas</th>
<th>Issues</th>
<th>Recommended actions</th>
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</table>
| Collateral          | A collateral registry system (Filing Office) was created in 2007 and administered by the Ministry of Commerce (MoC). Since then, there has been virtually no stakeholder engagement, public awareness or capacity building activities on the Registry. This situation needs to be corrected. Furthermore, to make the Collateral Registry fully useful for commodity finance, a dedicated module needs to be created that permits the creation, transfer, trading and pledging of standardized electronic warehouse receipts. | - Assess of the current “Filing Office”  
- Enhance the system  
- Build disaster recovery model  
- Develop business plan  
- Train operational staff to ensure effective operation of the system  
- Raise awareness and promoting the usage of the system  
- Study options for Electronic Warehouse Receipt Registry, and support the WR software incorporation into the general registry.                                                                                                                          | MoC, with IFC support                     |
| registry             |                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                  |                                          |
| Lenders capacity     | WRs and movables financing are still relatively new concepts in Cambodia. Interviews with leading banks reveal a serious lack of knowledge on movables lending and a lack of capacity on "how to" establish such a practice.                                                                                   | - Build capacity of lenders through training, workshops, and seminars  
- Raise awareness among SMEs and the public  
- Provide advisory services to selected banks to develop and roll out movables lending products                                                                                                                                                                                                               | MEFF and MOC, with IFC support            |
| and awareness        |                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                  |                                          |
## STEP 3: PROMOTION OF PUBLIC WAREHOUSING

**Rationale:** This would be a move from pilot WR finance projects to nation-wide WR finance, which will need to happen in the longer run. In addition to the actions laid out above, the promotion of public warehousing requires the following government actions:

<table>
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<th>Areas</th>
<th>Issues</th>
<th>Recommended actions</th>
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</table>
| **Supply of credit**         | Cambodian banks have liquidity but clients do not borrow much due to high interest rates and limited collateral options. There is a risk that through government intervention, credit to agriculture and agribusiness, in particular for WRs projects, will be subsidized. | - Improve the business environment that would lead to lower interest rates  
- Expand options for collateral (i.e. to movable assets)  
- Avoid subsidizing interest rates or providing concessional loans                                                                 | Government of Cambodia                                                                  |
| **Physical warehouse infrastructure** | There are many modern warehouses in Cambodia, of which some can be converted into ‘public’ warehouses for WRs. Large supply-driven investments in warehouses would seriously undermine competitiveness of existing businesses. | - Assess the current status of the existing warehousing capacity  
- If funds are available from external partners, open up tenders for private sector to build warehouses (using concessional credit line) based on business needs  
- Do not create a state-owned warehousing company  
- Do not ban export of paddy in order to fill excess warehouses                                                                 | MEFF                                                                                      |
| **Indemnity fund**           | An Indemnity Fund is to provide insurance to indemnify depositors or their financiers for losses incurred due to the warehouses’ failure to meet obligations. It adds to but does not substitute other risk management mechanisms. | - Assess options for the creation of the Indemnity Fund                                                                                              | Rice sector, collectively, needs to decide on desirability. If positive, MEFF can support its implementation. |
A refinancing facility for warehouse financing will permit the refinancing of bank warehouse receipt loans. This allows banks to gain much greater capital efficiency in generating warehouse receipt loans.

- Option 1: explore the interest of NCB to include warehouse receipt loans in the list of loans eligible for refinancing, and start refinancing operations.
- Option 2: establish, with contributions from interested parties, a fund that invests in warehouse receipt loans.

Option 1: NBC to explore and decide.
Option 2: MEFF to explore and decide.

Much training is needed in order to build awareness and technical skills among bankers, government policy makers and rice sector decision-makers to realize these various options. The government can also consider the creation of a dedicated discount window or a refinancing facility, which would permit warehouse receipt loans to become liquid instruments. However, critical to the success would be the emergence of at least one collateral management firm in Cambodia which can bring at an affordable cost the skills needed to secure crop collateral, so that banks can feel safe in financing paddy and rice stocks.

Relying on international collateral managers is one possibility. There are two international companies opened their offices in Cambodia already who provide collateral management services. For the time being, they have been focused on inspection and certification services. Other companies will possibly be attracted by the start of a pilot scheme.

The creation of a Cambodian joint venture with a international collateral manager, who can bring expertise and software, is another possibility. Cambodia’s banks, which will be among the main beneficiaries if they can lend more easily to the rice sector, may well take the initiative in putting up the initial equity (which would not need to be very large) for creating such joint venture.

The potential benefits of providing more working capital finance to the rice sector are large enough to promise profits to those who take the initiative to build its necessary institutional infrastructure even in the short run. While many of the required activities are most likely undertaken by the private sector, support from the government, including in conceptualizing strategies and coordinating efforts, will help much in realizing the possibilities outlined before. This will create a financing system that can measure up to the government’s aspirations for its rice sector, and lay the foundation for a more sustainable and balanced growth.
1. Introduction

1. Rice production accounts for some 15 per cent of Cambodia’s agricultural GDP. Rice production, processing and marketing is estimated to employ a fifth of the country’s population of 15 million. Production is much in excess of local consumption needs, and most of the difference is exported as paddy to neighboring countries through informal trade rather than milled locally and exported as rice. According to rice sector sources, paddy exports to Vietnam reached more than 2 million tons in 2013, and paddy exports to Thailand around 400,000 tons (in total, this is equivalent to around 1.5 million ton of milled rice); in addition, an estimated 300,000 tons of milled rice were informally exported to Thailand.

2. In August 2010, the Government presented a new policy for the “Promotion of Paddy Rice Production and Rice Export” aimed at improving the efficiency of Cambodia’s rice value chain and keeping a larger share of value added in-country, with a target of 1 million tons of milled rice exports by 2015. There has been progress (the official exports of milled rice reached 372,000 tons in 2013, up from 50,000 tons in 2010), but limited access to finance continues as a key hindrance for meeting this objective.

3. While following recent investments there is now the capacity to mill much of this paddy in Cambodia, rice farmers, traders and millers do not have the capital to retain and process most of it in the country. Intensive rice production requires relatively large cash outlays from farmers for seeds and inputs; and the resulting harvests need to be stored for a long time to enable millers to make optimal use of their processing equipment. If there is insufficient funding, farmers will use homgrown seeds and less inputs than they should, reducing their production; and millers will not be able to buy all the paddy they need after harvest, leading on the one hand to sub-optimal processing operations, and on the other hand, a leakage of paddy to buyers from neighboring countries who have better access to cash.

4. Currently, there is too little working capital in the rice milling sector (similar constraints have been reported in other agricultural processing sectors, such as cassava). Most mills use their land, buildings and equipment (i.e., long-term assets) to secure loans, which they use for short-term working capital needs. These loans tend to fall far short of their actual working capital needs, and furthermore, using long-term assets for working capital needs reduces millers’ ability to upgrade their storage.

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4 Siphana, 2010b.

5 There are also small informal imports from Thailand, of aromatic rice with a high percentage of brokens.

6 The Supreme National Economic Council, 2010, estimates that reducing paddy exports from 4 to 2.5 million while increasing rice exports to 1 million tons by 2015 will create an added value of US$ 110 million, of which US$ 98 for millers and processing workers and US$ 12 million for government income. This implies that public investments of up to US$ 200 million (which equals the discounted future value of additional government income) to achieve this objective are justified.
and production capacity (and thus, invest in the needed expansion of rice export capacity).

5. Recognizing this bottleneck, the government has taken a number of steps to encourage more commercial bank lending to rice mills. It has launched the IFC/IDA Risk Share Facility and is currently preparing a partial credit guarantee scheme, which is targeted at providing more commercial bank working capital financing for rice mills. It is also considering other institutional arrangements to strengthen linkages in the value-chain. Specifically, the Government is considering options for financing and storage of paddy in key rice production areas and has requested World Bank assistance to carry out a feasibility study on these options.

6. In response, the World Bank launched a Study on Access to Financial Services by Small- and Medium-Sized Agribusiness Enterprises in Cambodia in April 2011. The study identified and analysed broad constraints to agricultural finance in Cambodia, and also identified potential mitigants. Inter alia, it recognized financial instruments, which allow farmers and millers access financing by using their crop/product collateral as one of the key priorities for Cambodia rice sector development. Following this work, the World Bank Group, with the financial support from the Australian Aid, carried out the review of the potential options and constraints for the development of crop collateral based financing in Cambodia in 2012. The study identified the following three options for the development of crop collateral based financing systems in Cambodia: (A) Collateral Management; (B) Public Warehousing – the Upcountry Option; and (C) Public Warehousing – Building a Backbone for Future Rice Exports. The study identified also relevant policy and investment options needed to establish collateral based financing in Cambodia.

7. In December 2013 the government requested the World Bank Group’s technical assistance support for the more detailed design of the selected crop collateral financing system. This paper is the result of this work. It updates and completes the 2012 report, expands on the design aspects of the above three options, and suggests how to move forward.

8. The paper starts with an overview of Cambodia’s rice sector, with a particular attention to aspects which affect its need for external working capital finance, and characteristics and constraints that could hinder access to such finance (e.g., warehousing capacity, processing constraints, logistics, and market risks).

9. Chapter 2 describes the general conditions for crop-based financing in Cambodia’s rice sector, and discusses two options that have already been tested in the country:
   - Farm/community-level use of paddy as collateral – these schemes, often known as rice banks, have been particularly popular with NGOs, even though they haven’t been successful;
   - Stock monitoring arrangements: in this case, a bank or its appointed agent (a specialized inspection company) monitors the stocks of paddy and rice on a frequent basis. While continuing presence of the paddy/rice is not guaranteed, the enhanced information about the miller’s operations can make the bank more comfortable with greater lending.
10. Chapter 3 discusses policy options for enhancing the use of paddy and rice as collateral for financing. The chapter sets out the two main modalities:

- Collateral management: in this case, an independent third party, working for the bank, takes physical possession of the paddy/rice in a miller’s warehouse, controlling the movements in and out, and guaranteeing the continuing presence of (most of) the paddy/rice. The bank’s financial exposure as far as its working capital loans are concerned is in this arrangement shifted away from the rice miller towards the collateral manager; and

- Public warehousing – a function that in the case of paddy, does not yet exist in Cambodia. In this case, an independent warehouse operator (which could be the warehouse owner or a third party such as a collateral manager that has taken full control over the warehouse) offers warehousing services to the public, at transparent rates. When rice farmers, traders or millers deposit paddy/rice, the warehouse operator issues receipts that can be readily financed by banks (when they do so, the stocks underlying the receipts are blocked by the warehouse operator, and will only be released on instruction from the bank and presentation of the receipts). This arrangement becomes particularly useful for banks if the warehouse operator acts, in one way or the other, as their agent.

11. Both collateral management and public warehousing work best when certain support structures are in place, in particular an indemnity system, a system for the electronic trading of warehouse receipts, and a facility for refinancing warehouse receipt loans (which could be managed by the Central Bank or outsourced to another competent entity such as an investment fund). These are discussed in separate sections.

12. The various sections describe the situation as currently prevails in Cambodia, and provide suggestions on how to move forward, including in terms of possible government supports. Case studies on international experience are used to illustrate options and pitfalls. A final section concludes, with a focus on policy options for the Government of Cambodia and aid donors – the detailed terms of reference for a possible pilot project can be found in Annex 3.

13. Two further annexes are included to provide technical detail on using warehoused rice as collateral. The first annex spells out the operational modalities of a public warehouse, if it is to act as a lending vehicle for banks. The second annex describes what the operational consequences are for rice millers if banks were to employ collateral managers to secure their stocks for enhanced lending operations.

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7 There is a publicly-owned rice warehousing company, Green Trade Co. Ltd, but this is not a public warehouse in the sense used in this document: it does not provide general warehousing services to the public at large, but rather, on the one hand rents out some of its warehouses to the World Food Program and private companies; and on the other, manages the Government’s food security stock (which is financed from a dedicated fund created with a Chinese government donation).
2. The Rice Sector in Cambodia and Its Financing Constraints

2.1 Production, consumption and trade

14. Agriculture plays a very important role in Cambodian society by ensuring food security at community and national level as well as in the provision of employment and income opportunity for a growing population. The National Strategic Development Plan 2009-13 indicates that 81% of Cambodian cultivated land is devoted to rice production and 80.5% of rural population consists of farmers, 72% of them relying primarily on agriculture as their major income source. About 65% is engaged in rice farming. Eleven per cent of Cambodia’s households are considered food-insecure, and around 90% of them live in rural areas.8

15. Production has been increasing steadily (see Table 1), reaching 8.8 million tons in 2011, and 9.3 million tons in 2012. Four out of the country’s 24 provinces (Battambang, Kampong Cham, Prey Veng and Takeo) account for almost half of the total rice production.

16. With a population of just under 14.5 million, domestic food consumption requirements are around 2.1 million tons of rice, or 3 million tons in paddy equivalent. Another 1.1 million tons of paddy are needed as seeds or represent post-harvest losses and animal feed, leaving close to 5 million tons of paddy available for export. In 2012/13, the Ministry of Agriculture, Forestry, and Fisheries (MAFF) estimated exportable surplus of paddy to be more than 4.7 million tons; however, market sources considered this too high an estimate, with 4 million tons being a more realistic number. One may wish to correct the official estimates in Table 1 accordingly.

17. Cambodia produces two main crops a year9, compared to three in Vietnam.10 Only 20 per cent of paddy production is grown in irrigated areas. Most of the production is in the wet season, with longer-term varieties. Seeds are planted in nurseries in late May to July, depending on rainfall, then transplanted to paddy fields in July and August, and with the harvest between November and January, depending

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8 ADB, 2013.
9 This is a simplification, given that rice is grown in different cropping systems, and varieties with growing times from 90 to 210 days are used. Some farmers in Prey Veng province have started specializing in white rice with a 110-day crop cycle, permitting them to have three harvests a year. A more detailed overview as well as a cropping calendar can be found in a World Food Programme website, http://www.foodsecurityatlas.org/khm/country/availability/agricultural-production.
10 However, the Cambodian practice has the benefits that higher-value aromatic paddy can be grown; and that less chemical inputs are required to maintain production levels, which can give Cambodian rice a branding advantage.
on the particular variety. The majority of production in the wet season is based on traditional mixed varieties of seeds. After the harvest of the wet season crop, short-term varieties are planted (with a 95-105 day growing cycle), primarily IR66 and IR50404, with their main harvest from late February to April. Some longer-term rice is also planted, giving rise to a second “early” aromatic rice crop in late June to July.

### Table 1: Paddy production in Cambodia, 2007-2011 (000 tons)

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</thead>
<tbody>
<tr>
<td>Wet Season</td>
<td>5,364</td>
<td>5,722</td>
<td>6,001</td>
<td>6,549</td>
<td>6,700</td>
<td>7,136</td>
</tr>
<tr>
<td>Dry Season</td>
<td>1,363</td>
<td>1,453</td>
<td>1,584</td>
<td>1,701</td>
<td>2,079</td>
<td>2,154</td>
</tr>
<tr>
<td>Total</td>
<td>6,727</td>
<td>7,175</td>
<td>7,586</td>
<td>8,249</td>
<td>8,779</td>
<td>9,290</td>
</tr>
<tr>
<td>Surplus</td>
<td>2,576</td>
<td>3,164</td>
<td>3,507</td>
<td>3,932</td>
<td>4,344</td>
<td>4,735</td>
</tr>
</tbody>
</table>

**Note:** In Cambodia, the wet season crop 2012 refers to the harvests between July 2012 and January 2013 (with a small harvest in July-August, and the main one from October to January). The dry season crop 2012 is mostly harvested from the end of February to the end of April 2013.

The surplus is calculated as follows: Total production minus 13 per cent of losses (as per the Ministry of Agriculture’s estimates, post-harvest losses, seed requirements and animal feed use add up to this number), minus estimated consumption (official population * average per capita consumption, in paddy terms, of 240 Kg). Other estimates are that post-harvest losses are 13 per cent, and seed requirements and animal feed use are each another 3 per cent. The Government of Cambodia’s 2010 Rice policy paper, p. 25, states that per capita consumption in 2015 will be only 223 kg (143 kg of milled rice).

**Source:** Ministry of Agriculture data.

18. **Cambodian farmers produce many varieties of paddy.** Despite efforts by the Ministry of Agriculture, to promote seed production, seed production and distribution system are not well organized; as a consequence farmers mainly retain their own seeds for next year production. Even though reportedly over a 1,000 varieties are produced and a few are processed and traded as a distinct (high-value) variety, traders and millers tend to categorize¹¹ paddy only in three categories, and within these categories, apply discounts and premiums to particular varieties. These three categories are referred to as:

- **Fragrant or aromatic rice varieties** (Phka Romdul, Somaly, Neang Malis, Jasmine) in 2013, an estimate of fragrant rice production put the volume at over 30 per cent of total production (this percentage has been rising; it was 25 per cent between 2010-2012). This is the higher-value rice, and most farmers grow it as a

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¹¹ The National Standards Board has been working on official rice standards, and introduced its first one in September 2012, on brown rice. But overall, progress on introducing rice standards has been slow.
cash crop rather than for self-consumption. It requires a long cultivation period: it is planted in June-July, and harvested in October-December (a second, smaller crop of “early aromatic rice” is harvested in late June to July, as part of the early wet season crop; while its quality is somewhat less, it is suitable for mixing with the main aromatic rice crop). Aromatic rice needs to be dried within days after harvest; otherwise its color and smell deteriorate.

- **Mixed rice, consisting of non-aromatic paddy varieties**, also with a long growing period and mostly produced in the wet season, consists of traditional varieties that farmers have cultivated for a long time. These paddy varieties are not very demanding in terms of drying time, and therefore are often field-dried. Contrary to aromatic rice, which tends to be sold fast by farmers, farmers keep stocks of field-dried mixed rice and white rice for continuous small sales during the year.

- **White rice**, from paddy which requires a shorter production cycle and is mostly produced in the dry season and small amount is planted in early wet season in some area of the country. This rice is only grown by a minority of farmers who have access to irrigation. The main variety is IR66 and Vietnamese IR50404 variety. White rice is what Vietnam mostly produces, and much of the paddy, which finds its way to the market, is bought by Vietnamese traders.

19. **Less than half of the paddy grown is kept in the producing areas, mostly processed in small village mills and kept by the producers for self-consumption.** The remainder is marketed. Population growth is low, and as in other countries, per capital consumption of rice is likely to fall as growing incomes permit consumers to diversify their food intake (see Box 1). Thus, the share of marketed surplus is expected to grow.
Box 1: Summary of international evidence on trends in per capita rice consumption

At a global level, Timmer et al. (2010) provide an important observation on aggregate rice consumption: the growth rate in per capita rice consumption changed direction in the early 1990s, shifting to an annual decline averaging 0.11% (1990-2008). The authors’ analysis finds a rice Engel curve, which suggests that in the mid-1990s, rice moved from a normal to inferior good (which is essentially a good what consumers would demand less of if they had a higher level of real income). In particular, with the global data they estimate that rice becomes an inferior good when income per capita exceeds approximately US$ 3,570 (in 2000 constant US$).

For a subsample of Asian countries, they estimate that rice becomes an inferior good at US$ 2,364 per capita GDP level, i.e. a lower level than that for the global estimates. Most importantly their analysis indicates very high variability in per capita rice consumption across countries and even across regions within a given country. This results from spatial distribution of incomes, urbanization trends, tastes etc. In particular, the authors indicate four key factors underlying rice consumption trends: (i) population growth, (ii) income growth and its distribution, (iii) real price changes for rice, and (iv) labor shifts from rural to urban employment as part of structural transformation.

Such findings are collaborated by older studies such as Ito et al. (1989), which provides an interesting account of how estimates of income elasticity of rice consumption for Asian countries had been decreasing in the period 1961-85 and in some cases became negative. High income growth in countries such as Japan, Thailand, Singapore and Taiwan came with major declines in per capita rice consumption. For example, Thailand’s per capita rice consumption dropped from a 191kg of milled raw rice average in the period 1961-68 to around 164kg average in 1981-85. Some countries such as Japan or Singapore had even more significant declines of 29% and 28% respectively between the two periods reaching levels of 88kg and 74kg of rice per capita.

More recent studies on per capita rice consumption suggest a similar relationship between income per capita and rice consumption. The case of Thailand has been well researched with data from socio-economic surveys indicating consistent decreases in per capita rice consumption, from 119kg in 1990 to 101kg in 2002 when GDP per capita was growing from US$ 1,490 to US$ 2,040 (in constant 2000 US$). Moreover, Thai survey data also indicate significant differences between (i) rural and urban consumption (in 2002 urban areas consume 18% less rice than rural areas) and (ii) income groups (top 25% income earners consume 56% less than the bottom quartile). In Vietnam as well, between 2002 and 2008 per capita rice consumption decreased at an annual average of 1.4% with the pace of decline being higher among the urban population (1.7%). 2011 per capita consumption was 135kg per year, and the Government anticipates consumption reaching 100kg by 2020 (according to Food Security Resolution 63/NQ-CP).

20. Furthermore, despite steady growth, Cambodia’s rice yields are still low compared to neighboring countries, with large opportunities to improve yields by better water management, use of better seeds and more use of fertilizers and other inputs. The government has recognized these constraints and with development partner support, is making a systematic effort to remedy them. Therefore, Cambodia has a large potential to grow its rice exports.

21. Realizing this potential has been declared a policy priority. The rice export policy (Policy on the Promotion of Paddy Production and Rice Export) endorsed by the Government in August 2010 aims to increase production, reduce risks and costs in the rice value chain, and keep a larger share of value added in-country.

22. Cambodia already produces a large surplus of paddy, but the vast majority (estimated at more than 2.4 million tons of paddy in 2013) is exported in an undocumented manner to Vietnam and, a lesser extent, Thailand. Paddy exported to Thailand was often illegally pledged as Thai paddy under the Thai government’s price guarantee scheme. Another 300,000 of milled rice was also thought to be exported in an undocumented manner to Thailand. Official exports have developed as follows.

<table>
<thead>
<tr>
<th>Year</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tons</td>
<td>12,613</td>
<td>105,259</td>
<td>201,899</td>
<td>205,717</td>
<td>378,856</td>
</tr>
</tbody>
</table>

Source: Secretariat One Window Service (SOWS-REF) for rice export.

23. In the first quarter of 2014, Cambodian exports dropped as compared to 2013, because Thailand’s price support program ended in February 2014, and Thailand’s government started selling some of its 13 million tons of rice stockpile to pay its billions of dollars of debt to farmers.

24. The Government aspires to increase official rice efforts, including by the promotion of a modern, export-oriented rice milling sector. Among the measures taken by the Government in furtherance of its objectives are increased budget allocations for irrigation (US$ 400 million from 2009 to 2011 alone), extension and seed production; improved export facilitation including reduction of cost and number of formal and informal fees and licenses; new investments in power stations permitting to supply cheaper electricity to rural areas, including to rice mills; and tax incentives for milling sector and improvements in logistical arrangements. In November 2011, it established the One Window Service (or one stop service) to reduce bureaucratic obstacles and export costs to process export documents such as SPS certificates, Certificate of Origin documents, and CAMCONTROL quantity and quality certificates. This has reduced export approval period from 10 days previously...
to 3-4 days currently. Even if the 2015 target of 1 million tons of rice exports is unlikely to be reached, the positive results of improved policies are visible, both in export numbers and in terms of the new interest of potential importers in Cambodian rice.

25. **Most of the official rice exports are to Europe, primarily the EU** (where Cambodian rice benefits of a considerable import tariff advantage compared to Vietnamese and Thai rice, because of the Everything But Arms initiative). In 2013, there were also large exports to Thailand (23,550 tons), in response to the price distortions introduced by the Thai government; in 2014 these exports virtually disappeared.

26. **Nevertheless, to expand its exports Cambodia needs to make more efforts to make its rice value chain more efficient.** Farm-gate prices for paddy tend to be lower in Cambodia than in Vietnam and Thailand, but FOB prices are higher. Overland transport costs are high, in particular when compared to Vietnam and Thailand. To transport one ton of rice on a 100 km road, Cambodian farmers must spend US$ 15, while their counterparts in Thailand and Vietnam pay US$ 4 and US$ 7.50, respectively.12

27. **Unlike their Vietnamese peers, Cambodia’s millers and exporters do not benefit from subsidized electricity and fuel prices.**13 High fuel prices not only increase costs, they also often make it uneconomic for farmers to use water pumps for producing the year’s second rice harvest. Port capacity, both in Sihanoukville and Phnom Penh, is limited, making it impossible to ship cargoes that are large enough to go directly to destination – instead, expensive transhipment in Vietnam, Malaysia or Singapore is required. At the same time, port charges are higher than in Vietnam and Thailand. Investments are made in both ports to reduce these obstacles. For example, with Japanese assistance, the deep-water capacity of Sihanoukville port is being expanded, allowing cargo ships with a capacity of 50,000 tons (as opposed to the current maximum capacity of 10,000 tons) to moor.

### 2.2 Rice Trade Flows in Cambodia

28. **The physical flows of paddy and rice in Cambodia are pushed by the financial needs and constraints of all the actors in the rice value chain**, rather than pulled by the demands of the domestic and international market. Figure 2 gives an overview.

29. **Almost 3 million people are engaged in growing rice.** Every year at the time of Cambodia’s main harvest, in November-January, some four fifths of all of the rice

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12 Khut Inserey, “Cambodia must up its game in rice exports”, The Asia Foundation, 1 May 2013; See also Ksoll & Brimble, 2012.

13 In early 2013, farmers in Vietnam paid 10 US$ cents per kWh, compared to electricity tariffs on the Cambodian countryside of 30 to 90 cts/kWh. In Cambodia, electricity costs thus account for a quarter of total milling costs. This contributes to a large extent to the much higher milling costs in Cambodia, US$ 30 to 50 per ton, as compared to US$ 20-30 per ton in Thailand and Vietnam.
growing households look to sell paddy, in order to repay debts and meet other urgent financial needs. They sell to traders or their collection agents, and directly to millers.

30. **Many of the traders work for buyers in Thailand and Vietnam, and they compete for paddy not just on price**, but also through their ability to provide farmers with seeds and other inputs on credit – something that cash-constrained Cambodian traders are by and large unable to do. These buyers in Thailand and Vietnam have much greater access to drying facilities, which is a bottleneck for Cambodian buyers. All farmers, not just surplus producers, sell at this time, because they need cash, among other things to reimburse loans they took for inputs. A second burst of selling comes before the Khmer New Year, in mid-April. But by the end of the crop year, many farmers (at least a third) will in fact have become net rice buyers.

31. **Farmers mostly sell to collectors associated with larger traders during the harvest season.** Even the large traders (who may have a turnover of 10,000 tons of paddy a year) are generally very cash-constrained, and will immediately try to sell their paddy to millers. Traders accumulate paddy in small warehouses (often along rivers, for the onward trade to Vietnam), until they have a large enough quantity for onward transport. Some may try to keep small stocks (200-300 tons), but in addition to lack of working capital, they have only limited ability to sun-dry the paddy (which requires a large surface) which is necessary for longer-term storage.¹⁴

32. **Significant amounts of paddy are exported to Vietnam**, much of it IRRI variety dry season rice, harvested between February and April. Exports are both in bags and in bulk (by barge). Trade flows are efficiently organized, often by barges (each carrying 50-300 tons of paddy) which move across the border without any delay (but at the cost of informal payments that may exceed the actual transport costs). Sales to Vietnamese buyers are often on cash-on-delivery terms, but if there is a longer-term relationship, half of the payment may be one week deferred. A smaller amount of paddy is exported to Thailand, mostly high-quality wet season fragrant rice, harvested in November-December.

33. **Millers procure the smaller part of their paddy directly from farmers.** This is not ideal. By the time paddy, as collected by a trader, is delivered to a mill, it is an eclectic mix of varieties. As most farmers are smallholders, they typically deliver at most a ton or so, and therefore a truckload will contain paddy from around ten different farmers. If millers were able to buy directly, this quality issue could be better managed. However, millers have often found it difficult to buy paddy at competitive cost through their own collection agents; and efforts to enter into forward

¹⁴ Recent years have seen a shift of sales of paddy by farmers from dried to wet paddy, partly driven by the entry of Vietnamese buyers (using local agents) who are willing to buy wet paddy, and partly by the rapid spread of mechanical combine harvesters which has made harvesting much faster and thus, field-drying more difficult (Shepherd, 2011). Consequently, the rice delivered by farmers during the harvest season often has a moisture content of more than 20 per cent. For storage, the moisture content needs to be reduced to below 14 per cent. Small-scale mechanical driers are not cost-effective in Cambodia, due to high electricity costs. In neighboring Vietnam, however, electricity is heavily subsidized and there are thus many such driers, giving Vietnamese buyers a source of competitive advantage.
contracts, through contract farming\textsuperscript{15} arrangements, have largely been unsuccessful as farmers tend to default when they can get better prices elsewhere.\textsuperscript{16}

**Figure 1: Paddy and Rice Flows in Cambodia**

\begin{figure}
\centering
\includegraphics[width=\textwidth]{paddy_rice_flows_cambodia}
\caption{Paddy and Rice Flows in Cambodia}
\end{figure}

\textbf{Source}: Author. Percentages are indicative for 2013 paddy and rice flows.

\textsuperscript{15} Cambodia has a Contract Farming Law, but this is aimed at permitting investment companies to sign agreements with farmers under which they supply high-yield seeds and expertise in modern farming techniques.

\textsuperscript{16} Ishikawa, 2009, describes common contract farming arrangements in Battambang province, where at the beginning of the rice cropping cycle, the rice miller supplies small loans (in the USS 50 to 500 range) to farmers for an input purchases; they may also mill part of a farmer’s paddy for free, for his home consumption. In return, the miller expects exclusive rights to the farmer’s paddy. While Ishikawa’s survey finds generally positive effects from such contract farming arrangements (including higher yields, better farming revenues and quality improvements), such arrangements do not seem to have passed the test of time.
2.3 The rice milling sector

34. Because of the high transport costs, paddy in Cambodia is usually milled close to its production area, except for the unofficial exports to neighbouring countries. The milling sector is highly competitive and is operating at tight margins. There are an estimated 50,000 mills in Cambodia, but only about half may be active (many former millers now only engage in paddy trading).

35. The vast majority are very small village-level mills. These are typically owned by a single family and employ only family members, and the milling equipment is at the owner’s residence, or could also be mobile, driven around on the back of a truck or a tuk-tuk. These mills operate only a few hours per day and a few days in a week, in the period of January to June; a typical mill would process around 5 tons of paddy a month, mostly for household consumption. Village rice mills usually do not charge a cash fee for milling paddy. Instead, they keep the bran and small broken and sell it as animal feed, largely to swine producers.17

36. There are around a thousand commercial rice mills18, mostly quite small (with a capacity of 500 kg to 5 tons of paddy per hour), but there are also around 40 large-scale modern mills. Commercial mills produce rice primarily destined either for the domestic market or to supply to larger mills or polishers for re-processing for the export market. They have large buildings used to mill the paddy and space to store dry paddy, milled rice and by-products. They buy paddy directly from farmers and local traders and store in their own warehouse.

37. Medium-sized mills are typically family-owned, and seasonally employ 3 to 10 workers. They typically mill the paddy in the same building where they warehouse it. Their storage capacity tends to be in the range of 500 to 3,000 tons of paddy, but because of working capital constraints their warehouses are rarely full. Generally, the medium-sized rice mills operate from January to October, while in November-December (harvest time) their owners concentrate on paddy trading to Vietnamese and Thai traders; in these months, they also try to constitute their own stock. The quality of rice produced by these medium-sized mills normally falls short of the requirements of the international market.

38. Since 2008/9 there has been considerable investment in modern rice mills, including by investors from China, Thailand and Vietnam.

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17 Ishikawa, 2008, p. 7. In practice, these mills will give farmers the equivalent amount of rice for their paddy, rather than separately milling the paddy. It is worth noting that the non-processing of paddy in Cambodia deprives the country of a valuable source of animal feed. In Vietnam, the bran and husks that are the byproducts of the milling, in Vietnam, of Cambodian paddy, are valuable inputs for the country’s fish and poultry industry.

18 Estimates vary. The Value Chain Information Unit, 2010, gives for 2009 a number of “not more than 1,000 commercial mills.” Some industry sources state there are only around 300 mid-sized and large mills; which seems on the low sides given that there is at least one bank which finances more than 500 mills. Part of the variation comes from determining the cut-off point – what capacity per hour is necessary to qualify and mid-sized and large?
Table 3: Modern rice mills: growth since 2009

<table>
<thead>
<tr>
<th></th>
<th>Number of operational mills</th>
<th>Total milling capacity (tons of paddy/hour)</th>
<th>Total polishing capacity (tons of paddy/hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>As of mid-2009</td>
<td>8</td>
<td>95.5</td>
<td>72</td>
</tr>
<tr>
<td>As of mid-2011</td>
<td>16</td>
<td>244.5</td>
<td>201</td>
</tr>
<tr>
<td>As of mid-2012</td>
<td>22</td>
<td>322</td>
<td>305</td>
</tr>
<tr>
<td>As of November 2013</td>
<td>38</td>
<td>638</td>
<td>506</td>
</tr>
</tbody>
</table>

Source: authors, partly based on Slayton, 2012

39. Mills often expanded their capacity over time. Operational means that the mill can operate, not that it does – because of lack of working capital, some mills have remained idle. As of early 2014, three further mills with a total capacity of 70 tons of paddy/hour were under construction.

40. With these investments, the milling capacity in Cambodia is now sufficient, in principle, to reach the goal of 1 million tons of rice exports. If the rice mills operate 11 months/year, 26 days/month and 10 hours/day (note that in Thailand, mills run two shifts), they can process 1,824,680 tons of paddy. Assuming a milling recovery for export quality rice of 53\%, this equals 967,080 tons of rice. With official exports for 2013 at less than 400,000 tons, it is clear that mills now operate far below their capacity.

41. Most of the new rice mills have modern drying facilities, albeit often with a capacity that is insufficient to buy and dry sufficient paddy at harvest time to operate their processing equipment for the whole year (but when the millers have a realistic prospect of being able to finance larger paddy purchases, they can easily invest in additional mechanical dryers; these cost US$35,000 to 70,000 a piece, and are able to dry 35 to 40 tons of paddy per cycle – the cycle is 8 to 12 hours, depending on how moist the paddy is). They have large independent warehouses (more than 10,000 tons) to store paddy at harvest time, and processing equipment able to meet the quality requirements demanded by export markets. All this reflects considerable capital outlays. A rice mill with a capacity of 300-500 tons a day means an investment of some US$10 million; and a warehouse to store 40,000 tons of paddy, another US$6 million. To then buy enough paddy to fill the warehouse would cost at least a further US$8 million, so easy access to working capital finance becomes imperative.

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19 This is less than the 64% recovery assumed elsewhere in the report because the rice has to be sorted. It is assumed that export quality rice cannot have more than 5 per cent brokens. A modern mill produces rice with 25 per cent brokens. The surplus of broken rice is sorted out to produce export quality rice, and can be sold on the local market (the typical quality sold in the Cambodian domestic market is 35-40% broken rice).
42. **In the commercial mills, the typical process is following:**

- Traders and farmers bring paddy to the mill, where it gets weighed and tested (often, each individual bag is tested)
- While it is awaiting drying, the paddy is kept in the farmers’ own bags
- Drying, in the modern mills, is in large mechanical dryers, which a capacity of 30 to 120 tons; the drier can process one load in 8 to 12 hours, depending on the starting moisture level. Some mills have two dryers
- After drying, the paddy is stored in 50 kg bags, or often in 1-ton bags. The bags are stored by quality of paddy. They are stored in rows (in the more organized mills) or piles, many layers high; even the 1-ton bags can be stored in 4-5 layers. The paddy can be stored for months. When the main harvest for aromatic rice approaches (November), many mills try to empty their inventory (even if it means they have to sell paddy, rather than process it) so that they have more working capital to buy aromatic rice
- Each day, the miller tends to process one type of paddy, depending on demand. The paddy gets milled, and in the more sophisticated mills, may also be polished and sorted. The rice is then bagged, most often in 50 kg bags but also, in smaller (5 kg, 20 kg) bags for sale in western markets. The bags can be the miller’s own brand, or the brand of the distributor
- The husks (the most voluminous by-product) are discharged onto a heap outside of the building. From there, it can be moved to the miller’s gasifier, for his captive electricity production (it is estimated that over 80 millers now have rice husk gasifiers\(^\text{20}\)), or sold, e.g. for brickmaking
- Millers tend to sell rice at once, among other things because they do not wish to store it in the same premises as paddy.

43. **The mills sell to traders, including wholesalers, and to exporters.** Sales are under different arrangements. Exporters may order specific types of rice, paying an advance to the mill to procure the paddy and start processing operations; for larger orders, deliveries take place over time. Both millers and exporters complain about the lack of reliability in such forward contracts: exporters say that millers often substitute the ordered high-quality rice with lower-quality product when market prices increase over the term of the contract; and millers opine that exporters (as well as wholesalers) often find fault with the quality of delivered rice when market prices have fallen and they wish to renegotiate prices downward. Price adjustments through such strong-arm techniques\(^\text{21}\) in what are supposed to be fixed-price forward contracts can be considerable.

\(^{20}\) Gasifiers are imported from India, and also manufactured locally. Demand for gasifiers has increased strongly in the past 2-3 years due to high fuel prices.

\(^{21}\) Note that under Cambodia’s Civil Code, when a contract for forward delivery has been signed, a buyer has the right to demand a reduction of the purchase price (or terminate the contract) when the seller delivers nonconforming goods. However, in a system where there is no independent arbitrator on quality, such a right puts the seller on a weak footing in case market prices fall after the signing of the contract.
2.4 Rice exporters

44. **Millers have invested heavily in polishing and colour sorting capacity,** which upgrades the milled rice produced to meet international market standards. Five independent polishing plants, which buy rice from mills for reconditioning, have also been set up; two of these are now among Cambodia’s five largest rice exporters.

45. **In 2012, 71 companies exported a total of 205,717 tons of rice.** The five largest exporters accounted for 55 per cent of this:\footnote{Secretariat of One Window Service For Rice Export Formality (SOWS-REF), The Cambodian Rice Exporters & Export Quantity (MT) in 2012, reported in Rice News Today, April 2014.}

- Khmer Food: 31,441 tons (operates a polishing plant, but no rice mill)
- Golden Rice: 26,071 tons (rice miller)
- Baitan: 24,213 tons (rice miller)
- AMRU Rice: 16,156 tons (operates a polishing plant and a brown rice mill)
- International Rice Trading: 15,450 tons (trading company)

Five further companies accounted for another 18 per cent:

- Loran Import-Export: 9,693 tons (rice miller)
- Mega Green Imex: 9,336 ton (rice miller, and polishes rice from associated millers for export)
- White Gold Import Export: 7,986 tons (rice mill)
- Indochina Rice Mills: 5,939 tons (rice mill)
- Cavifoods: 5,290 tons (rice mill)

46. **While around forty mills are now able to meet export requirements,** they generally do not have the size that permits them to export efficiently. In international rice trade, individual orders can be in the order of magnitude of 20,000 tons (a single vessel), which is a quantity that even Cambodia’s leading exporters cannot supply. The largest mills in the country have a capacity for processing 300-360 tons of paddy a day (when operating for 12 hours/day), so it would take about two months to produce even 10,000 tons of rice. To increase the ability to respond to large orders, some mechanism to aggregate export volumes more easily would be most useful.

2.5 Risks in the rice value chain

47. **Financing Cambodia’s rice value chain is not without its risks, in particular:**

- Volume-related risks, as the paddy and rice available to millers and exporters may fluctuate due to weather-related fluctuations and competition from buyers from neighbouring countries.
• Price-related risks, as Cambodian paddy and rice prices more or less follow volatile international rice prices; thus, the future value of paddy and rice stocks is difficult to predict.
• Margin-related risks: rice millers, the most convenient target of lenders to the rice sectors, are faced with instable processing margins and thus, uncertain profits.
• Counterparty-related risks: farmers, traders, millers, wholesalers and exporters may all default on their financial obligations, for any of a number of reasons. In addition, overseas buyers will refuse to take delivery of a contracted cargo if it fails to meet their country’s phytosanitary requirements.

48. As to volume-related risks, on the aggregate millers do not have much cause for worry. Cambodia’s paddy production has been increasing steadily since 2001 – reaching more than double the 2004 level in 2010. However, millers run risks when it comes to the procurement of aromatic rice, which gives the highest milling margins. As an illustration, one may consider the profitability of processing, in Battambang, the three main types of rice in March 2014 (Table 4).

49. This is just a one-month snapshot, and it ignores the value of by-products other than bran and brokens. But the value of by-products will be the very similar for all varieties of rice. Furthermore, milling costs for these three types of rice are virtually the same (35-40 US$/ton, or 141-161 Riel/kg). The table illustrates that if a mill is unable to buy sufficient aromatic rice, it will see its overall profit margin erode, endangering its survival. With growing competition between mills, this is a serious risk.

50. Cambodian rice farmers and millers, and consequently their financiers, are exposed to considerable price risks. Cambodian paddy prices – irrespective of whether the paddy is ultimately processed for the domestic or the international market – are strongly affected by international conditions: in the West of the country, local price levels show the influence of Thai prices; and in the Southeast, paddy prices are closely linked to those on the Vietnamese market. Rice prices on the international market are highly volatile, even more so than other food commodities. This is partly the result of government market intervention. For example, when Thailand’s pledging scheme finally collapsed in 2014, the Thai government started selling of its stockpiles, leading to both lower prices and lower export volumes for Cambodian exporters. Furthermore, there are no hedging tools available to manage price risks. Fixed-price forward contracts (other than Government-to-Government contracts) are rare, and despite several attempts, there is so far no liquid international rice futures market.

51. One consequence of this is that storage decisions are not without risk (and in the same vein, financing against the collateral of paddy in storage implies a price risk). In a closed market, one can expect prices over time to reflect the post-harvest prices plus storage costs – in other words, prices can be expected to increase during the crop year. If there are storage constraints (e.g., as a result of the lack of working capital for seasonal storage), then seasonal storage can be expected to generate excess profits; which would make it relatively low-risk for banks to finance such storage. It is widely believed in Cambodia that prices indeed follow this pattern. However, as
Cambodia rice sector is open to international influences, this assumption is not justified. Charts 1, 2 and 3 show month-to-month price developments for the three main categories of paddy from 2007 to 2012. In each case, a season’s line starts at harvest time (November for aromatic rice, December for mixed rice, and March for IR66). As can be seen, there are many years that prices do not increase in any significant manner within a season.

Table 4: Illustration of profitability of milling different forms of paddy, March 2014

<table>
<thead>
<tr>
<th>Paddy/rice type</th>
<th>Fragrant</th>
<th>Mixed Rice</th>
<th>IR66</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of 1000 kg of paddy (000 Riel)</td>
<td>1,700</td>
<td>1,050</td>
<td>980</td>
</tr>
<tr>
<td><strong>Output of 5% broken rice (kg)</strong></td>
<td>450</td>
<td>480</td>
<td>430</td>
</tr>
<tr>
<td><strong>Market price of 5% broken rice (Riel/kg)</strong></td>
<td>3,200</td>
<td>1,700</td>
<td>1,700</td>
</tr>
<tr>
<td>Revenue from sale of 5% broken rice (000 Riel)</td>
<td>1,440</td>
<td>816</td>
<td>731</td>
</tr>
<tr>
<td><strong>Output of broken rice (kg)</strong></td>
<td>200</td>
<td>180</td>
<td>200</td>
</tr>
<tr>
<td><strong>Market price of broken rice (Riel/kg)</strong></td>
<td>1,700</td>
<td>1,200</td>
<td>1,100</td>
</tr>
<tr>
<td>Revenue from sale of broken rice (000 Riel)</td>
<td>340</td>
<td>216</td>
<td>220</td>
</tr>
<tr>
<td><strong>Output of bran (kg)</strong></td>
<td>170</td>
<td>160</td>
<td>170</td>
</tr>
<tr>
<td><strong>Market price of bran (Riel/kg)</strong></td>
<td>800</td>
<td>800</td>
<td>800</td>
</tr>
<tr>
<td>Revenue from sale of bran (000 Riel)</td>
<td>136</td>
<td>128</td>
<td>136</td>
</tr>
<tr>
<td>Gross profit margin (000 Riel/ton of paddy)</td>
<td>216</td>
<td>110</td>
<td>107</td>
</tr>
<tr>
<td>Gross profit margin as percentage of paddy cost (%)</td>
<td><strong>12.70%</strong></td>
<td><strong>10.47%</strong></td>
<td><strong>10.91%</strong></td>
</tr>
</tbody>
</table>

*Source*: Authors
52. **Millers are aware of the fact that some of their peers have gone bankrupt because of adverse price movements.** For at least some, this has consequences for their own marketing behaviour. For example, one of the millers interviewed stated that he kept his stock of paddy at around 2,000 tons around the year – the quantity he normally mills in a month – even though he had the means to buy much more after harvest and then keep it throughout the year; the reason was that he did not want to be exposed to the risk of falling paddy and rice prices.
In the face of volatile input and output prices, rice millers, the most convenient target of lenders to the rice sectors, are faced with *unstable processing margins* and thus, uncertain profits. This is important for their financiers as millers that operate at a loss are much more likely to default on their credit obligations. Chart 4 illustrates the volatility of the gross milling margins in a key producing province, Battambang.

**Chart 3: Paddy prices for IR66 rice in Battambang, 2007 to 20012 (Riel/kg)**

![Chart 3: Paddy prices for IR66 rice in Battambang, 2007 to 20012 (Riel/kg)](chart3)

*Source*: based on data provided by Muniroth Sok

**Chart 4: Gross margins for millers in Battambang (illustrative)**

![Chart 4: Gross margins for millers in Battambang (illustrative)](chart4)

*Source*: based on data provided by Muniroth Sok.
54. Given the number of simplified assumptions used to construct Chart 4, it should be seen as representing the volatility of milling margins rather than their absolute levels. Gross margins are estimated as the revenue from the sale of milled rice on a certain day minus the cost of paddy on that day; revenue from by-products such as bran is thus ignored. Different varieties of paddy give different end products; and the efficiency of the mill also affects outputs. Here, it is assumed that for a typical mill, the processing of 1000 kg of aromatic paddy produces 480 kg of milled rice with 5% brokens, and 150 kg broken rice; for 1000 kg of mixed rice, these numbers are 500 kg and 140 kg; and for IR66, 450 kg and 190 kg. For 2007 to 2011 (for which no market prices are available), broken rice is assumed to have a price equal to 70% of the mixed rice with 5% brokens. Broken rice produced from aromatic rice is assumed to be 20% more expensive than broken rice produced from mixed rice and IR66. Prices are sample prices, drawn on market prices as indicated by millers on one day (generally in the third week) of each month.

55. The rice sector also has its share of contract defaults and bankruptcies. Farmers, traders, millers, wholesalers and exporters may all default on their delivery obligations, because of unsuccessful ventures into other sectors (e.g., real estate speculation), economic hardship, or losses due to wrong choices (in terms of timing and price) in their paddy/rice buying and selling decisions. These risks exist throughout the chain. Farmers, who have been provided with inputs on credit which is to be reimbursed through delivery of paddy after harvest, may decide to sell the paddy elsewhere. Millers and exporters may seek to renegotiate contract prices. And exporters may be faced with unexpected non-performing contracts, in particular as a result of phytosanitary controls. When a cargo of rice does not meet a country’s sanitary and phytosanitary conditions (e.g., traces of a banned pesticide, or pests are found), it will be rejected, leaving the seller with a product for which he urgently needs a new buyer. Cambodian rice has been rejected on these grounds by China as well as the EU in recent years. Banks that lend to exporters have to be aware of these risks.

2.6 Financing constraints

56. Farmers have very limited access to formal sector credit, partly because of poor past experience of banks. Some benefit from microfinance, but at times these come at relatively high (3-4 per cent per month) rates. Some receive inputs, in particular fertilizers, on credit (to be reimbursed in paddy), both from Vietnamese buyers and through NGO/private sector “contract farming” projects. In over 3,000 communities, donor agencies have helped create community rice banks (many subsequently failed, despite donor start-up funding), where farmers can borrow paddy in-kind and reimburse, in paddy (with an interest rate) after the harvest (this concept is further discussed in the next chapter).
57. Large traders may have bank overdraft facilities (secured by land titles), but the main credit flows are centred around rice mills (see figure 3). Loans are generally secured by their land, real estate and equipment. Mills tend to have paddy stocks that suffice for two months or so of milling at full capacity. In addition to carrying the corresponding working capital burden, mills often also finance traders so that they can more effectively compete with the cash-rich agents of foreign buyers. They will also often sell on credit terms to both wholesalers and exporters.

Figure 3: Credit flows in the Cambodian rice sector

Source: Author

58. Several of Cambodia’s banks lend to the rice milling sector – the more active banks lend to a few hundred mills each (still leaving well over 90 per cent of the active mills without formal sector loans). Bank credit committees are reticent when it comes to non-collateralized lending, and as Cambodian banks have difficulty in taking paddy/rice as collateral, they feel hard-pressed to increase lending to the rice sector: what they can take as collateral, they have already taken as collateral.23 In fact, this is because, while several forms of collateral are conceivable, virtually all loans in the rice sector are based on “hard collateral”: mills are asked to pledge in particular

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23 However, NBC does not have any system in place to verify the value at which collateral is booked by a bank, leaving valuation at the discretion of the bank. In an environment where banks compete with each other for clients, this is not a prudent approach.
their land, but also real estate and equipment. Under the country’s Land Law, pledges of land titles are reasonable collateral. In case of a default, courts will enforce a bank’s legitimate claims. However, procedures are not fully satisfactory: the auction of the land is held under the auspices of the court, which does not necessarily generate the best returns.

59. As to the pledging of equipment, the legal environment is relatively conducive, with a “Law on Secured Transactions” which in principle governs all moveable property already in place since a few years. In principle at least (as of the time of the mission, the system was out of order because it needed a software upgrade), the pledges are registered (online, at a low charge: US$ 2.50 per pledge) with the Secured Transactions Filing Office, administered by the Ministry of Commerce. The local Credit Bureau has the ability to investigate whether the same assets have not been already pledged to another creditor; and first registration (“perfection”) of a pledge gives priority over other claimants in case of default. However, experience has shown that in practice courts may fail to abide by the Law and do not pass on proceeds of a forced sale to the secured creditor, despite a valid priority claim. Banks have also been slow in understanding the benefits of using the registration system.

60. Very few mills benefit from loans beyond those secured by “hard collateral”. Other readily available forms of collateral, inventories of paddy and rice, and contract receivables, are hardly used by banks so far. Inventory finance is provided to a few, but through rather informal mechanisms (this is further discussed in the next chapter). Interest rates are reasonable (8.5 to 11 per cent a year, plus 1-2 per cent charges; this is, however, more than what Thai and Vietnamese State banks charge). Banks lend against receivables only for a few selected clients.

61. Wholesalers carry relatively small operating stocks, which they replenish regularly with the millers; a typical arrangement is that the miller gives one truckload on credit, and when the wholesaler wants to take the next truckload, he first has to pay the first one. Even with these relatively tight credit conditions, millers still may run into problems in getting paid. Sales to the wholesalers are typically on invoice and bill of delivery; banks are unwilling to discount this commercial paper.

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24 An alternative way to finance equipment would be leasing, but the regulations governing equipment leasing in Cambodia are unsatisfactory, and its value-added-tax treatment is highly unfavorable.


26 However, pledges over physical inventory appear to remain out of the ambit of the Law for the time being; and the Filing Office reportedly does not register such pledges.
62. **Exporters may order export-quality rice from reputable millers** (and will then often pay a 25-30 per cent advance, with a further 25 per cent paid on delivery and the remainder 2-4 weeks later), or they may buy milled rice that they have to reprocess and polish. They generally keep low stocks, sufficient to meet ongoing export orders. To compete on international markets, they often have to sell on deferred payment terms, for example under Letters of Credit that specify payment only 3-6 weeks after delivery of specified shipping documents. Open account terms are also used for trusted buyers; in this case, buyers often pay once they receive the documents that indicate that their ordered rice has been shipped. Despite the risks of non-payment under such documentary arrangements being low, banks in Cambodia do not have standard lending products to refinance such receivables, but will only do so on an exceptional basis for good clients.

63. **Most mills operate in the informal sector, and have little or no experience in preparing bank loan requests.** They may also lack the financial records to demonstrate their business operations, and may not even keep proper books on the physical flows of paddy and rice; even if they have such records, they are likely to be reluctant to show them to third parties. Traditional methods of assessing credit risks are thus of limited use, which is why banks have almost uniquely relied on collateral.

64. **The financing requirement is sizeable.** If one assumes that the current rice exports are efficiently financed already (which is an overly optimistic assumption: rice mills now use long-term assets to secure short-term funding), then to go from 400,000 tons of rice exports to 1 million tons, new funding needs to be made available for 600,000 tons of rice, equivalent to 1 million tons of paddy. The average paddy prices in 2013 were US$ 390/ton for fragrant rice, and US$ 225/ton for IRR66 (white rice). Assuming bank finance is for 80 per cent of the value of the paddy, that half of the paddy is fragrant and the other half is white, and that millers have to buy 500,000 tons of paddy twice a year which they store no longer than 6 months, then the revolving fund required to fund this paddy would be around US$ 123 million. It

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27 At least when OECD country buyers and banks are involved; but when Letters of Credit are opened by banks in more risky countries, Cambodian banks should in many cases be able to benefit from the guarantee facilities offered by IFC’s Global Trade Finance Program. The Program provides for different ways to give such guarantees, on a range of trade finance instruments. For example, for an export transaction from Cambodia to Gabon, the exporter may request the importer to make an advance payment. In order to manage counterpart risk, the importer wishes that this advance payment is covered by a stand-by letter of credit (L/C). The exporter can ask his local bank to open a stand-by Letter of Credit (L/C), but a L/C from a Cambodian bank may not be acceptable for the importer: he may require this L/C to be confirmed (guaranteed) by his local bank, or a reputable international bank. It is not certain that a Gabonese bank can be found which is willing to confirm the Cambodian bank’s L/C. This is where IFC can come in. If the Cambodian bank has been approved as a partner by IFC (as of July 2012, only ACLEDA Bank has), it can ask IFC to open a stand-by L/C for an agreed percentage (up to 100 per cent) of the advance payment in the favor of the Gabonese bank. With this additional guarantee, the Gabonese bank may be willing to accept the Cambodian bank’s L/C, and confirm it. The importer now is protected by his local bank (the importer can call on the L/C if the exporter fails to deliver), and can therefore safely make the advance payment, which is routed through his bank and the Cambodian bank to the exporter. See for an overview of the program http://www.ifc.org/gtfp

28 Under donor programs, rice millers have received much training on recordkeeping, and have even been supplied with mill management software. However, they consider it advantageous to remain in the informal sector and have little desire to disclose detailed business records, not even to obtain better bank loans.
should be noted that this 1 million tons of paddy is not even one third of the amount of paddy that is currently estimated to be bought by Vietnamese and Thai buyers for exports.

65. In its 2010 rice policy, the Government of Cambodia announced a number of steps, to be implemented through the Ministry of Economy and Finance, and the NBC, to encourage more commercial bank lending to the agricultural sector and rice mills specifically. The policy measures include the following:

- Recapitalizing the Rural Development Bank (RDB) from US$ 13 million to US$ 20 million, at the latest in early 2011. Inter alia, the RDB was tasked with managing a new US$ 38 million credit line specifically for rice millers. While disbursed, these loans have not had much impact on the rice milling sector as a whole. RDB has difficulties with loan management (most of its existing loans are non-performing), and despite its announced interest rates of 5 per cent, when all costs are added up, except for a few lucky beneficiaries, most millers find that its loans are actually more expensive and less convenient than those provided by other banks.


- Developing a Credit Guarantee Scheme to guarantee loans from commercial banks to companies and paddy collectors at the latest in 2011 (as of mid-2012, work on this is still ongoing).

- Cooperating with development partners to set up a Risk Sharing Facility, at the latest in 2011. Since, both IDA/IFC and AFD have provided Partial Credit Guarantee Facilities, both of which have seen little or no use (banks find that they are too expensive for the benefits they provide).

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66. The Government also announced three medium- to long-term measures in its policy document:

- Create new financial instruments and leverage mechanism for financing, in particular by rigorously enforcing the Law on Secured Transactions and the Law on Financial Leasing so as to diversify the collateral types (i.e., permit operating leases, financial leases and warehouse receipts) and to strengthen the system of centralized credit information. Such measures would indeed be useful, although it should be noted that reportedly, the Law of Financial Leasing does not as much need enforcement as it needs to be rewritten.

- Establish and strengthen farmers’ organizations to develop the “Open Paddy Market” through activities such as contract farming, weighting, drying and paddy-based collateralized loans for members, provision of high quality seeds and fertilizers for market driven rice production. The Open Paddy Market was piloted in the Prey Veng province in 2005, with assistance from the Japan International Cooperation Agency (JICA), but results were not positive. As will be discussed in the next chapter, one should not put overly complex tasks on newly created farmers’ organizations.

67. Consider the establishment of an Agriculture Development Bank to support and promote agriculture production and processing; and the establishment of an Export-Import Bank to support the export of rice and other products. Given that there is no scarcity of banks in Cambodia, however, and in the first case, the rather negative worldwide experience with Agricultural Development Banks, such new banks may not be the best policy option. Creating funds for dedicated purposes, which can be distributed through existing banks, may be more effective.
3. Possibilities and Constraints for Crop Colletaral-based Finance in the Rice Sector

68. Cambodia has relatively shallow financial markets, and a bank-dominated financial sector that is very concentrated in large corporate lending primarily in Phnom Penh. Traditionally, banks have not been interested in agriculture. However, in the past few years banks have noticed that, whereas other large sectors such as real estate, tourism and the garment sector have all shown to be vulnerable to global turmoil, the agricultural sector has proven very robust. Many banks have thus been looking at ways to increase their presence in agribusiness, and the rice sector has become a prime target.

69. In the rice sector, banks by and large only finance against tangible collateral. The kinds of collateral that banks are used to are rapidly becoming exhausted when it comes to agricultural lending, and thus the interest of Cambodia’s Ministry of Economy and Finance to pursue further study and analysis about warehouse receipt finance comes at a very appropriate moment for them. And indeed, for the Cambodian economy as a whole: if the government’s rice export plans are to be met, considerably more finance needs to be injected into the sector, and warehouse receipt finance can be an excellent tool.

70. The conditions in Cambodia are supportive of warehouse receipt finance:

- While there is no Warehousing Act or any specific legal framework for warehouse receipt finance, there are also no apparent legal or regulatory bottlenecks. In particular, warehouse receipts have legal value, can be pledged and transferred, and banks are permitted to use them.

- Current paddy and rice flows (both for exports and domestic trade), and even more so, anticipated flows are more than large enough to afford profitable business opportunities to new specialized firms (for collateral management and public warehousing).

- Much of the physical infrastructure appears to be in place, at least to get a warehouse receipt financing program started: throughout the country, there are well-constructed, secure warehouses with all the critical equipment (driers, weigh bridges), and sufficiently large to maintain efficient inventory finance operations. So in the short run, there is no requirement for a large investment in infrastructure.

- There is no resistance in the private sector to explore new financing approaches, and rice millers are keen to pursue inventory finance models. They perceive working capital constraints as a serious problem, and indicate a willingness to adapt their processes in order to get access to more funding.

- Banks see the paddy/rice sector as a growth opportunity, and are already looking at new financing models.
However, at the same time:

- The legal and regulatory framework, when it comes to rice financing, is poorly understood and even more important, banks are uncertain how laws and regulations will be interpreted in practice for new forms of financing such as warehouse receipt finance (or for that matter, leasing).

- Financing rice is easier than financing paddy. However, as long as so much paddy is still exported from Cambodia, the opportunities for banks in financing rice inventories will remain limited (including because rice is not stored for long).

- A successful inventory finance programme would keep more paddy in Cambodia for local processing, and this could rapidly create a need for new investments. In the short run, working capital is the key constraint. If this is lifted, drying capacity becomes a bottleneck – but many mills will be able to invest in new dryers, in particular if banks offer them on lease. After the dryer bottleneck is remedied, warehousing capacity will become the new constraint for the Cambodian rice sector. Financing and building warehouses takes time and effort, the government may therefore already start considering how to expand warehousing capacity in the medium term.

- While there is no overt resistance against new forms of financing, including warehouse receipt finance, there is also very little expertise among banks and even more so, rice millers. They may be little aware that warehouse receipt finance has implications for the way that mills and banks operate – a great degree of procedures, discipline and reporting are necessary. Thus, they may find these conditions unpalatable, at least until they get used to such new ways of operating.

- Banks may be looking for new opportunities, but there are also opportunities in other sectors, and their incentives to invest in new, unproven (in Cambodia) financing schemes may be insufficient.

71. **There is a keen interest in warehouse receipt finance but a lack of understanding of what really makes it work**, what is necessary to convert a warehouse into part of the financial infrastructure of Cambodia. Therefore, it is important to highlight these unsatisfactory experiences. To a large extent, this boils down to the issue of control: is the warehouse and the goods therein, which act as collateral for a bank loan, really controlled by an agent for the bank?

72. **Banks need to understand how they can really control stocks.** Can village representatives give up their loyalty to the farmers that they represent and become truly agents for a bank? Can a warehouse manager who works for the company that needs to borrow money be independent from that borrower and answer honestly to the bank? Are spot checks enough to give a bank control over the goods in a warehouse? In international experience, there have been donor agencies and banks who answered “yes” to one or more of the above questions. It is hoped that this chapter will help disabuse those active in Cambodia of these notions, and familiarize them with proper mechanisms to take control over goods in a warehouse.
3.1. Improving rice sector finance by using crop collateral: concepts and modalities

73. The current situation in Cambodia is that banks primarily lend for short-term working capital purposes against rice millers’ long-term assets. This is hardly conducive for the development of the sector. Tying up the value of long-term assets to fund working capital needs hinders long-term investments; and moreover, the “sizing” of the working capital finance is completely dissociated from the actual working capital needs of the rice sector (in fact, the value of the paddy in a 20,000 tons warehouse is far above the value of the warehouse itself and the land on which it rests).

74. Developing inventory finance as a prime working capital tool can therefore be of great benefit to the Cambodian rice sector. It will free up capital for the needed long-term investments that will boost Cambodia’s position as a competitive rice exporter; and at the same time, will lead to less of a mismatch between working capital needs and credit availability.

75. The mechanisms are not new. Indications of crop collateral-based financing can be found on Mesopotamian clay tablets. In Egypt at the time of Cleopatra, farmers and traders could deposit rice in public warehouses and receive a credit against the stock. The practice is continuing to this day, in many incarnations. Inventory financing schemes are not innovative and risky, but rather time-tested tools to deal with the financing need of commodity sectors (as well as commoditized sectors30). This section briefly describes the various forms that crop collateral-based financing takes (figure 4 gives an overview), with examples from the agricultural sector and where possible, the rice sector.

76. Crops can be used as collateral both before they are harvested, as standing crop; and after, when they are stored in a warehouse or silo. The use of standing crop as collateral, as is done most widely in Brazil through its Rural Product Notes, is not the subject of this paper; conditions in Cambodia, for the time being, are in any case not yet ripe for such financing techniques. Rather, this paper is on the use of crops once harvested and stored in warehouses.

77. In some countries (primarily countries throughout Central and Latin America, as well as Turkey), banks that wished to finance commodity trade flows have in the decades past set up warehousing subsidiaries as tools for such finance. While warehousing was not a bank’s core business, commodity sector lending was seen as very attractive, and inventory finance as the safest way of doing it. As others did not provide the necessary infrastructure, many banks decided to do it themselves. They were already used to taking valuable assets such as gold or jewellery as collateral for loans, safeguarding it in their vaults. In a way, setting up a

30 Inventory finance schemes have been used successfully for structuring loans against stocks of manufactured goods that, in their marketability and price transparency, resemble commodities – e.g., car spare parts, mobile phones, paper and school books.
full-fledged warehouse is the most direct manner to enlarge a bank’s vault so that more commodities can be accepted and stored under the bank’s control.

78. **But it is not necessarily the most cost-effective for a bank to directly own a warehouse or a collateral management company.** Instead, it can enter into contractual arrangements with third parties who will provide the warehousing services, and at the same time, act as the bank’s agents in safeguarding commodity collateral. This third party could be a warehouse owner, who issues warehouse receipts for the commodities in stock and pledges these receipts are collateral to the bank.

![Diagram: Typology of forms of crop collateral-based financing](source: Author)

79. **Not all warehouse owners are sufficiently trustworthy from a bank’s perspective.** Banks will have particular difficulty with borrowers who own and operate their dedicated warehouses (“private warehouses”), and issue warehouse receipts for their own stocks. Such receipts amount to little more than self-certification of the existence of the stocks by a party who will immediately benefit from higher loans when he declares more stocks. Not surprisingly, banks are not keen to provide finance against commodity stocks in private warehouses.
80. Instead, they prefer warehousing arrangements that permit the separation of the borrower from the control over the commodity inventory.\(^{31}\)

There are two main ways to ensure such separation: first, by using the borrower’s own warehouse, but putting an independent “collateral manager” in charge of securing and managing the warehouse as an agent of the bank (this turns the private warehouse into what is known as a field warehouse). Second, by having a warehouse operated by a warehouseman who has no interest in the actual goods stored in this warehouse – instead, he offers warehousing and other services to the public at large. This will be called a public warehouse in this paper. The warehouseman could actually be a collateral manager; this is a relatively new phenomenon, but in India, public warehouses managed by collateral managers\(^ {32} \) now account for a major part of warehouse receipt finance in the country.

81. In both cases, securely stored goods are used as loan collateral. This will allow traders and others to deposit commodities in a secure warehouse where he receives (preferably electronically) a receipt certifying the deposit of goods of a particular quantity, quality, and grade. He can then use the receipt as a form of portable collateral to request a loan from a bank.

82. Warehouse receipt finance has been actively promoted in the past by many governments as a way to improve agricultural finance. But not all public schemes have been successful. Problems can arise in particular when the objective of financing working capital needs is confused with the objective or raising prices, say for farmers. Thailad’s experience illustrates this (see Exhibit 1).

\(^{31}\) To contrast them with private warehouses, these warehouses can be called “public” – indeed, that is the traditional and also legal definition in the USA. The category of public warehouses is then subdivided into “field” and “other public” warehouses. E.g., in a classic publication (Jacoby, Neil H. (ed.), Financing Inventory on Field Warehouse Receipts, UMI, 1944, http://www.nber.org/books/jaco44-1): “As the term is ordinarily used, "field warehouse" simply means a public warehouse established by a bona fide public warehouseman on the premises of a business concern for the purpose of acquiring custodianship of commodities owned by that concern. Field warehouses are distinguished from "terminal" or other "public" warehouses in two respects: first, the field warehouse exists only for the purpose of receiving deposits of commodities belonging to a single depositor; second, the warehouse is physically located on the premises of the depositor. The field warehouse is "brought to" the commodities, in contrast to the terminal warehouse, to which commodities are transported for deposit.” Historically, in the USA, field warehousing started and was for a long time operated as a branch operation of established terminal warehouse operators. However, to avoid confusion, in this paper, field warehouses and public warehouses are used as two distinct categories.

\(^{32}\) This makes sense because in many cases, the original owner/operator was considered too risky by banks, because of weak management or weaknesses in the warehousing company’s finances. Putting a collateral manager in charge of the warehouse removes these risks: he will put professional management, improved logistics and grading, and full insurance coverage.
Exhibit 1: The Thai Rice Mortgage Scheme: a Warehouse Receipt Financing That Isn’t

In September 2011, Thailand’s National Rice Policy Committee approved a rice mortgage scheme which at first sight, looked like a warehouse receipt financing scheme. But appearances can be deceptive.

Under the arrangement, farmers who pledged their rice through a nation-wide network of approved rice mills and farmers’ silos obtained immediate access to loans at the state-owned Bank for Agriculture and Agricultural Co-operatives (BAAC). The paddy deposited at the warehouses, valued at government-set prices, acted as collateral for the loan. Four months after their deposit, farmers could decide whether to reimburse their loan and redeem their rice, or to default and forfeit their stocks. As prices guaranteed to farmers were between a third and half higher than market prices, farmers always default on their loans.

The government recognized the problems with similar schemes in the past, and said it would try to prevent abuses. It would implement a monitoring scheme to compare the amount of rice pledged by farmers with information on their land holdings; make sure that local authorities guaranteed that those participating in the scheme were actually rice cultivators; and use DNA testing to detect rice grown abroad and smuggled into Thailand. In practice, however, very little of this actually appeared to have been done.

The result was a scheme that, although requiring billions of dollars, failed to perform in any economic or financial sense. Contrary to, say, an outright purchasing

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33 Thailand introduced its first Paddy Pledging Program in 1981, to provide 90-day low-interest rate loans to farmers against the security of their rice stocks. For many years, the subsidy element was mainly linked to the interest rate: farmers could default on their loan when it expired after 90 days, but the price they would then receive for their paddy 90 percent of the expected market price. But after two decades, the scheme started to be used for political purposes, with prices set higher and higher. By 2004, the government had ended up with 7.5 million tons of paddy, and a loss of over a billion US$. A new government then reduced the prices to realistic levels, but after another government change prices were again inflated, this time costing the government over 16 billion baht (half a billion US dollars – according to some estimates it was almost double that). Only a third of farmers had benefitted from this last scheme, generally, the richer farmers; much of the scheme’s benefits were captured by rice millers. It also attracted large unofficial imports into Thailand. It had led to a rice stockpile of 5.6 million tons, which cost 10 billion baht a year in warehouse storage and interest fees. Selling down the stockpile proved very difficult. The then-President of the Bank of Agricultural and Agricultural Co-operatives opined in 2007 that Thailand should stop offering mortgages for rice from millers as the practice did little to support market prices, despite absorbing 60 billion baht from the Government’s budget (BAAC urges elimination of rice mortgages by millers, Bangkok Post, November 05, 2007).

34 Just to fund the program from December 2011 to February 2012, the Thai government intended to raise 320 billion baht (US$ 10 billion) from domestic financial institutions in October-November 2011. As pledging under the program was much below expectations, actual spending was less. In July 2012, the head of the Thailand Development Research Institute estimated that if the Thai government were to sell the 10.2 million tons it had then in stock, it would incur a loss of 2.2 to 2.5 billion US$ (Thai rice losing on world market: TDRI, The Nation on Sunday, 29 July 2012). At the end, when the program collapsed in early 2014, the budgetary cost was estimated at US$ 22 billion, equivalent to a year of the government’s total investment budget (Peter Warr, Thailand’s rice subsidy scheme rotting away, East Asia Forum, 17 March 2014).
program by a government marketing company, there was no proper check on whether paddy was really delivered into the warehouses, or whether it met certain minimum quality standards. The result was massive collusion between millers and farmers to misrepresent deposits. Poor farmers (the intended beneficiaries of the scheme) received only a fifth of the implied government subsidies. Furthermore, as farmers did not expect that they would ever take their paddy back once delivered into the warehouse, little care was given to actual storage conditions, leading to unnecessary waste. While the Thai Government presented the scheme as a revolving fund, the fact that it was unable to sell the paddy at the prices paid to farmers, combined with high storage costs and massive leakage, caused the rapid depletion of government finance. At the end, in early 2014, the government was no longer able to pay farmers for all the paddy that they had delivered (even government banks refused to lend the money\textsuperscript{35}).

Apart from its high budgetary cost, the structural effects of this scheme were also negative. By diverting rice from the market, it drove up local prices, to the cost of the many poor consumers (who include a significant percentage of farmers). The stockpiles of paddy and rice stored reached unsustainably high levels (21 million tons in early 2014, equal to two thirds of annual production), leading to high storage costs and losses and once the Government could no longer sustain its rice mortgage program, a collapse of paddy and rice prices.\textsuperscript{36} Thai rice exports were negatively impacted (Thailand fell from first- to third-largest rice exporter). A large new source of corruption was infused into the rice milling, storage and financing system, creating perverse incentives and a situation that may well be difficult to correct in the future. If the Thai rice mortgage model provides any lessons, it is on what practices can best be avoided.

3.2 Crop collateral stored at the farmers’ level

83. Many farmers sell a significant part of their crop directly after the harvest; it is not infrequent that they sell so much that later in the year, they have to buy rice from the market to meet their food consumption deficiencies. In particular, not just in Cambodia but in most developing countries, poor rural households are often sellers after the harvest, but net grain buyers over the full year. It would be ideal if ways could be found to leave more paddy or rice at the village level so that farmers are less at risk of selling their paddy cheaply after harvest, and having to buy expensive rice a few months later.

\textsuperscript{35} One bank that did announce it would lend to the government, the Government Savings Bank, immediately lost the trust of its clients. A massive run on its deposits forced the bank to cancel the loan (Rice-pledging scheme: a death trap for government and farmers, The Nation, 19 February 2014).

\textsuperscript{36} In April 2014, less than two months after the pledging scheme had been stopped, market prices had fallen to US$ 155-186 per ton, as compared to the previous paddy price paid by the government of US$ 465 per ton (New government should continue rice pledging scheme, says caretaking Finance Minister, Oryza, 21 April 2014).
Several efforts have been made in Cambodia to do exactly that, but as in other parts of the world (see Exhibit 2), most of these efforts have failed. In the first half of the 2000s, over 3,000 community/farmer managed rice storage schemes were reported to be active in Cambodia. They were based on traditional village solidarity schemes, but received support from outside agencies, mostly NGOs, but also the EU and in the late 2000s, the Japan International Cooperation Agency (JICA) under its “Open Paddy Market” project.

These schemes were often set up as barter schemes, with member farmers depositing paddy after harvest. Later in the year, deficit farmers would be able to borrow paddy from the scheme; they would reimburse what they borrowed plus a small “interest charge”, all in paddy, after the harvest. This enabled them to avoid borrowing money from village money lenders, who charge exorbitantly high interest rates. The rice banks were managed by village-level committees: they decide who has the most need to be allocated loans (in paddy), and they are also responsible for collecting repayments after the harvest.

It is reported that many of the community rice banks which focused on these core activities have been quite successful, and have been able to generate some surplus capital to invest in rebuilding local infrastructure or constructing schools. However, scaling up efforts, to turn these community rice banks from instruments for food security to credit and marketing cooperatives, have been largely unsuccessful – the “Open Paddy Market” project is widely seen as not having reached its objectives. This is in line with international experience.

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38 In Thailand, where similar rice bank schemes have been set up, the risks of paddy being appropriated illicitly by certain villagers have been mitigated in an interesting way. The deposit of paddy into the paddy bank was organized though a traditional "merit-making" ceremony, part of the standard Buddhist ritual of providing food for the monks in a local temple. The temple, in turn, contributed the paddy to the community rice bank.
Community-level cereal banks are not a new idea. The colonial authorities in the Dutch Indies, for example, actively promoted them throughout the territory of –now– Indonesia as a way to promote food security. And their concept remains attractive: allow farmers to store more of their grain after harvest so that, months later in the lean season, deficit farmers are not forced to buy expensively from grain traders but can instead, borrow from the cereal bank.

As long as cereal banks focused on this simple function, they had some chance of survival (although it could take years of handholding by external agencies even to reach this level). However, when donors tried to push them to the next level, few cereal banks had the organizational strength to carry the new administrative, commercial and financial burdens and withstand the new temptations. Most saw their fabric torn apart by the social pressures that arose either when too much was at stake (i.e., it became attractive for certain persons to try and appropriate the benefits of the cereal bank), or when there was some setback that required hard decisions. Setbacks were common: despite what some might think, profit margins in grain trading are tight, and the smallest error can lead to losses. And errors come easily in an environment with slow, collective decision-making and strong social pressures. Moreover, hopes that a cereal bank can allow its members to store after harvest for selling at a much higher price later in the season tend to be squashed by the reality of the market place: such post-harvest price increases are by no means assured.

87. This does not mean that inventory finance is irrelevant for farmers. Indeed, it would be unduly expensive to put into place the management structures that would make a community-level warehouse sufficiently secure for a bank to accept stocks in this warehouse as reliable collateral. The costs are largely fixed, and the quantities that are likely to be stored into a community-level warehouse are too low to make the unit costs affordable. But farmers do not need to store in their own village warehouses to be able to benefit of warehouse receipt finance. A public warehouse can serve the same function, as long as it is sufficiently close to them, and they can organize the transport of their paddy either individually or as group. They can deposit their paddy in such a warehouse, obtain a loan against this collateral, and in a proper

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39 The proceedings of the meeting are available on http://www.foodaid.org/pdfdocs/cmgmt/grainstorageworkshop.pdf
40 The most progress appears to have been made by village-level paddy banks in Madagascar. While overly ambitious schemes failed, paddy banks that permitted villagers to use their individual, clearly-marked paddy, stored in the village warehouse, as collateral for a loan have reportedly been successful.
system (as will be discussed further below), they can then, if they wish, offer their paddy for sale through an electronic trading system. In recent years in India, more than 100,000 farmers have made use of this possibility to obtain low-cost bank lending by depositing their produce into a public warehouse.

88. From a (microfinance) bank’s perspective, rather than focusing on creating village level rice banks that would evolve into credit cooperatives, it would appear advisable to look at the possibilities for a public warehouse to serve farmers as clients for warehouse receipt finance. If banks wish to work directly with farmers to enhance their access to finance by leveraging their crop, there is, however, an alternative model that appears more promising than that of a community rice bank. This is called the “corporative model” in the Philippines, where agricultural banks have developed some experience. In this model, the bank enters into a joint venture with farmers (for example, to set up a rice mill), but then imposes its own management. Over time, farmers buy the bank’s shares by delivering their crop to the joint venture, and thus they gradually take control.

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<th>Exhibit 3: The Philippines Experience in Pushing the Collateral Management Concept to Enable Farmers’ Entry into Rice Milling</th>
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<td>Financiers traditionally assume that farmers cannot become more involved in the value chain. They have neither the funds to set up a modern processing plant, nor the skills to manage it. An experience from the Philippines shows this is too facile an answer. There, a rural bank (the One Network Bank) has successfully experimented with an innovative scheme to finance a rice mill. When analyzing an initial loan request from a farmers' group to invest in a rice mill, the bank recognized that the project made economic sense. However, given the lack of experience of the farmers as plant managers and marketers, the loan would be unduly risky. But rather than turning them down, they made a counter-offer: let's create a &quot;corporative&quot;.</td>
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The principles of the corporative were simple. In 1986, the bank set up a limited stock company (called Panabo Agro-Industrial Corporation), with 40 per cent of the stocks owned by the bank, 15 per cent by the individual owners of the bank, and the remainder by the farmers. The first two parties’ shares were fully paid up, while the farmers paid only a nominal sum. The payments received were sufficient to construct the rice mill. The bank appointed professional plant managers. Once the plant was operational, farmers started delivering paddy. Part of the revenue was used first to pay the farmers' share capital, and afterwards, for the farmers to gradually buy equity from the bank. After six years, the farmers were majority owners — the mill had developed from a corporative into a well-managed cooperative. After two more years, the banks had been fully paid back.

This was a win-win project for all involved. The farmers had become owners of a processing plant, without much financial pain, and captured a much larger part of the consumer price. The bank had done a successful long-term loan, at a low risk because during the critical period it controlled all key physical assets. The project also made it

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41 See for a detailed case study Capeding, 1998.
possible to provide short-term production and consumption credit because reimbursement could be arranged through paddy deliveries to the mill.

But an attempt to replicate the experience in 2000 initially met with significant problems. A combination of inefficient storage practices and depressed local prices caused losses for this second corporative firm from 2002 to 2004. By the end of 2004, as many as 70 per cent of the participating farmers had decided to leave the project.\textsuperscript{42} But the situation was remedied successfully by investments in mechanical driers (which reduced storage losses), and greater attention on the productivity of farmers. The bank in effect installed a supervised production-cum-credit system, where paddy farmers were under contract to adopt best practices as prescribed by the bank’s agricultural extension workers. Farmers who failed to produce a minimum of 6 tons per hectare each harvest were expelled from the scheme. The farmers who remained in the programme were able to increase their production radically, from 4.4 tons per ha before the programme to 7.2 tons the year after its introduction; they were also able to expand their acreage. In part (to cover the expenses of land preparation and transplanting) credits were given in cash, while suppliers of seeds, fertilizers and chemicals were paid directly by the bank. The bank also brought in an assured buyer, who paid directly into bank-managed accounts (so loans reimbursements could be automatically deducted). After this production-cum-credit scheme proved successful for paddy, it was extended to a number of other crops, such as bananas and cassava.\textsuperscript{43}

### 3.3 Private warehousing: what is its value for banks?

89. In general, lending against stocks in a warehouse provides significant lower risks than lending to the stocks’ owner only if the owner no longer controls the stock. In other words, the warehousing arrangements should be such that control over the stocks is removed from the owner/borrower. If a bank lends against warehouse receipts issued by the borrower himself, with the bank having no actual control over the goods, then how is this really different from simply lending against the borrower’s good name?

90. Lending against stocks in private warehouse is thus not very popular with banks, but exceptions can be found – first when the borrower has a good name and the bank can regularly inspect the borrower’s warehouse (the case of stock monitoring, discussed in the next section); and second, when banks can check companies’ credit record and furthermore, can insure themselves against significant risks (discussed in this section).

91. There are only few example of the second case – the main ones are the Philippines and South Africa. The system in the Philippines is described in the separate exhibit 4 below. As can be noted, the situation in the Philippines’ rice sector in the late 1970s, when the government established its warehouse receipts finance

\textsuperscript{42} Llanto and Badiola, 2010.

\textsuperscript{43} Buenaventura, 2007.
program, was remarkably similar to that in Cambodia now. The Philippines system worked for many years, but at a cost: the reason that it worked is that the government created an insurance fund, at an initial cost of US$ 80 million, specifically to cover the risks of defaults in bank loans secured by private warehouse receipts. This insurance fund is now bankrupt, so it may not be the best model for Cambodia.

92. The South African model, focused on the country’s grain sector, works through the combination of history/track records, a good institutional environment, and a well-performing electronic warehouse receipts system (EWRS44); a version of the same system operates in Uganda, for the coffee sector. The EWRS binds together warehouse operators, traders, processors, financiers, and South Africa’s futures exchange. The warehouses linked to the system all have long track records (and most belong to the country’s two largest cooperatives). The software of the system provides easy tracking of positions, which gives strong comfort to users. As to date, over US$ 4 billion in warehouse receipt finance have been provided through this system.

Exhibit 4: The Quedan system in the Philippines

During the 1970s, rice production in the Philippines grew rapidly, enabling the country to move from food deficit to self-sufficiently. However, rice traders and millers found it difficult to raise the working capital to handle the growing volume of rice coming to the market. Banks, at the time, were only providing mortgage finance against fixed collateral (land, real estate, equipment); and most traders had few such fixed collateral left to pledge as they had already used it to raise funds for the expansion in fixed assets that the country’s rice processing sector needed.

The government looked at warehouse receipt finance as the solution. It already had two laws governing this area (the General Bonded Warehouse Act, and the Warehouse Receipt Law), which set a framework for bonded warehouses (including insurance obligations, and the requirement to keep complete records of commodities received, warehouse receipts issued, and withdrawals made). In 1978, it started the Quedan Financing Programme (‘quedan’ is ‘inventory’ in the local language), with the Quedan Guarantee Fund Board as the supervisory body. In 1992, the Board was reformed into the Quedan and Rural Credit Guarantee Corporation, or Quedancor. Quedancor’s authorized stock capital was US$ 80 million. For a long time, Quedancor and its predecessor underpinned the warehouse receipt finance program in the Philippines, but towards the end of the 2000s Quedancor found itself in serious financial difficulties and had to suspend operations.

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44 Its website is http://www.silocerts.co.za, and the software for the system is provided by ICX (Integrated Commodity Exchange), website http://www.icxafrica.com.

45 A good overview is given in Llanto, 2010, Annex 1, on which much of this Exhibit is based.
Figure 5 illustrates how the different components of the quedan finance system operated:

- **The warehouses** issuing the receipts belonged to and were managed by rice millers and traders. In order to be authorized to issue quedans, the warehouse facilities have to be examined and accredited both by Quedancor and by the National Food Authority. Accredited warehouses had to pay a guarantee fee of 2 per cent of the borrowed funds per year. Accreditations were for specific amounts of paddy (given in the “Certificate of Franchise”, depending on the findings of the warehouse examination.

- **Banks** will approve the credit risks of the warehouse operators (miller or trader) that they wish to do business with (they do not just rely on the quedans). Once a miller or trader has been approved, he can apply for a quedan loan. For this, he must present a copy of his Certificate of Franchise, a warehouse receipt, a Stock Inspection Report, an affidavit of stock ownership and evidence that the stock is insured. He must also post a security bond for one-third of the value of the stored stocks. Loans are for up to 180 days for paddy. If the borrower defaults, the bank files a notice of default, after which Quedancor, NFA and the bank inspect the borrower’s warehouse. If indeed, stocks are found missing, Quedancor reimburses the bank and then starts procedures against the borrower.

- The **depositors** of the stocks involved in quedan finance can either be the warehouse operator himself, or a third party. The warehouse operator is not permitted to release the paddy held against quedan loans.
depositor has paid the loan, he receives a “certificate of loan settlement” from the bank. Only on delivery of this certificate can the paddy be removed from the warehouse. However, warehouse operators are allowed to rotate the stock, as long as they keep the same minimum quantity. Paddy stocks can also be milled, under certain conditions.

- **Quedancor** has to approve the warehouse operators who can be part of its scheme. On request of the bank, it also insures the loans given to these operators for up to 80 per cent of the loan plus accrued interest.

- The **National Food Authority**, the state marketing board, guarantees that if necessary, it will purchase any stocks held under quedan loans at its official procurement price. While this price tends to be below market prices and NFA therefore never needs to take delivery, it does put a floor under the value of the stocks.

- The **Central Bank** has a discount window through which warehouse receipt loans can be discounted at the lowest available rate.

- Quedan loans had a high repayment rate, of 99 per cent. More than 180 banks made use of the programme. The program allowed millers to provide loans to others in the rice value chain: inputs on credit to farmers, and 30-day deferred payment terms to retailers. And they did help millers and traders to build up paddy stocks after harvest. However, the large fund made available by the Government to guarantee the performance of private warehouses, replenished by the premium payments by bank, ultimately were not enough to guarantee Quedancor’s survival.

### 3.4 Stock monitoring

94. **Some Cambodian banks, in particular ACLEDA and Canadia Bank, have started to use paddy inventories to boost their lending to rice mills.** Fixed assets remain their key collateral, but by actively monitoring stock levels, they feel comfortable in lending a higher percentage of the value of these fixed assets – up to 100 per cent. As there are currently no reputable independent stock monitoring agents, the bank’s own staff take responsibility for the monitoring.

95. **Stock monitoring does not give a bank any extra collateral:** what is observed at one day may have disappeared from the miller’s premises the next; and even if inventory remains in place, in case of a default or a bankruptcy, the bank has no priority claims over other creditors. But stock monitoring has the large benefit that it can provide a bank with good insight into the health of a miller’s business. By observing how much paddy the miller is able to buy, how much of it is processed into rice, and how fast the rice is sold the bank can get a fair idea of the ability of the miller to make full use of his installed capacity and to find buyers for his rice. Combining this with other information available to the bank, e.g., payments made for the rice sold by the miller, the bank can form a good picture of the state of a miller’s business. Also, the bank can consolidate his regular estimates of physical stocks with the warehouse ledger in which movements into and out of the warehouse are
registered; if a discrepancy is observed, this can an early warning signal for problems at the mill.

96. **Internationally (including in countries like Vietnam), stock monitoring is generally used for larger, presumably low-risk clients,** as part of a credit transaction that includes other risk mitigants such as the bank taking a charge on the borrower’s fixed assets. So in principle, the Cambodian practices are in line with international ones. But in practice, the methods currently employed by banks need to be much improved, so that they can extract better information from their monitoring activities.

97. **In many (but not all) of the larger mills, physical conditions are in place for stock monitoring:** or at least, they can be created relatively easily (it should be noted, however, that this does not necessarily imply that it is advisable for a bank to finance a mill on the basis of a stock monitoring arrangement). Typically, what a bank should be looking for is the following:

- A warehouse that is in good state and in all evidence, well managed (this requires physical inspection of the premises, evaluating inter alia the use of sound building materials, presence of fire-fighting equipment, absence of unsupervised entrances, general cleanliness, use of proper bags and the like).
- Sufficient drying facilities to handle the expected paddy inflows at peak season.
- Proper facilities, with trained staff, to weigh paddy and rice as it enters and exits the warehouse (i.e., a weighbridge), and to test its quality.
- A warehouse that is large enough for well-organized storage of paddy and rice. The bank should also insist on proper storage practices. For example, rice needs to be stored separately from paddy to avoid insect infestation and the like. The monitoring agent should be able to make a fair assessment of quantity and quality of the paddy and rice in stock at the moment of his visit. This implies it should be stacked in rows, of uniform quality, rather than as a large pile (it is too difficult to assess what is inside the pile). In some of the mills visited, stocks were indeed kept in a way that makes verification of quantity and quality possible; in others (including at least one that was receiving inventory finance) they were not. Bags with other materials that can contaminate paddy (which can cause a risk if it is to be exported) were observed in some instances to be stored alongside paddy, without even any separation. Banks may consider producing a short leaflet which shows the storage methods acceptable to banks.
- Proper record-keeping by the mill, in particular in terms of paddy and rice moving into and out of the warehouses (note, however, that banks cannot rely on records alone, as mills may keep more than one set).
- Insurance on the stored paddy and rice
- Willingness to use an independent fumigation entity for pest control at regular intervals (say, monthly). This has the benefit that the bank is not dependent on the borrower’s ability or willingness to maintain the quality of the stock – instead, it can rely on the fumigation certificate issued by an independent agent.
98. **These are also conditions for collateral management**, and indeed, in many cases where it would be feasible for a bank to operate a stock monitoring agreement, collateral management would also be possible (collateral management has more requirements mainly when it comes to the security of the warehouse and the ability of a collateral manager to prevent infraction and theft). Collateral management has a higher fixed cost, but at the same time, the bank should be willing to lend more at a lower interest rate – so it will vary from case to case whether one or the other form is more attractive.
4. Suggested Options for Crop Collateral-based Finance in Cambodia

99. Taking into account the situation in the Cambodian rice sector as discussed in the previous chapter, this chapter discusses various options to successfully implement warehouse receipt financing schemes in the country. The chapter starts with a discussion of the two main options for crop collateral-based finance in Cambodia: collateral management, and public warehousing. The discussion on the latter is divided into two parts, with first a description of an option that is feasible in the short run (namely, opening existing “surplus” warehouses as public warehouses, which can help arrange bank loans), and then a discussion of a longer-term strategic possibility, to build a network of warehouses along the rice value chain. These various options are complementary, not competing, and indeed, one corporate vehicle – a new collateral management company – could execute much of the short-term strategy implied in the following sections. The chapter also describes possible support mechanisms and actions, from the set-up of an electronic warehouse receipt system to capacity-building for banks, and the opening of a facility to refinance warehouse receipt loans.

4.1 Collateral management

100. Collateral management is not an enhanced form of stock monitoring. Instead, it is akin to expanding the bank’s vault to incorporate a borrower’s warehouse – and thus, to take over control over the inventory in that warehouse just as if the bank deposits a bar of gold into its vault. Sometimes, Stock Monitoring Agreements (SMAs) are called “soft” Collateral Management Agreements (CMAs), but this is a misnomer. In a SMA, the bank exercises no control over the physical stocks, in a CMA it does. In a SMA, the stock monitoring agent does not guarantee continued presence of the stock, but in a CMA, the collateral manager (CM) becomes liable for ensuring its presence. In a SMA, the mill’s stock are part of the overall assets of the mill, and the bank has no priority claims; in a CMA, the inventories are pledged to a bank, and because of the “constructive pledge” nature of the CMA, the bank actually has the legal right to take possession of the inventory and sell it if the borrower defaults on his obligation.\footnote{However, it would appear that in the Cambodian legal system, in case of a bankruptcy, the priority rights of the bank to the inventory will be upheld, but the process to sell it will have to be through the court (the court organizes a public auction, with the proceeds ultimately remitted to the bank).}
101. In a CMA, the borrower, bank and collateral manager (CM) sign agreements under which a collateral manager will control the borrower’s warehouse, and hold the goods therein on behalf of the bank. In other words, even though the warehouse may be on the borrower’s own premises, adjacent to his mill, the borrower has no say over the release of goods from the warehouse. Instead, the collateral manager will only release them under explicit instruction from the bank. The bank then finances the goods as long as they are in the warehouse.

102. Collateral management is a common practice worldwide, including in countries that are considered as high-risk. In countries with a lack of internationally-recognized warehousing companies at the ports, it is much used for exports and imports, for a wide range of products, e.g. rice, fertilizers, even medicines, cars and mobile phones. It is also an instrument of choice for financing commodity processors, who may have to maintain large physical stocks. It tends to work well, but a high level of professionalism is necessary to make it so (the main element in this is proper procedures and processes: staff can be trained quite fast, in a matter of months). Collateral management transactions in which proper procedures and processes are not implemented can go wrong. Experience with rice imports into Africa, for example, has demonstrated risks such as theft; fraud (through collusion between the collateral manager and the importer); fraud attempts (by the importer); public unrest (plundering of the warehouse); and marketing problems, due to price falls, or the importer buying the wrong type of rice for the country. CMs have insurance that protects banks from the fallout of such risks; but if they regularly have to call on this insurance, it will rapidly become prohibitively expensive, forcing a CM out of the market. Thus, they need strong procedures of checks and balances and a well-developed electronic system to manage risks in order to survive.

103. In Cambodia, however, collateral management has so far only been used in one small deal, in the rice sector: an international bank brought in a Singapore-based firm to act as collateral management agent in a pre-export finance deal. This was a small transaction with therefore percentage-wise high transaction costs, but the impact of this on the loan’s interest rate was offset by the ability of the bank to lend at international terms.

104. Collateral management is not possible for all rice millers. First, the physical conditions of the warehouse have to be suitable. The conditions as described above for stock monitoring are a starting point. In addition, the CM will be concerned about his ability to guarantee the continued presence of the goods, that is to say, protect them from theft. This implies that security at the site should be good (with easily controlled entrances not just at the warehouse itself, but also for the whole compound in which the warehouse is located), and that there should be no general security concerns (e.g., a restless situation in the area where the warehouse is located, with risks of riots that could lead to plunder). Ideally, the warehouse should also have access to the internet, not just for the CM to make his reports online, but also to pose

47 Reportedly, in the early years of the century in Vietnam, collateral management was regularly used for managing loans for coffee exports, but with international firms increasingly becoming active in the country’s bonded warehousing areas, this has now been replaced by warehouse receipt finance against these firms’ internationally-backed receipts.
cameras that can be used for remote supervision (even for bankers, it gives a lot of comfort to be able to see at any moment in time the stocks that they are financing).

105. In Cambodia, collateral management is probably attractive only for some of the largest rice mills. Some 20-30 of them are estimated to have the necessary physical facilities (in particular, good, secure and well-equipped warehouses, with the mechanical driers that are needed that paddy can be rapidly dried for safe longer-term storage); collectively, the quantity of paddy that can be financed through them probably exceeds 200,000 tons. Two millers have already invested in silos, permitting bulk storage rather than storage in bags, which is an attractive storage format from the perspective of a collateral manager; more mills may follow. Smaller mills and mills without appropriate storage facilities would benefit more from access to public warehouses that have partnerships with banks.

4.2 Public warehousing – the upcountry option

106. Collateral management is in principle the best inventory finance tool for rice mills which have already invested in large warehousing space, as it minimizes their additional logistics costs. However, this option is not available for all mills, as their premises may not permit safekeeping of stocks by a third party, or their volumes may be too low to justify the fixed costs of a collateral management agreement. For such millers, as well as for traders and farmers who may want to gain access to inventory finance, a public warehousing option may be of use.

107. The largest disadvantage of public warehousing is additional cost – for the storage in a third-party warehouse, and for the logistics of moving the goods between the miller’s operating facilities and the warehouse. The main benefit is additional access to finance, at presumably lower all-in cost than other forms of finance (as the financing is much less risky than unsecured lending, the bank should be willing to reduce its interest rates); but there are two additional benefits that should be maximized. One is superior storage practices, and thus, lower storage losses. The other is that the public warehouse, by using electronic warehouse receipts, provides a link-in with the region’s paddy trading system, which gives the miller a wider scenario of options on how to use his paddy (this is known as a “real option” in economic theory; it could mean, for example, that a miller decides that it is more profitable for him to sell his paddy than to process it; or that he can respond to larger orders for milled rice because he knows that through the public warehouse, he has access to sufficient paddy).

108. To keep additional costs reasonable, the warehouses that are to be used as public warehouses should ideally be necessary for the logistics of paddy processing and rice trade anyway – in other words, one should not construct new warehouses just for the sake of paddy financing. One option then is to use existing excess warehousing capacity, which will be discussed in this section. The other, discussed in the next section, is to construct and organize the new warehouses that will be necessary to support the projected growth of Cambodia’s milled rice exports in such a way that they serve a dual function of supporting logistics, and supporting finance.
109. Is there excess warehousing capacity that can be converted for use as a public paddy warehouse? There appears to be in Battambang, which is centrally located for a large volume of production and a large number of mills. In terms of physical infrastructure, the so-called “paddy bank”, adjacent to the Baitong rice mill, with the same owner but under a different corporate umbrella, is suitable for public warehousing. The warehouse is modern and well-constructed; sits on its own piece of land which can be readily secured; its 40,000 tons storage capacity is large enough to cover the fixed costs of a public warehousing arrangement; and it disposes of most of the equipment needed for a public paddy warehouse, including a weighbridge and a grain drier (small fixtures like internet cameras can be easily attached, the area has internet connection). One should scout for a similar facility (with an owner willing to convert it into a public warehouse) in Phnom Peng or the Takeo area, to cover the South East production zone.

110. But a physical warehousing facility, however suitable for storage, does not automatically become a public warehouse that will be support enhanced bank lending to the rice sector. For this, a specific management structure needs to be put into place. Once a successful model has been tested, one can consider replicating the model in other regions where owners of good, centrally-located warehouses are willing to release them for public use.

The following will be necessary (procedures are spelled out in greater detail in annex 1):

1. The management of the warehouse (the “warehouse operator”) needs to be fully separated from the adjacent mill – it needs to be completely independent, with strictly enforced firewalls. A long-term lease contract has to be signed between the warehouse operator and the warehouse owner, in which the operator pays a monthly rental fee to the owner, and the owner no longer has any privileged rights of access or information on the warehouse.

2. The warehouse operator issues electronic warehouse receipts that confirm that it is holding a certain amount of paddy of a described quality on behalf of a depositing party. If others are to take this receipt at face value, they are to trust the operator’s “signature”. They have to be convinced that technically, the operator is indeed able to make such assessments (e.g., of the quality), and that indeed, those goods exist, and will continued to be held under instruction of whatever party controls the warehouse receipt. While it will take time to build up such trust, in order to get the public warehousing process started, the following two confidence-building measures will be most useful:
   a. The involvement of an experienced international agency. The model as used in India provides a useful example. There, collateral managers

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48 In principle, a mill or trader could decide to start using part of his warehouse as a public warehouse, issuing warehouse receipts to third-party depositors who could use them to obtain bank loans. However, this is rather risky for banks, as it’s not evident that the mill/trader would really continue acting in the bank’s best interest. However, it is worth mentioning that in Vietnam, at least one international coffee trader accepts consignment sales at its warehouse: farmers deposit coffee, receive warehouse receipts that they can use as a pledge for bank loans, and sell the coffee to the trader once they like its announced price (which fluctuates with world prices).
(who are also involved in the field warehousing/collateral management described in the previous section) take control over a warehouse on a leasing basis, and then start operating it as a public warehouse. The agency’s reputation should help build trust towards the bank; furthermore, it will be able to bring in not just its procedures (and proper procedures are critical in this business), but also, its insurance coverage.

b. The creation of a guarantee mechanism (an Indemnity Fund), backing up the obligations of the warehouse operator in case of a default. This is further discussed in section C.

111. The warehouse operator should be a collateral management agency, and given the small size of Cambodia’s economy, it may well be the same company that provides field warehousing services to larger mills. The size of the Indemnity Fund that would be required will then largely depend on the extent to which the collateral manager’s insurance coverage eliminates risks for the users of a public warehouse – it may be that most of the risks are already covered by the collateral manager’s own global insurance. Typically, in a collateral management operation, the collateral manager does not guarantee the presence of all the commodities. Rather, he takes a buffer of a few per cent. This is to mitigate the risks that arise from the fact that the warehouse is on the borrower’s premises, and therefore the borrower can, through force or subterfuge, extract commodities from the warehouse before the collateral manager can take measures to stop this. In a public warehousing operation, the operator cannot take such a margin: he has to guarantee the continued presence of all the commodities deposited, with only a provision made for possible weight loss due to reduced moisture content. For this additional volume that the operator is guaranteeing, existing insurance may be insufficient and an Indemnity Fund can come into play.

112. The decision to keep paddy (or milled rice) in one’s own warehouse or in a public one is a matter of costs/benefits. To maximize the benefits for the depositor of using a public warehouse, the public warehouse operator needs to provide a full-fledged electronic platform. This will be one of the key elements to mitigate the extra logistics costs that millers have to carry to deposit their goods in a third-party warehouse (in the Cambodian context, without providing such benefits the public warehouse may well stay empty). The functionalities of such a platform are discussed in a later section.

113. The public warehouse operator needs to act as an agent for one or more banks, again as a key element to compensate depositors for the extra logistics costs that they face when depositing goods in a third-party warehouse. This is a key feature of the Indian system (see exhibit 5), and a critical reason for its success.
In 1957, the Indian Government decided to start investing in public warehousing as a government function – until then, warehouses were generally owned by large traders. It set up the Central Warehousing Corporation as well as a large number of State Warehousing Corporations not just to store commodities procured by the Government, but also to enable farmers and others access through credit by storing their commodities as collateral with the public warehouses.

But apart from government-owned banks financing stocks held by government-owned and cooperative entities, warehouse receipt finance did not really take off. This only changed in the mid-2000s, when private sector-owned collateral management companies became active.

These collateral managers had their root in new electronic commodity exchanges established in India in 2003. Originally, they were primarily intended to ensure proper delivery of agricultural commodities on the exchanges’ platform. But demand for their services for independent collateral management operations soon became apparent. First, this was for field warehousing operations, in which a collateral manager is asked to temporarily take over a warehouse on a trader’s or processor’s premises in order to secure the stocks therein, as collateral for a bank loan. But by the late 2000s, demand became strong for the collateral managers to take management control over existing warehouses and operate them as public warehouses.

Currently, the largest collateral manager in India, NBHC, operates some 2,000 such public warehouses (alongside a similar number of field warehouses). NBHC has agency agreements with a large number of banks, under which it acts as an agent for these banks in originating and arranging deals (it receives an arrangement fee for originating new financings). When a farmer or trader deposits goods with one of the NBHC-managed public warehouses, NBHC tests their quality, and if this meets certain minimum parameters, then it can arrange all the documentation for a warehouse receipt loan, if the depositor so desires. Because of their very positive experience with the low risk of such loans, banks are willing to lend at rates 2 – 2 ½ per cent below their usual rates. In the past four years, NBHC has arranged more than 100,000 such loans for farmers, with amounts starting as low as US$ 500.

NBHC also acts as a procurement platform, both for government grain, oilseeds and cotton procuring agencies, and for large traders. And they permit volumes to be aggregated to meet larger orders – for example, traders buy the small volumes deposited by farmers, and consolidate them into volumes large enough to fill a truck.

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49 This is done through a combination of using small laboratories, including some that are small enough to fit into a suitcase, and using large laboratories to which samples are sent for testing (this can mean a delay of 2 days or so).
4.3 A possible role for the government: setting up an indemnity mechanism

114. If warehouse receipts are to have strong value, the government needs to ensure that there is a system of safeguards that prevents improperly managed or insufficiently capitalized warehousing companies/collateral managers from issuing warehouse receipts. There are two basic models, public and private. In a public system, the government adopts a Warehousing Act, and sets up a Warehousing Authority to enforce the Act. All warehouse operators in the country henceforth have to conform to the Act – if they are not licensed under the Act, they are not allowed to issue warehouse receipts. This has been attempted in a number of emerging markets over the past two decades, but rarely successfully – at the very least, introduction of such an Act and then, creation of a warehousing authority would be a slow process. In a private system, selected warehouse operators would try to act collectively to meet the requirements of, in particular, banks – they would set up an association which provides something like a brand to properly run warehouses/collateral managers, and while it could not close improperly run ones, it can disbar them in a public manner, from the association.
115. But having a system of licensing or a self-regulating group of warehouse operators may not be sufficient. International experience shows that public warehouses are supported by some form of credit enhancement. The logic is that there are a number of safeguards in place to ensure that only reliable, financially strong and well-insured operators engage in warehousing services; but that if these safeguards fail, the depositor or financier has access to a “collective insurance” created by the warehousing industry itself. It should be noted that if there is sufficient trust in individual warehousing companies (e.g., because they are able to provide sufficient bank guarantees or performance bonds), there is no need for a collective scheme.

116. Different forms of credit enhancement are possible: it can be an Indemnity Fund, warehouse-specific bank guarantees, or insurance bonds. The latter two are typically paid for by each warehouse operator, and continuously renewed. It would seem that in Cambodia, banks or insurance companies are not yet ready for such products, and the provision of these instruments by international companies is unlikely. So an Indemnity Fund would be the only option, but in setting up such a fund, one needs to exercise caution.

117. Historically, Indemnity Funds are created by the industry itself as a form of self-insurance, with each operator who is licensed to operate a public warehouse collecting premium payments from depositors and transferring them to the Fund. The principle should indeed be that a Fund is set up pursuant to the desire of the private sector, and that it should be funded by private sector contributions. However, it takes a long time to build up a sizeable Fund in this manner, and thus in a number of countries, the Government and/or donor agencies have taken the lead by lending money for the creation of an Indemnity Fund, which is then reimbursed over time from the warehouse operators’ premiums (in turn, the warehouse operators include these in their storage fees).

118. Setting up an Indemnity Fund – operational issues to consider. An Indemnity Fund is to provide money to indemnify depositors or their financiers for losses incurred due to the warehouse operator’s failure to meet obligations. It is one in a layer of risk mitigants. It adds to, but does not substitute other risk management mechanisms. The due diligence done before licensing and approving a warehouse operator, minimum capital requirements, the operational controls on warehousing (both internal and external) and insurance policies are all supposed to prevent the Fund from ever being called upon to pay. When setting up a Fund, the following issues should be considered:

50 By giving a guarantee or writing an insurance, the bank or the insurance company puts its name and reputation behind that of the warehouse (although in the case of insurance companies, they normally set up poorly capitalized special purpose vehicles to provide such coverage, so their total exposure is limited). They are not likely to do so at anything less than a prohibitive cost unless if the warehousing company is large (so that it can absorb large losses in one of its warehouses) and has a long and positive track record (the warehouse assets including land are not enough; as noted before, the value of goods in a warehouse can far exceed the value of the warehouse itself). In Cambodia, there are no warehousing companies that meet these conditions.
Objective: What performance failures are to be covered? Only discrepancies between stated and real qualities/quantities of commodities in store with the warehouse operator, or also, other failures (e.g., lost opportunities because an operator is slow in delivering goods)?

Complementarity: A Fund that can cover defaults by the largest warehouses would require too much funds and thus be overly expensive. It should thus be complemented by other risk management methods, e.g., proper procedures, and liens on the warehouse operator’s assets. To what extent should these methods be spelled out in the admission criteria for the Indemnity Fund?

Oversight: One possible arrangement could be for the Fund to have a Board consisting of representatives of depositors, with presence of one or more government representatives (e.g., from the Ministry of Economy and Finance and the Ministry of Agriculture). Direct control by the Government should be avoided, as this could make the Fund prone to political interference.

Day-to-Day Management: Even if the initiative for an Indemnity Fund is taken by warehousing companies or by a commodity industry, day-to-day management of the Fund could be entrusted to a public or semi-public department or agency which has expertise in dealing with warehouses (this is the arrangement in a few States in the USA); or a management structure set up by the industry could be given a semi-public status. To reduce risks further, it is quite common that all decisions relating to pay-outs have to be made by the Board, which consists of a broad range of stakeholders, ensuring that there is a good chance that fraudulent claims are detected.

Expenses: Administrative expenses of the fund should be explicitly capped in terms of percentage of annual premium payments (say, 10 %)

Funding Method: As long as the Fund is below is target size, depositors into accredited warehouses should pay a low percentage share of the value of their goods (say 0.05 per cent – on US$ 500 million of deposits, this will raise US$ 250,000 a year). The payments can be collected through the warehouse operator. Once the Fund target size is reached, these fees should be stopped.

Fund Size: The Fund should be at a level that allows it to deal with 2-3 defaults. The Fund’s maximum payment in case of defaults could be capped, but even then it is necessary to consider how the Fund can be enabled to have sufficient capital already at an early stage.

Indemnity Procedures: What documentation should the depositor submit in claiming for a payout?

Indemnity Payments: Should the payout for each individual depositor be capped? At what prices should the missing paddy/rice be compensated? Should compensation be for 100 per cent, or a lower percentage?

119. A warehouse receipt finance indemnity fund for Cambodia – possible way forward. When structuring an indemnity fund for the warehousing industry, the normal principles of distribution of risks should be applied: a specific risk should be
allocated to the party best able to assess, mitigate and manage it. However, if this “optimal” party is unwilling to take on the risk, there tend to be second-best solutions, even if these come at a somewhat higher cost.

120. The optimal scheme suggested for Cambodia is one that has, as warehouse operator, a collateral management company (perhaps promoted by Cambodia’s banks); operating alongside large public warehousing companies with interconnected networks of warehouses. If the credit committees of the banks active in Cambodia are satisfied with the credit risks posed by these intermediaries, there should be no need for an Indemnity Fund. This is, however, unlikely – even in countries with a well-established warehousing industry like the USA warehouse clients and users still want to have an indemnity fund.

121. In the specific context of Cambodia, an Indemnity Fund could be created in the following manner.

- First, after consultation with banks, two or more warehouse operators (collateral managers/public warehouses) create a Warehousing Association, which sets strict criteria to its members (with an annual revalidation). Members of the association thus get a premium brand, which presumably will be associated with easier, cheaper bank funding available for goods deposited in the members’ warehouses. This, in turn, should lead to more business for these warehouse operators, which in turn will attract other operators to try and become members of the association.
- The Association sets up an Indemnity Fund (endorsed by a representative set of actors in the rice sector), with its members contributing a small percentage of the value of the goods in storage (say, 0.02 per cent per month), which they in turn charge to depositors. To kickstart the Fund, it receives a low-interest loan with a grace period of a number of years before it has to start reimbursing, from or through MEFF (which could have a supervisory role over the Fund).

122. An Indemnity Fund clearly cannot protect the warehousing industry from a catastrophic series of defaults – it would be too expensive for depositors to build up such a fund. Rather, in combination with a set of other measures (linked to the licensing of the warehouse operators that are allowed to issue warehouse receipts), it helps ensure that farmers and traders can feel confident when depositing their paddy in an Association Member’s warehouse, and that banks can be confident of a high recovery in case of default on individual loans – up to a certain amount. It would thus lower the psychological barrier – the lack of trust in an instrument unknown and untested in Cambodia – both for depositors and for financiers to use public warehouses and collateral managers.

123. Those initially creating the Association and with it, the Fund, have to weigh the advantages and disadvantages. The main advantage is that they are more likely to attract deposits, and can play a more active role in arranging bank loans. The disadvantages are that they have to charge a marginally higher monthly storage fee and thus become marginally less competitive; and that small warehouse operators, by meeting the criteria of the Association, can become Member and thus, become an acceptable counterpart for banks. In an environment where warehouse receipt finance is unfamiliar, the advantage is likely to outweigh the disadvantages.
124. From a public perspective, there are two good reasons for supporting the Indemnity Fund in the manner outlined above. Firstly, it will encourage faster adoption of the warehouse receipt system, so that user costs can be kept low without endangering the system’s sustainability. Secondly, it will encourage warehousing companies and putative collateral managers that are not among the initial creators of the Warehousing Association to improve their systems and practices, thus stimulating the emergence of a diverse and widespread network that will support warehouse receipt finance for as large a group of farmers, traders, millers and exporters as possible.

125. The low-interest loan could come from the Government, for example using part of the funds now set aside for the “Partial Credit Guarantee Scheme for Rice Millers” – US$26 million which so far have remained idle.

126. There are alternative ways of structuring an Indemnity Fund that would effectively mitigate the risks of warehouse receipt finance if it proves impossible to set up an Indemnity Fund in the manner described above, and for which the funds in this Guarantee Scheme can be used. The Partial Credit Guarantee Scheme, as it is now, does not address the critical risks faced by banks. It covers a portfolio of loans rather than individual loans, and banks remain responsible for the first loss up to 1.5% of their loan portfolio; the next tranche of losses, from 1.5% to 8% will be paid from the Guarantee Fund. In warehouse receipt finance, it is the first tranche of losses that banks have to fear. The typical “risk cascade” is as follows, using the case of collateral management:

- The collateral manager only guarantees a part of the paddy/rice in the warehouse, say 95 per cent (this is negotiated). If according to the record, there should be 1,000 tons in the warehouse but on emptying it, it is found there is only 950 tons, then this is a problem for the borrower, not for the collateral manager or the bank.
- The bank only finances a percentage of the paddy/rice, say 80 per cent. So if in the case of default by the borrower and forced liquidation of the stock, it is found that instead of 1,000 tons in the warehouse, there is only 800, then this is a problem for the collateral manager (who has a liability of 150 tons towards the borrower), but not for the bank.
- Only if disappearances exceed 20 per cent, in this example, is the bank at risk. The bank has a claim on the collateral manager, but payment may be very slow. This is where an indemnity fund can provide a real value-add.

127. Disappearances/thefts become a problem if they can continue over a prolonged period. It is physically difficult to empty a 5,000 tons warehouse over a weekend, it would require 250 rides with 20-ton trucks and would hardly go unnoticed. The procedures that banks and collateral managers have cannot eliminate the risk of theft, but they are meant to ensure that it is detected fast and, in the risk cascade described above, the risks therefore do not fall on the collateral manager, let alone the bank. The crux of the matter lies in the perception of the bank on the speed

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51 As an illustration, the Indemnity Fund in the State of Tennessee is set at between US$ 8 and 10 million; in Idaho, US$ 10 to 12 million; in Ohio, between US$ 10 and 15 million. In each, the value of grains produced is significantly higher than that of Cambodia.
at which problems can be detected, and the bank can react to the events. From this perspective, a guarantee scheme that provides a first loss is an effective way to give the bank some protection against the risk the problems are detected late. A guarantee that does not cover the first loss may well be considered by a bank as an expensive product that offers no real value: even in the worst case, the bank’s procedures should prevent losses from rising above certain levels.

128. In addition to protecting banks against risks, the indemnity fund could insure collateral managers against certain risks. There has been so far no collateral management in Cambodia – the country is thus an unknown, and risk perception will automatically be high. Collateral managers guarantee to the bank the continued presence of commodities used as collateral for loans. If the goods are not there when the borrower defaults, the collateral manager is liable towards the bank – possibly for millions of US$, as compared to the mere thousands that it had received as collateral management fees. Collateral managers charge a fee that includes their costs (affected by things such as the proximity of the warehouse to other facilities managed by the company), a risk premium and a profit margin. To keep the risk premium low, the indemnity fund could provide explicit risks coverage against certain events (e.g., the risk that a borrower by force takes control over a warehouse, and the local police refuses to intervene).

129. One may also consider providing guarantees against other perceived risks that are almost impossible to manage for a bank, in particular legal risk (it does not appear that there are international precedents for this, but that should not stop Cambodia from considering such innovative approaches). Banks will run “what if?” scenarios when looking at the possibilities for warehouse receipt finance, and one large “what if?” relates to the actual interpretation and implementation of Cambodia’s laws and regulations relating to warehouse receipt finance. In the absence of jurisprudence, there is simply no certainty about the outcome of legal cases. A guarantee fund could cover key legal risks – for example, imagine that a prominent panel of Cambodian lawyers has found that a certain loan structure indeed protects the bank in case of borrower bankruptcy: the borrower should have no problem in taking possession of the collateral and selling it. The guarantee fund can then write a cover that will indemnify the bank if, in the case of a bankruptcy, a local court intervenes and declares that the goods in question are to be part of the overall bankruptcy proceedings.

130. Moral hazard risks need to be considered before introducing new facilities. The typical risk cascade of warehouse receipt finance, with depositors and collateral manager both suffering significant losses before the financier is affected and before insurances or guarantees can be called on, is one important protection against moral hazard issues. Reducing the degree of freedom in making choices provides further protection: moral hazard is much less if all goods that enter into a warehouse accredited by the insurance or guarantee agency are automatically insured at the moment that they enter the warehouse (i.e., no discretion what to insure or what not; no discretion in deciding to insure now or later).

131. To summarize, in the optimal situation, it would be the responsibility of the firms engaged in public warehousing and collateral management for the rice sector (firms that are still to be developed in Cambodia) to take the initiative to set up a self-regulatory body – a Warehousing Association – that sets out prudential
rules and regulations, and that contains an Indemnity Fund to help build trust in the warehouse receipt system. Donor agencies could assist such an industry effort with technical assistance; and the Government of Cambodia, with its own funds or on-lending donor funds, can lend the capital necessary to make the Fund effective from its inception. But if this does not work out, as long as key rice sector stakeholders support the establishment of an Indemnity Fund and contributing over time to its capitalization, the Government can use its existing idle funds to provide the original capital of an Indemnity Fund, which can write cover (in a transparent manner) for otherwise unmanageable risk, such as the first-loss risk of banks, some of the risks perceived by collateral managers, and legal risk.

4.4 Public warehousing – building a backbone for future rice exports

132. If Cambodia is to achieve its objective of exporting a million tons of milled rice, some investment will be required in new mills, but even more so, in warehouses and transport gateways. Under the current scenario, many of the warehouse and transport investments will be made by mill companies, for their private use. An alternative would be to have a program for the development of public infrastructure (which may be managed by the private sector), which would release the mills from the need to each set up their own private infrastructure.

133. Building a public warehousing backbone for supporting the expected future rice export flows is a prime candidate for such an effort (note again that “public” refers to the fact that such warehouses will be open to the public at large, not just to its owner; the warehouses could be either publicly or privately owned). Figure 7 describes how such a warehousing network, equipped with an electronic trading system, can serve the Cambodian rice industry.

134. One part of this network would consist of relatively small (say 10,000 tons) “feeder warehouses” for paddy in producing areas (and even smaller temporary collection warehouses, once farmers’ groups become well-organized). Larger, more central warehouses would be used for storing paddy for longer periods, and for storing rice pending its dispatching to distributor’s warehouse or the export ports. Millers who are close to a public warehouse, or who unable to get finance under a collateral management arrangement, can use the warehouse to store paddy without much burden on their working capital. They can also respond more flexibly to orders for rice, as they are able to buy the corresponding paddy through the electronic system of the public warehousing network.

135. Warehouses for milled rice at the export ports would permit exporters to accumulate sufficient volumes to meet export orders without having to self-finance the stocks. Furthermore, through the electronic network, rice polishers can more easily aggregate the volumes needed to supply against a large export order.

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52 It takes 3-4 times longer to receive rice that is arriving in small volumes by truck or small boats and then to prepare it for exports than to load it into the export vessel.
Figure 7: How a public warehouse network can help create efficient value chain

Trader buys paddy delivered from the warehouse, and has it milled, at an agreed fee (“toll-milled”). He then delivers the rice, already ordered by a wholesaler, back into the warehouse where it will stay, financed, until the wholesaler takes delivery.

Farmers can cooperate to deposit paddy in a seasonal warehouse, and offer consolidated volumes for tender.

Farmers (and others) can deposit paddy into the warehouse, get a loan against its value, and then just wait until a good commercial opportunity arrives.

The warehouse operator can offer paddy for delivery ex-regional warehouse, even if it is still in a feeder warehouse, simply by arranging the transport. Swaps of paddy could be feasible – first delivery from the regional warehouse, then replacement of the stock by delivery from the feeder warehouse.

Miller buys paddy and deposits it as rice in a port warehouse, where it will be financed until a buyer is found.

Goods are consolidated for export at a port warehouse. By having insight in stock levels throughout the system, exporters can more easily respond to large orders. Not only can they immediately (electronically) buy available rice, they can also buy paddy and arrange to have it processed by suitable millers.
Storage in the public warehouse will be at a fee, but these may well be less than the costs a depositor would face if he had to construct his own warehouse. But there are extra transport and handling charges. For many depositors, however, these higher costs will be more than offset by the benefits of the network: better finance and more operational flexibility. Paddy and rice that enter into the network can be readily financed by banks; and they can continue financing the goods as long as they stay within the network. The ability to be much more flexible in making purchasing and sales decisions creates new profit opportunities.

Where such warehouses should be constructed and what is their optimal size has to be further studied. Access to waterways is an important benefit: bulk transport by barge costs roughly one tenth of road transport, per kilometer. The costs of transporting paddy and rice to a warehouse will be higher when there are a lower number of larger warehouses. However, larger warehouses, when full, have lower management costs per ton stored, their stocks can be more readily financed, and there are more opportunities for reducing onward transport costs. Planning has to take into account among others:

- Current locations of “surplus” paddy, which is now exported as such to Vietnam and Thailand, and the production increases expected in the future;
- Location of existing rice mills and their warehousing capacities
- Eventual limits in the capacity of Cambodia’s river and sea ports; and
- Likely development of export markets (e.g. Are large contracts, negotiated at the government-to-government level, likely to become important?).

In general terms, there would be three types of warehouses:

- Feeder warehouses, for temporary storage (one month or so). These would act as collection points, where paddy is dried and graded.
- Regional warehouses, for longer-term storage. These warehouses have to be in a location from which they can efficiently receive paddy from feeder warehouses, and efficiently dispatch paddy to mills. These can be traditional warehouses where paddy is stored in bags, or silos where it is stored in bulk. Storage in silos needs some expertise as otherwise, discoloring may happen (linked to paddy staying undisturbed against the metal sides of the silo), but it has as a major advantage that, with several silos, paddy that is taken out can be mixed optimally to meet the demands for the production of a specific batch of rice – so, maximum value can be extracted from the paddy. Also, silos are often temperature-controlled, making it possible to keep the temperature below 15 °C, above which insect pests start to develop (globally, insects account for about 80 per cent of grain spoilage). Furthermore, while silos are some 50 per cent more expensive to construct than traditional warehouses (per metric ton of capacity), operation costs are only about half, mostly because the costs of loading in and loading out are much lower.
- Rice warehouses, which are likely to be at river or sea ports and in major cities. In order to store rice efficiently, these warehouses should ideally be
temperature-controlled. Currently, most rice storage in Cambodia is short-term: instead, paddy is stored and rice is mostly “produced to order”. However, if Cambodia were to invest in temperature-controlled silos, experiences in China and Thailand suggest that the economics of rice storage could change: silos may be 50 per cent more expensive to construct than warehouses, but paddy (with its bran etc.) is about 56 per cent bulkier than rice.

139. For many international banks, financing goods that are in a warehouse awaiting export is standard practice – they are already doing so in many countries, including for example Vietnam (for commodities such as coffee, fish, pepper and rice53). Financing goods in upcountry warehouses, however, can best be done by local banks which can more actively monitor them.54

140. Part of such a public warehousing program is already identified as an objective in the 2010 rice policy. The policy states that “In order to diversify and identify potential rice export markets, taking into account the geographic locations of rice production, transport modalities and export destinations, the RGC will promote the use of Phnom Penh Port as an exit point, using feeder ships to load and transfer shipments into mother ships in a third country including Preah Sihanoukville Port. Moreover, the RGC will encourage the construction of bonded warehouses in Cambodia to facilitate transportation and distribution.”55

141. The public warehouse has an agency agreement with a bank, under which it can prepare loan requests for depositors (farmers, traders, millers); loan conditions are advertised. After submission of the loan documentation, the loan is made available (transferred to the depositor’s account at the bank, or paid through a bank agent, or with payment handled through the electronic warehouse receipt system). The depositor can repay the loan in different ways. One would be to pay the bank (in return, the bank will lift the pledge against the warehouse receipt), and then request the public warehouse for delivery, against submission of the electronic receipt and payment of the warehousing charges. Another possibility would be to advertise the paddy for sale on the electronic warehouse receipt system. A trader or miller can then buy the corresponding warehouse receipts; the buyer’s payment is managed by the electronic warehouse receipt system: the bank loan, including interest is paid;

53 This is a relatively new practice in Vietnam; a decade ago, commodities would often be transported to Singapore and stored there, awaiting a buyer, just for the purpose of financing the stock. But in recent years, international warehousing companies have become more active in Vietnam, and the country’s perceived risk has fallen. In general, the warehouses involved in warehouse receipt finance are in bonded areas, and are owned by joint venture companies of which the foreign partner has an international track record with issuing and managing warehouse receipts. There is still very little upcountry warehouse receipt finance in Vietnam.

54 IFC is supporting the involvement of local bank in agricultural warehouse receipt finance through its Global Warehouse Finance Program; in January 2012 it signed its first loan agreement, for US$ 20 million with Techcombank. Techcombank had already started financing upcountry stocks of export commodities, in particular coffee in warehouses accredited to the Buon Ma Thuot Coffee Exchange Center, the country’s first commodity exchange.

warehousing charges up to the day of purchase are paid; and the remainder is paid to the original depositor. The buyer can, in turn, avail himself of a new loan facility, which will again be secured by a pledge against the electronic receipt.

142. **For good order, the same system can be easily used to act as a procurement platform for rice mills or traders.** In this case, after having obtained an agreement with a bank to finance goods in storage, the buyer negotiates with one or more warehousing companies on the purchase of paddy, verifying that the warehouses are able to buy the quality he wishes. The various warehouses then display the prices on offer at each moment (the buyer pays for drying and storage, as well as grading and procurement fees). Figure 9 illustrates how such a scheme can work.

143. **Investment requirements for a public warehousing system for rice.** All the paddy produced that is not immediately consumed or wasted is, by definition, stored somewhere. However, storage arrangements may be sub-optimal. The traditional way of looking at this is to consider storage losses (e.g., if storage arrangements do not permit for effective pest control, losses are expected to be higher), and logistics costs (are the warehouses in the right places, or do depositors incur unnecessary transport costs because they are not?).

144. **In this report, no judgement is made about the relative merits of various levels of storage** – that is to say, questions such as “do the lower losses in a modern warehouse make up for the lower costs of village-level storage?” Instead, the starting point of this analysis is that:

1) There will be a growing marketable surplus of paddy in Cambodia; and

2) Both for this paddy and for the paddy that is now exported, unprocessed, to neighbouring countries, it is desirable to build an efficient value chain that permits it to be processed in the country and exported as milled rice (note that for some paddy, continued export to a neighbouring country may remain economically optimal even if there is an efficient value chain in Cambodia, for example because producers are close to the border and even taking into account transport costs, can realize better prices on the other side).

3) This new value chain will require new warehousing infrastructure, with the warehouses acting as agents for banks.

145. **Without concerted action, individual traders, mills and exporters will build these warehouses, but this will be a sub-optimal solution in terms of costs and efficiency.** Instead, a network of new warehouses, open to public use, will provide a much more efficient backbone for the flow of paddy and rice from production to final destination.

146. **The exact choices on where and how large to construct such warehouses can best be made in a decentralized manner, using a mechanism like that described above as an alternative manner to handle the proposed Chinese investment:** create an investment consortium that would be open to joint ventures with various investors that are interested in building warehouses and related infrastructure; define “concession areas”; and then invite interested parties to express
their interest in setting up a warehousing joint venture, with investment loans on a preferential basis available to winning bidders.

147. Costs for each specific warehouse are location-specific—below, some of the factors that should determine investment choices are spelled out. Costs can vary widely, linked to land prices (a warehouse capacity of 50,000 tons requires some 100,000 m² of land, for the whole warehousing complex), the eventual needs for land-filling, and the quality of the soil (if the soil is soft, deep pillars need to be struck, which can double the cost of warehouse construction). Temperature-controlled silos are more expensive than traditional “flat” warehouses, but they have operational benefits. There are also economies of scale, in particular up to a 10,000 tons capacity.  

148. Location-specific costs are much more important than the costs of a warehouse or silo per sé— for example, buying a 3,500 tons silo costs US$ 170,000 in Cambodia, but building a storage facility with six such silos may cost US$ 5 million, all costs included, because of all the other investments that need to be made to manage the facility. A 12,000 tons flat warehouse costs (for simple building materials and work) some US$ 100,000, but actually acquiring the land and building the whole storage facility may cost more than US$ 2 million.

149. As an average, an all-in construction estimate of US$ 250 per ton of warehousing capacity (land acquisition and preparation, drainage system, warehouse construction, with the associated costs of dryers, power supply access roads, jetties, weighbridges, dryers, offices, grading facilities etc.) is being used in Cambodia, and this is comparable to costing in countries like India and Thailand. If public warehouses are to be built for the storage of 1 million tons of paddy, bought during the main harvest time, for processing in Cambodia, the total required investment would then be in the range of US$ 250 million.

150. When deciding on the specifications of an individual warehouse investment, one has to weigh two factors:

- In favour of large warehouses: warehousing has economies of scale, in terms of the incremental construction costs of the building, the costs of equipment (e.g., even a small warehouse would need at least one weighbridge and one dryer), and operating costs (one security guard a

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56 Even the dimensions of the parcels of land that are available have an impact on costs. One should build a warehouse in such a way that its longest walls are oriented along an East-West axis, to reduce the heating of the building by the sun; one must also keep in mind the prevailing directions of the wind, of which one can benefit to cool the warehouse interior. If the dimensions of the land do not readily accommodate such needs, costs are increased. See for an overview of all such factors D.L. Proctor (ed.), Grain Storage Techniques, FAO 1994.

57 As a broad estimate, if one indexes the construction costs per ton of warehouse capacity (not including the infrastructure and equipment outside of the warehouse) at 100 for a warehouse of 5,000 tons, then the index for a 10,000 tons warehouse would be 70, and for a 20,000 tons warehouse, 60. Beyond 20,000 tons, construction costs per ton will not fall much—rather than making the warehouse even larger, it may actually be cheaper to build two warehouses next to one another.
night can patrol a 40,000 ton warehouse as easily as a 10,000 ton warehouse).

- In favour of small warehouses: the transport costs for depositors depend largely on the distance to a warehouse. As paddy is a bulky commodity and thus expensive to transport, one cannot expect that a warehouse, just because it is bigger, will attract paddy from a larger distance away.150.

151. **So the optimal size of a warehouse depends very much on the production of paddy in its environment**, or in the case of a warehouse along a transit route, on the amount of paddy that would normally pass near its site. One can only justify very large warehouses in key production and transit areas.

152. **Looking at it from the point of view of depositors, who would be potentially attracted by a public warehouse because it gives them access to cheaper finance, the same factors are at play.** When a public warehouse is being used to support a credit, the borrower evidently has to pay the costs of warehousing on top of the interest charges. This is only worthwhile for the borrower if a) this total cost is less than the cost of alternative financing methods; and b) the operations that he can engage in thanks to this credit have a return that is sufficiently higher than the overall financing cost. The cost of a warehousing arrangement is largely fixed, so the higher the volume of paddy/rice covered (which determines the total loan size), the lower the costs per ton. The impact of the size of the public warehouse on the profitability of using it for financing purposes is illustrated in the following table.
Table 5: Relationship between warehouse size and attractiveness of the warehouse for financing purposes

<table>
<thead>
<tr>
<th>Warehouse capacity (tons)</th>
<th>5000</th>
<th>10000</th>
<th>20000</th>
<th>40000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment cost (US$ million)</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Tons stored in warehouse</td>
<td>4000</td>
<td>8000</td>
<td>16000</td>
<td>32000</td>
</tr>
<tr>
<td>Warehousing costs, fixed/year</td>
<td>10000</td>
<td>15000</td>
<td>20000</td>
<td>300000</td>
</tr>
<tr>
<td>Warehousing costs, variable/year</td>
<td>20000</td>
<td>30000</td>
<td>40000</td>
<td>60000</td>
</tr>
<tr>
<td>Break-even charges per ton</td>
<td>30</td>
<td>22,5</td>
<td>15</td>
<td>11,25</td>
</tr>
<tr>
<td>Financing benefits for depositors/ton</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
</tbody>
</table>

Notes:
- An average capacity utilization of 80% is assumed.
- Costs are indicative and not necessarily representative for Cambodia. Fixed costs are assumed to be 5% year of the initial investment cost – a low estimate which assumes concessionary finance for warehouse construction.
- Break-even charges are the charges per ton, per year at which the warehouse operator breaks even.
- Financing benefits for depositors consist, on the one hand, of a reduction of the interest rates paid on their existing loans (it is assumed that this reduction is 2 per cent, in line with the experience in India) – this is because banks can reduce interest rates if their risks reduce, it is not an interest rate subsidy –, and on the other, of the extra profits they can achieve because they are able to finance, and thus store more paddy (it is assumed here that they rotate their capital twice a year, i.e., the average storage period is 6 months).
- It is assumed that the gross profit margin of mills, prior to paying transport and warehousing charges, is 5% (given that they do not have to invest in their own warehousing infrastructure or spend on warehousing staff), and that their access to finance is leveraged from 25% of the goods in store to 80%.
- Transport and handling costs, for millers to deposit their goods in the public warehouse, are not taken into account in this table.

153. **Small warehouses will have to charge too much to depositors if they are to break even.** Depending on the actual profitability of rice mills, public warehouses of a capacity of 10,000 tons or more may be attractive vehicles for warehouse receipt finance. Less than that, and the costs that the warehouse operator has to charge in other to cover his costs are likely to exceed the benefits that a depositor can draw from warehouse receipt finance.

154. **Smaller feeder warehouses, which would basically act as collection points for forward shipment to the larger warehouses, can have lower storage capacity.** For the construction of the warehouses and associated transport infrastructure (jetties and the like), one is probably best of with a project finance structure, in which donor
agencies, other supporting entities, the investor firm and capital market investors all cooperate. This would be structured through an offshore Special Purpose Vehicle (SPV) which would raise funds from these different groups. Such an SPV can issue notes to investors. To secure its future revenue, the SPV would sign a long-term contract with the warehousing company in which the latter guarantees certain minimum monthly payments. This is similar to the kind of structures that have in recent years become common in other infrastructure projects (e.g., in the hotel industry).

155. **One should simultaneously plan how to resolve working capital constraints when considering such a large investment in infrastructure.** To fully use the already installed milling and drying equipment of the large, modern mills would require working capital finance to buy some 300,000 tons of paddy in each of the two seasons – at current prices, this implies a fund of around US$ 100 million. One can expect that if more working capital becomes available, millers will buy more dryers, and are thus able to buy more paddy – which can absorb another US$ 50 million. After this, one would then have to fund the procurement of the paddy that would come to fill the public warehouse network described in this section – another US$ 100 million of working capital at least for the investment in this network to start making sense.

4.5 Electronic warehouse receipts

156. **A good Electronic Warehouse Receipts System (EWRS) will do much to compensate for the extra logistics costs of using public warehouses.** Individual companies could each operate their own EWRS, but it would be better if one common EWRS linked the whole of Cambodia’s rice sector. It could be operated by an independent EWRS company, which charges a small fee (say 10-25 US$ cents per ton) for creation and transfer of a warehouse receipt. In addition to offer flexibility and ease of use to depositors, an EWRS is much better protected against fraud than a traditional paper-based warehouse receipt system, and thus, can provide attractive avenues for banks to finance stocks.

157. **An EWRS is similar in concept to an electronic bank or stock trading account.** Physical paddy or rice is deposited in a silo or warehouse that has earlier been approved by the EWRS operator, or which is under the management of a collateral management company that has been approved by the EWRS operator. The warehouse operator then issues an electronic warehouse receipt – this can be done online, or through mobile phone. This e-certificate creates an electronic account balance, denominated in the specific type of rice deposited. Balances can be traded, offered for sale, encumbered for the purpose of getting a loan, submitted in lieu of a physical delivery to a commodity exchange, etc. Depositors can split their e-certificates if they find a buyer for part of their stocks.

158. **Prospective buyers can issue tenders against which holders of appropriate account balances can offer their commodities.** The system has the functionalities to deal with financial transactions, e.g., to receive and manage deposits paid to secure forward contracts, to block account balances as security for bank loans, or to manage payments against which balances of commodities have to be transferred.
159. If it links multiple warehouses, such an EWRS could among other things include the following functionalities:

- Allowing banks to finance, in a flexible manner, paddy and rice as it moves in and out of warehouses, without losing any time in procedures.
- Allowing nearby farmers/traders/millers to use the feeder warehouse and still keep their options open as to where they want to sell the paddy, and whether they want to process it into rice before selling.
- Permit the creation of a system for toll-milling, where mills would offer the use of their non-used milling capacity to third parties, for a fixed fee.
- Allowing substitution for equivalent paddy/rice in another warehouse.
- A rudimentary system for forward trading and for investment by non-rice-sector entities into paddy and rice stocks.
Figure 10: Electronic warehouse receipts: how they tie together storage, spot trading, forward trading and finance

1. The Electronic Warehouse Receipts System (EWRS) manager accredits the companies that are permitted to create electronic warehouse receipts. Strict limits on the quantities for which each can issue receipts are coded into the system.

2. The EWRS manager then registers those eligible to use the system, including for trading (the “account holders”). These participants have to meet certain due diligence criteria. They sign an agreement with the EWRS manager which will govern all their transactions – the system operates as a closed-end user group.

3. Say that a cooperative whose warehouse has been accepted for issuing receipts up to 500 tons deposits this amount of wheat Grade A into its warehouse. A receipt is created in the E-WRS, and the cooperative’s account is credited with this same wheat. The cooperative can see and use his account online.

4. The cooperative can through his account manage his stocks (with highly secure access controls). This can be used to check audit trails, manage the expiration dates of warehouse receipts, arrange email notifications, and generate series of reports (e.g., transactions, or positions by counterparty, by certificate expiration, etc.).
The account also offers an “actions” sidebar. One possibility is to make transfers, for example to execute a bilateral transactions which had previously been agreed on by phone. Goods can be tendered for sale, either to all the users of the system, or to selected ones.

Forward transactions (offers for sale at some time in the future) are also possible.

Users can both buy and sell through the system, and they can search for deposits that meet their requirements.

The system makes it possible to provide finance smoothly once stocks enter into an approved warehouse. The depositor can either put a lien on a warehouse receipt as per a bilaterally agreed loan, or he can tender his receipts as collateral for the cheapest loan offer.

The financier is thereafter not forced to maintain his position, but can sell the paper onwards to a third party; and so on, until expiry or withdrawal (by payment of the credits due) of the warehouse receipt. Import of data into the bank’s own systems is easy and safe.

Source: Author. Sample screens provided by the Integrated Commodity Exchange, ICX
The software for an EWRS can be bought off-the-shelf, and then adapted to Cambodian needs. The initial investment for such a system would most likely be less than US$ 100,000. It can be operated with very little manpower. Typically, the system will support both on-line transactions, through the internet, and offline ones, to permit those without ready access to the internet to make use of the system. It permits users to manage their accounts, and generate historic reports. Input and output files can be linked to other electronic systems, e.g., a bank’s loan management system. A good EWRS has a very high level of data protection, equivalent to that of banks for their electronic banking. The revenue of an EWRS would come from a small fee on most transactions. In the South African model, the original creation of an electronic receipt, by the deposit of grains in a warehouse, is for free, as a way to encourage those owning grains to register them through the EWRS. But each subsequent transaction, whether for trading or financing purposes, is charged, at a low fee (less than 0.1 per cent of the value of the transaction).

For the time being, Cambodia only has a collateral registry, and this doesn’t work that well. When upgrading the collateral registry software, one should consider that an electronic warehouse receipt system offers all the functionalities of a collateral registry, and also much more – at a relatively low cost. If one believes that a warehouse receipt finance system can be introduced in Cambodia over the next few years, it is highly advisable to invest in an EWRS already now: the benefits that such a system brings even to a fledgling warehouse receipt system are considerable, and it will much boost the popularity of warehouse receipt while simultaneously reducing the risks of their use.

4.6 The Role of and Support to banks

Cambodian banks show great interest in financing the rice sector, but are held back by their risk assessments as well as by the provisioning rules of NBC. NBC provisioning rules could be reviewed and be made to reflect the typically lower risk and lower “loss given default” of warehouse receipt finance, which reduces the costs for banks. These benefits of warehouse receipt finance, when properly structured, are recognized in the Basel 2 and 3 agreements. More broadly, banks can be assisted in developing the warehouse receipt financing techniques discussed above, and in developing proper risk management and risk assessment techniques for such finance.

Currently, Cambodian banks finance against the security of land, real estate and equipment (they may make a charge against all other assets, but they do not count the value as these assets as collateral). The miller can, for example, expect to get a credit line equal to 60-70 per cent of the estimated value of his land. Ideally, one would hope Cambodian banks move from financing against fixed assets to

Details can be found in BIS, Basel II Accord, Technical Guidance, instructions provided under the heading ‘Operational Requirements’. Benefits in terms of provisioning requirements for commodity loans backed by commodity stocks – if properly controlled – exist both under the Standardised Approach and the Internal Ratings Approach of Basel II. These elements have been retained in Basel III.
financing value chains – this is also known as borrowing base or value chain finance. This implies that the bank finances the ongoing operations of its client as a function of its client’s daily business - when the client needs more funds for its operations, e.g. to build up a stock of paddy, or to finance the build-up of a large rice stock in anticipation of a large rice delivery, the bank’s loan is automatically increased, without any new negotiations.\textsuperscript{59} Where possible, fixed assets such as equipment will be financed through long-term arrangement, for example by sale-and-lease-back to the miller; or longer-term credits provided by the Export-Import Bank of the country supplying the equipment. Table 6 illustrates how borrowing base finance would work, with some (conservative) numbers to better explain the example.

\textsuperscript{59} NBC is trying to stimulate banks to lend against cash flows, but its approach is to encourage mills and others to improve the quality of their financial management and their bookkeeping so that banks can better understand the cash flows.
Table 6: Illustration of borrowing base finance for a rice miller/exporter

<table>
<thead>
<tr>
<th>Asset class</th>
<th>Financing %</th>
<th>Beginning of season (000 US $)</th>
<th>Height of season (000 US $)</th>
<th>End of season (000 US $)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Export value of paddy</td>
<td>Bank funding</td>
<td>Export value of paddy</td>
</tr>
<tr>
<td>Land, real estate</td>
<td>70%</td>
<td>210</td>
<td>210</td>
<td>210</td>
</tr>
<tr>
<td>Equipment</td>
<td>60%</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Commodities under borrower’s control</td>
<td>40%</td>
<td>300</td>
<td>120</td>
<td>125</td>
</tr>
<tr>
<td>Commodities under collateral manager’s control</td>
<td>70%</td>
<td>150</td>
<td>105</td>
<td>300</td>
</tr>
<tr>
<td>Commodities in public warehouse (e.g., port warehouse)</td>
<td>80%</td>
<td>50</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Post-shipment documentation</td>
<td>90%</td>
<td>100</td>
<td>90</td>
<td>200</td>
</tr>
<tr>
<td>Total credit line</td>
<td></td>
<td>585</td>
<td>750</td>
<td>690</td>
</tr>
</tbody>
</table>

164. In addition to the funds that the bank can provide against fixed assets, in this model, the bank will start financing against the collateral of paddy and rice as it moves through the value chain to its final destination.

- **Step 1**: finance against stocks in warehouses controlled by the miller. Say that the miller operates purchasing operations from temporarily-rented rural warehouses, where farmers and small traders can bring their paddy. The miller tests its quality, and dispatches it according to an organized transport schedule to his central milling and warehousing location. The banker can employ monitoring agents to be present at these procurement warehouses, who send,
say by SMS, regular updates on the volumes of paddy bought. On receiving an update, the bank can immediately provide extra working capital to the miller. This loan cannot be for the full market value of the paddy as measured in the main markets, because the paddy still has to be transported and dried – involving costs and risks – and moreover, the bank has no priority claim on the paddy. Thus, it will only be for say 40 per cent of the reference value. If the paddy in these procurement warehouses were worth, say, US$ 125,000 once it is milled and ready for exports, the bank could provide a credit line of US$ 50,000. The fixed costs of collateral management do not make it worthwhile for the bank to recruit a CM to control the same for the rural warehouses rented by the miller, so for the paddy in these warehouses, the bank continues advancing only 40 per cent of their value.

• **Step 2:** the bank employs an independent party, the CM, to take control over the miller’s central warehouse. In the course of the harvest season, this warehouse fills up, and the CM, acting as the bank’s agent, continuously reports on these numbers to the bank. As the paddy is now in a better location, and moreover, the CM guarantees its continued presence, the bank is willing to finance a larger part of its export value, say 70 per cent. This implies that just by moving the paddy, the miller can increase his credit line. Say that at the height of the season, he moves all his paddy from the procurement warehouses into the central warehouse; this immediately unlocks additional funding of US$ 37,500 (the bank now finances 70 instead of 40 per cent of the value of the paddy). No further negotiations are required between the bank and the miller, the additional funding is unlocked by the simple fact of moving paddy up the value chain.

• **Step 3:** the paddy is processed into rice, and transported to a port warehouse. The bank should now be ready to give it an even higher collateral value, and fund say 80 per cent of the export value of the milled rice (at this stage, collateral management becomes safe, as the buyer and the market price are firmly known).

• **Step 4:** the bank takes on the payment risk of foreign buyers. Once the rice has been shipped, the miller has receivables – financing against the security of these receivables is an even lower risk for the bank (assuming that the buyers either have a high reputation, or have provided payment guarantees from their banks), and thus, it can immediately provide funding against these receivables at 90 per cent of their face value. Surprisingly, while there is some post-shipment finance, there seems to be no factoring in Cambodia – this rather simple financing technique would permit Cambodian rice exporters to receive immediate payment against their export invoices to bank-accepted buyers.

165. In all, the bank provides a flexible credit line that goes up and down with the value of the paddy and rice in his client’s value chain. In the example, at the height of the season the bank provides a minimum credit line of US$ 360,000 against

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60 These are forms of post-shipment finance, when rice has already been shipped with documentation conform to the sales contract, and payment by the buyer within a specific timeframe is all but certain.
the security of land, real estate and equipment; and in addition, it provides US$ 390,000 against the miller’s paddy/rice as it moves through the chain – in all, not counting the funding against hard assets, the bank finances over two thirds of the miller’s US$ 575,000 of working capital requirements. And this working capital funding fluctuates with the miller’s operations. If it employs sound monitoring and collateral management agents, and has a proper system in place for managing this kind of finance the risks for the bank in a borrowing base funding are low compared to, say, funding against fixed assets.

4.7 Refinancing warehouse receipt loans

166. Banks generally prefer liquid instrument over illiquid ones, so it would greatly boost the attractiveness of warehouse receipt finance if a facility to refinance (discount) warehouse receipt loans could be created in Cambodia.

167. Traditionally in western countries, Central Banks have provided such refinancing facilities, in the shape of discount windows for warehouse receipt loans. In most western countries as well as many others where agriculture was important (such as the Philippines, or Latin American countries), Central Bank discount windows were for a long time (until the Second World War) an important part of the enabling environment for warehouse receipt finance – generally, these facilities still exist, but are nowadays hardly used any more.61 A discount window for warehouse receipt finance (i.e., a facility for banks and other eligible institutions to borrow from the Central Bank) is offered, among others, by the Federal Reserve in the USA According to Section 13A, clause 1 of the Federal Reserve Act62, the Bank of England, the Central Bank of the Philippines, and the Central Banks of France63, the Netherlands64 and of Austria65. At least in the first three cases, it was created

61 At least not for warehouse receipt finance; they are, however, still used as a tool to support other forms of finance. For example, in May 2014 the Bank of England added, to its list of loans that it was willing to discount, export credit notes guaranteed by UK Export Finance. The Chancellor the Exchequer commented that this “should mean billions of extra lending will be made available to our exporters. And it will mean cheaper lending – saving potentially millions of pounds for large projects.” (quoted in Trade Finance, May 2014).
62 http://www.federalreserve.gov/aboutthefed/section13.htm. While general provisions for the discounting of loans made against warehouse receipts were already present in the 1913 Federal Reserve Act, this Section has been on the books only since 1923, and followed the establishment in the previous year of twelve Federal Intermediate Credit Banks that only engaged in the rediscounting of agricultural paper (warehouse receipts and livestock mortgages).
63 In 1848, the Bank of France created forty-nine "bonded warehouses", which started to provide companies with warehouse warrants for goods such as building materials, textiles, metals and colonial products; sub-discount banks also set up by the Central Bank accepted these warrants as collateral, and their loans constituted discountable paper for the Bank of France. This helped inject considerable liquidity into the monetary system and resolve a serious credit crisis. (Hubert Bonin, France, Financial Crisis and the 1848 Revolutions, http://www.ohio.edu/chastain/dh/franfin.htm)
64 In December 1855, the Dutch Central Bank recognized the warehouse warrants of one of the country’s major public warehousing companies as security, but on the conditions that a) it would be able to appoint two directors to the Board of the company; and b) the company deposited securities with the Central Bank as guarantee for eventual losses if the Central Bank had to take possession of the
because the government recognized the strong potential of warehouse receipt finance to promote agricultural processing. In Latin America as well, Central Banks have offered discount facilities for warehouse receipt loans since the first half of the 20th century. Colombia, for example, in introduced the facility in 1931.

168.  **In the USA, any Federal Reserve Bank may discount agricultural paper (for periods up to nine months) that has been endorsed by a member bank,** with paper with maturities in excess of six month having to be secured by warehouse receipts for readily marketable staple agricultural products, or chattel mortgage upon livestock. The discount facility is available only for staples stored for commercial purposes (stocks held for speculative purposes are not eligible); and the goods must be adequately insured, with the member bank as beneficiary. Since 1978 (as until 1933), bankers’ acceptances secured by field warehouse receipts are eligible for Federal Reserve discounting. The Bank of England accepts warehouse certificates, including on stocks in countries other than the United Kingdom, used in bankers’ acceptances eligible for discounting by eligible banks. Under the policy of the Philippines, the Central Bank has been directed to ensure that “all production loans given by banks to producers of rice, corn and other grains are given preference in its rediscounting” policy and that the rediscounting rate shall be the lowest preferential rate for the period.168

169.  **Figure 9 shows how a Central Bank discount window operates.** However, while NBC among its monetary policy instruments has discount facilities for a range of bank loans69, it does not currently use this instrument. At the current junction, NBC goods. See Hugo van Driel, Henk Volberda and Sjoerd Eikelboom, Longevity in services: the case of the Dutch warehousing companies 1600-2000, Erasmus Research Institute of Management, August 2004, http://repub.eur.nl/res/pub/1571/ERS%200072%20Volberda%20STR.pdf

65 Austria’s National Bank grants loans against collateral to banks for no longer than three months, with as one of the categories of eligible collateral warehouse receipts issued by officially authorized warehouses (article 51 of the National Bank Act 1984, http://www.bglegis.com). This facility was originally established in June 1890 by the Central Bank of the then Austro-Hungarian Empire.

66 As an alternative to discounting such warehouse-receipt-backed paper, banks can also sell it on the secondary market (the main one is the New York open market of acceptances), but this is not possible for all such paper: it is only open to paper backed by domestically stored staples. In 1978 (Federal Reserve Bulletin 486), this was further restricted: only receipts issued by warehouses, elevators and terminal companies “duly bonded and licensed and regularly inspected by Federal authorities” are accepted, and then only up to an amount that does not exceed the amount of the bond posted by the issuer.

67 In 1933, it was decided that in field warehousing, the warehouse operator (the custodian of the goods) was too close to the borrower (the owner of the goods), and thus the security of the bank was not strong. So receipts issued in field warehousing were excluded from the discount window. In 1978, this opinion was reversed. See Statement by G, William Miller, Chairman of the Board of Governors of the Federal Reserve System before the Subcommittee on Federal Spending Practices and Open Government of the Committee on Governmental Affairs, United States Senate, August 4, 1978, http://fraser.stlouisfed.org/docs/historical/miller/ Miller_19780804.pdf


69 Law on the Organization and Conduct of the National Bank of Cambodia, 26 January 1996, as amended on December 29, 2006, paragraph 36(1): “The Central Bank shall determine the procedure and purchase or repurchase from, sell to, discount and rediscount for banks and financial institutions:
focuses on its role as a regulator. Sector policies may weaken this prime role, and thus, NBC may not find it advisable to make its discount window operational. If this were indeed the case, it can readily be inferred from figure 9 how an alternative liquidity facility can be created. The Central Bank is simply replaced by a financial facility (such as an investment fund) operated by an entity other than the Central Bank.

Figure 9: The operation of a warehouse receipt finance discount window

Source: Author

170. Funding for such a financing facility could come from many sources. Donor agencies are one possibility. However, internationally one can find investment funds that specialize in trade finance, and which among their operations invest in loans backed by warehouse receipts; these investment funds receive their funds from institutional investors such as pension funds and family offices. The fund can be managed passively (criteria are set for loans that can be refinanced, and the process for eligible loans is then automatic) or discretionary (decisions on whether loans are accepted and at what discount rate are made in a discretionary manner – this will require tighter oversight to avoid abuses), Management can be outsourced to an existing institution (a well-managed institutional investor, or even the National Bank of Cambodia). Having the facility managed by a commercial bank would, however, create a conflict of interest.

(a). bills of exchange and promissory notes drawn or made for bona fide commercial, industrial or agricultural purposes, bearing two or more good signatures one of which must be that of a commercial bank and maturing within 90 days from the date of their acquisition by Central Bank; however, provided that bills of exchange and promissory notes drawn or made for the purpose of financing seasonal agricultural production or marketing of crops may mature within 210 days from the date of their issuing;” By simply specifying that these bills of exchange include bills “which are secured at the time of acceptance by a warehouse receipt or other such document conveying or securing title covering readily marketable staples” (in the wording of the United States Federal Reserve Act, Section 13.7), a discount window for warehouse receipt finance can be created.
A number of choices need to be made in the creation of such a refinancing facility (whether as part of the Central Bank’s discount window, or as a separate facility):

1) At which rate is the eligible paper (representing the bank loans) to be refinanced? If funds come from the Central Bank, should this be “the lowest rate of the period”, as is the case in other countries? (Anything lower would imply a subsidy, which should be avoided, but it could be set higher.) International experience suggests that trade finance is one of the lowest-risk types of bank finance, and in this category, warehouse receipt finance is even lower-risk; but would one want to be guided by international experience alone? If funding comes from others, what rate of return should they be seeking?

2) Which financiers can avail themselves of the refinancing facility? In international practice, if Central Banks operate it, only banks can use it, but which banks? What should be the criteria for the banks whose agricultural paper it is ready to refinance: for example, the bank needs to meet Central Bank criteria with respect to their internal risk management systems; and/or it should have a dedicated agricultural finance department which follows internationally-accepted practices? Furthermore, with the possibility that investment funds become involved in warehouse receipt finance, should one perhaps make them also eligible for accessing the refinancing facility?

3) What procedures should the banks follow in submitting their agricultural paper for refinancing? In a simple liquidity facility, procedures are normally kept straightforward: banks just have to submit documentation as spelled out by the refinancing fund, and then the discounting is immediate. Banks do retain responsibility for the servicing of the loan.

4) What underlying transactions should be eligible for refinancing? A wide range of choices is possible. What is an acceptable loan tenor? What are the criteria for the warehouses and collateral managers that can be used? Is it for all commodities, or just for agricultural commodities, or only for those commodities specifically listed? Would loans need to be for commercial purposes (in other words, lending for the speculative holding of stocks cannot be refinanced)? What are the insurance requirements? These choices merit discussion at a policy level to determine what exactly the Government of Cambodia would want to achieve with a refinancing facility.
5. Conclusions and Recommendations

172. The Cambodian rice industry has a large export potential. Not only is there good scope for a continuing increase in production through use of better seeds and investments in irrigation, but also, the modernization of the milling industry and the development of an efficient export-oriented rice export chain can bring considerable value-added to the sector.

173. There are a number of obstacles in the way of realizing this potential, not least of which is the need to improve the logistics infrastructure for rice trade. Another key obstacle, and the focus of this report, is that rice millers and others in the sector find themselves severely constrained in their access to working capital. Rice millers at least have some capital, even if most of it may be locked up in land, real estate and equipment, and they can use these assets to secure working capital loans. Others in the rice value chains are less likely to own valuable assets. But funding working capital needs by pledging capital assets is far from ideal, not just because it is impossible to unlock sufficient working capital loans in this manner (the value of a warehouse and the land on which it stands is much less than the value of the paddy that could be stored in the warehouse), but also, because it prevents the use of long-term assets for procuring medium- to long-term loans, which will be required to fund the growth of the rice sector. Better ways have to be found to fund working capital needs, both to enable a more efficient value chain to develop, and to unlock capital for funding long-term infrastructure.

174. Access to finance is one of the most frequently-cited constraints to the further development of rice mills and overall growth of small and medium enterprises (SME) in Cambodia. According to an IFC/McKinsey study in 2010, nearly 90 percent of Cambodia's registered SMEs (data not available on informal SMEs) have insufficient access to finance with an estimated financing gap of US$937 million. In addition to high interest rates that reduce demand for credit by SMEs as was found in a World Bank study in 2013, lending backed only by fixed assets limits access to finance. Cambodian banks generally require immovable real estate collateral to secure loans. Paddy or rice, as well as any other movable assets (i.e. equipment, inventory and accounts receivables), in general cannot be used as collateral for working capital loans. Many rice mills report to have hit the wall of working capital borrowing using their fixed assets. As a result, rice mills do not have sufficient working capital to buy and paddy for processing throughout the year, and Cambodia remains a large exporter of paddy rather than rice. It should be underlined that the key constraint is access to credit rather than interest rates per se – thus, efforts should be focused on enhancing credit access rather than on subsidizing interest rates.

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Stein et al., 2010.
The potential market for inventory-based lending (warehouse receipts, WRs) such as rice in Cambodia is attractive, not just in size (procuring enough paddy to produce one million tons of milled rice for export may require US$300 million as working capital finance, and rice for the domestic market also needs to be financed), but also in making the agribusiness sector stronger and more efficient. Overall, for movable assets, the opportunities are large as demonstrated in the secured transactions and collateral registry reform projects supported by the World Bank Group in the region and globally.

Rice millers should be seen as the prime target audience for the promotion of warehouse receipt finance. They act as the drivers of the organized, official rice sector’s finance flows. They are responsible for the most significant investments in the value chain (in weigh bridges, driers, milling equipment and warehouses), carry a large part of the costs of maintaining paddy inventory, are often required to prefinance the procurement of paddy from farmers, and also have to meet some of the working capital needs of wholesalers and exporters. The central role of millers in rice sector finance will, if anything, only grow stronger in the future. They are likely to have to carry much of the cost of improving rice production (e.g., provide better seed varieties on credit). They will need to find funds for installing the processing capacity that is needed to continue growing Cambodia’s rice exports. And they will find that in a competitive export market, the credit terms that exporters can offer are a critical tool; then, if importers insist on paying only 2-3 months after delivery and in the absence of refinancing facilities for this credit exposure, exporters will try to shift this burden of deferred payment terms on to the millers.

Therefore, developing new banking products that target rice millers make much sense. There are alternatives, but they show much less potential. Superficially, it might seem attractive to make farmers the direct beneficiaries of increased rice sector funding, for example through village-level paddy banks (one of the components in the country’s past Paddy Open Market Scheme); but both in Cambodia and abroad, such projects have shown to be very difficult with success far from assured. Sales of mills to wholesalers and exporters, and of exporters to global buyers, could in principle benefit from factoring or similar invoice discounting tools – but this will require a considerable improvement in contractual practices in the sector, will take time to develop (because buyers need to be able to demonstrate a positive track record before financiers can discount their payment obligations), and at best, take care of relatively short-term (two weeks to one month) credit requirements.

So the introduction of new financial products targeting millers deserves serious consideration. Products that make greater use of millers’ assets, are a logical choice, and one which fits in Cambodian banks’ current preferences to finance against collateral. Two forms of collateral are currently under-utilized: equipment and inventory. For equipment, leasing arrangements (including those incorporating the support of Export-Import Banks from the countries from which the equipment is sourced) should be promoted, which in the short term should take the form of an improvement of Cambodia’s leasing law and the modification of the value-added-tax treatment of leases. But leasing falls outside of the remit of this paper. Instead, this paper focused on ways to better use inventory to secure financing, and it has identified four key complementary investment options in the Cambodian rice sector that will unlock the value of paddy and rice inventory for funding the sector’s growth.
179. Three of these four options do not require large investments but instead, an improved management of existing assets. Only one, a medium- to long-term strategy that is designed to grow alongside and support Cambodia's increasing rice export flows over time, involves large-scale infrastructure investments. In the short run, much of the physical infrastructure needed for efficiently financing paddy and rice inventory already exists, at least to serve the current financing needs. Mills have made considerable investments in infrastructure in recent years, and a reasonable number now have modern warehouses equipped with all that is necessary for the receiving, safekeeping and dispatching of paddy and rice. However, this is physical infrastructure. What banks need is financial infrastructure. To turn good physical infrastructure into a financing tool for banks requires the “wrapping” of this infrastructure into a management system with which banks (and other financiers) feel comfortable. Developing such management systems is not as costly as building new infrastructure, but it requires specialized skills and systems. These skills and systems can be procured from the global market, but then need to be adapted to the specific conditions in Cambodia.

180. The first option is collateral management. This would benefit the 40 or so large, modern rice mills with large warehousing capacity. Such mills are unlikely to move their paddy to public warehouses, so if finance to this group is to be expanded, then the bank needs to move into the miller’s compound, using an independent agent (the collateral manager) to take control over the physical inventory present at the miller’s premises.

181. For these large rice mills, which need financing facilities in the US$ 5-20 million range, the cost of collateral management should not be an obstacle. But collateral management fees effectively make CMAs impractical for smaller mills. A monthly collateral fee per warehouse of US$ 1,000 is (marginally) profitable for a large collateral management firm in India; US$ 2,000 a month per warehouse is a fairly typical collateral management fee in Africa; and US$ 5,000 has been suggested (Emerging Markets Consulting, 2012) as the fee that would be necessary to entice an international company to start operations in Cambodia. Against these fixed costs, the miller would have benefits in the form of lower interest rates on loans (in India, the reduction in costs of lending is about 1 per cent), and extra credit availability (instead of lending against 50 per cent of the value of the goods in stock, the bank may lend 80 per cent – in other words, whereas before, the miller could buy, say, 1,000 tons with his own capital and another 1,000 tons with the bank loan, now in addition to the 1,000 tons the miller can buy with his own capital he has a bank loan to buy a further 4,000 tons). Whether collateral management is profitable for the miller then depends on how large his warehouse is, how large his existing loans are, and his profit margin on the extra paddy milling he can do thanks to the extra leverage on his own working capital funds. In all, an analysis of the numbers suggests that collateral management is only worthwhile for the miller if his warehouse capacity is more than 10,000 tons, and that mostly because of the extra profits that he can make by milling more paddy rather than by the reduction of the interest rate on his loan. This indicates, incidentally, that the common way in Cambodia of looking at the cost of collateral management is misleading: mills that compare (interest rates without collateral management) with (interest rates with collateral management plus collateral management fees per US$ of loan) – in other words, do the net percentage costs of lending fall or increase with collateral management? – fail to take into account the much more significant benefit
of collateral management, which is the extra profit a mill can generate thanks to the strongly increased leverage of its own working capital.

Table 7: The impact on profitability of greater leverage of a mill’s own working capital

<table>
<thead>
<tr>
<th></th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Situation without collateral management</strong></td>
<td></td>
</tr>
<tr>
<td>Mill’s own capital</td>
<td>$ 200,000</td>
</tr>
<tr>
<td>Available bank finance without collateral management: 50% of the value of the paddy bought by the mill</td>
<td>$ 200,000</td>
</tr>
<tr>
<td>At US$ 500/ton, the mill can buy and store <strong>800</strong> tons.</td>
<td></td>
</tr>
<tr>
<td>Assume storage for two months, at a total interest rate without collateral management of 1% monthly interest charges – cost of the loan:</td>
<td>$ 4,000</td>
</tr>
<tr>
<td>Storage charges (fixed operating costs for the mill’s own warehouse, over a period of 2 months)</td>
<td>$ 1,000</td>
</tr>
<tr>
<td>Resale price: reflects a net profit of 5% on the paddy. Total revenue:</td>
<td>$ 420,000</td>
</tr>
<tr>
<td><strong>GROSS PROFIT</strong></td>
<td>$ 15,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Situation with collateral management</strong></td>
<td></td>
</tr>
<tr>
<td>Mill’s own capital</td>
<td>$ 200,000</td>
</tr>
<tr>
<td>Available bank finance with collateral management at <strong>80%</strong> of the value of the paddy bought by the mill</td>
<td>$ 800,000</td>
</tr>
<tr>
<td>At US$ 500/ton, the trader can buy and store <strong>2,000</strong> tons.</td>
<td></td>
</tr>
<tr>
<td>Assume storage for two months, at a total interest rate with collateral management of 0.8% per month. Interest charges:</td>
<td>$ 12,800</td>
</tr>
<tr>
<td>Storage charges (fixed operating costs for the mill’s own warehouse, over a period of 2 months)</td>
<td>$ 1,000</td>
</tr>
<tr>
<td>Collateral management charges (2 months)</td>
<td>$ 10,000</td>
</tr>
<tr>
<td>Resale price: reflects a net profit of 5% on the paddy. Total revenue:</td>
<td>$ 1,050,000</td>
</tr>
<tr>
<td><strong>GROSS PROFIT</strong></td>
<td>$ 26,200</td>
</tr>
</tbody>
</table>
Table 8: The impact of warehouse capacity/initial working capital on benefits from collateral management

<table>
<thead>
<tr>
<th>Quantity of paddy that the mill can buy, at $ 500/ton (tons)</th>
<th>Financing charges with collateral management, at 0.8%/month ($)</th>
<th>Storage charges plus fixed collateral management fees ($)</th>
<th>Increase in profits because of collateral management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without collateral management</td>
<td>With collateral management</td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>800</td>
<td>2,000</td>
<td>12,800</td>
<td>11,000</td>
</tr>
<tr>
<td>2,000</td>
<td>5,000</td>
<td>32,000</td>
<td>12,500</td>
</tr>
<tr>
<td>4,000</td>
<td>10,000</td>
<td>64,000</td>
<td>15,000</td>
</tr>
<tr>
<td>8,000</td>
<td>20,000</td>
<td>128,000</td>
<td>20,000</td>
</tr>
</tbody>
</table>

Note: the parameters of this table are as per table 7, except that “storage charges” increase pro rata with the warehoused stock (column 2)

182. It is also worth considering revenues from the collateral management company’s side. A mill’s collateral management costs are revenues for the collateral management company. If one assumes that ten mills would sign year-round collateral management contracts at US$ 5,000 per warehouse location per month, this would mean a gross revenue of US$ 1.2 million per year. Each location would require at least 5-6 staff (at fairly junior positions), and the headquarter office would require at least 6 more highly-qualified staff. The collateral management company can be expected to develop additional business lines. In all, it would appear that this kind of revenue potential can be attractive to international collateral managers, even if they wish to appoint expatriate staff. There are currently two international companies that provide collateral management services in Cambodia (CWT and Control Union), and one has done a small collateral management deal (for rice exports). Its fees on that deal, while expressed per ton of rice rather than for the warehouse, were in line with the US$ 5,000/month/warehouse fee suggested by Emerging Markets Consulting, 2012.

183. Collateral management fees of US$ 5,000 per warehouse are, as noted above, only likely to be beneficial for millers with a storage capacity of more than 10,000 tons, and that only if their net profit margin on paddy milling is more than 3 per cent. To make collateral management more affordable for smaller millers, then, would require either making paddy milling more profitable, or reducing collateral management fees.
184. One way to reduce fees would be to advertise, in the framework of a follow-up project, the interest of the project to identify collateral managers who are willing to work in Cambodia; this may attract some agencies that are currently not present but who can contribute significant expertise. Another way to reduce costs would be if a consortium of local companies with an interest in expanding agricultural sector lending (it should be logical for the banks to take the lead) to create a new collateral management company, which to avoid conflict of interest would have to be run on an arms-length basis. An established international firm can be brought in to bring expertise and systems, and in return can be given a sweat equity stake. This option would require only a small investment, and even if only a few of the large mills sign up for the services of the collateral manager it can already become profitable. This proposal does not mean that one should create monopoly structures. While public action should focus on getting one institution going, if private investors later on wish to set up competing ventures, they should not be obstructed.

185. The second option is to convert one or more existing ‘excess’ warehouses into public warehouses – an option that in Cambodia is at times captured under the name of “paddy bank” (this is not international usage: “paddy bank” generally refers to small-scale, informal, village-controlled paddy storage initiatives). Local mills that have such surplus capacity may make it available for public use. The physical infrastructure has to be good, and key equipment needs to be installed at the site – in particular, one or more driers, and a weighbridge. But even more important, it is essential to create legal and management distance between the public warehouse and the mill that owes it. A separate operator needs to be brought in to manage the warehouse (this could be the same collateral manager discussed in the previous paragraph), and the mill’s sole role should be as a landlord, receiving a regular rent but without any privileges when it comes to the warehouse. A good warehousing facility appears to be available in Battambang for use as a public warehouse, and this warehouse meets all the technical criteria. Further possibilities may exist in Phnom Penh and/or Takeo. However, a proper solution for removing warehouse control from the ultimate beneficiaries of loans to an independent party needs to be implemented before it can become a successful tool for enhancing rice sector finance. If this is successful, then it is worthwhile to explore similar opportunities with millers in other parts of the country; reportedly, some have excess warehousing capacity.

186. The third option does not target to meet the immediate needs of the rice sector, but its future needs. If Cambodia is to realize its full potential as a large rice exporter, many more mills and warehouses need to be built, and significant improvements in transport systems made (particularly along waterways). This could be largely left to the private sector, but it is not efficient to force all new mills to build large warehousing capacity just for their own use, and furthermore invest in probably separate river jetties to enable shipping. If the private sector can have trust in the establishment of a proper warehousing system along the routes of the rice export value chain, then they could focus their investments on rice milling and polishing. So it would be useful, both from the millers’ perspective and that of the national economy, to develop a medium- to long-term masterplan that envisages the creation of a public warehousing network along the waterways, to support the future growth of
the sector. While implementation of such a master plan should be in the hands of the private sector and commercial government-owned companies (like port authorities), its conceptualization and coordination is a logical role for the government.

187. **The final option, complementary to the other three, is the development of an electronic warehouse receipt system.** This system would act not only as a depository of warehouse receipts, but also, as a tool to manage, trade and finance them. It is an essential component of each of the three previous options, and indeed, could be set up and managed as an internal system of the collateral manager, the “paddy bank” and the “public warehousing network”, each separately. But to save costs, to enable a smooth integration of the different systems for managing collateral in the country, and to strengthen trust in each of the components of an enhanced inventory finance system, it makes more sense to have the electronic warehouse receipt system managed by an independent company which provides its services to all warehouse operators and their clients. Nevertheless, this could start as one of the services provided by the new collateral management firm discussed above, but at some moment it would become sensible to spin off the operations into a separate company. The necessary software can be procured off the shelf, at a rather low cost, and then be adapted to local needs. In terms of the operating entity, there are different possibilities – it could be on a for-profit basis by a local or international company, or it could be by a professional association, or even by a newly-created joint venture by key stakeholders.

188. **It should be noted that the impact of the actions described here can be expected to go much beyond this sector.** When an electronic warehouse receipt system has been created for paddy and rice, it costs near to nothing to open it up to other commodities, including stocks of, say, cassava, cashew nuts, petroleum products or fertilizers (warehouse receipt finance has been suggested as a solution to the working capital problems in Cambodia’s cashew nut sector). Once a professional collateral manager starts operating in the country, he will be able to offer his services not just for financing rice mills, but for all businesses in which collateral management can be a key to unlock access to finance. A bank that has set up mechanisms to provide finance backed by crop collateral in the rice sector will want to use these mechanisms as widely as possible, to capitalize on its investment in skills and systems.

189. **Implementing any of the four options described can benefit of a Public-Private Partnership approach,** with in each case a different role for the government. The various interventions form, to a large extent, parts of a package – at the very least, they reinforce each other. A number of government roles can be envisaged:

- A leading role in discussing and conceptualizing the various options discussed above, and in developing a sound medium-to-long term strategy, with implementation shifting to the private sector at an appropriate moment.

71 This includes such applications as the outsourcing of inventory management – and with it, the financing of the inventory – for car dealerships, or the placement of inventories on clients’ premises by (overseas) suppliers so that they can more easily distribute or process the goods.
• Encouragement of investments in collateral management, public warehousing and electronic warehouse receipt companies, including by playing a mobilizing role in bringing together potential private sector investors in such ventures.

• Investments in physical warehouses and ancillary equipment (e.g., river jetties, testing laboratories); after construction, such facilities could be leased to the private sector (but note that selection of the investments should be done with the private sector).

• Support activities to raise awareness of the various warehouse receipt finance tools, and to improve the understanding of the practicalities of their use. Awareness-raising should have a broad reach, and cover, apart from banks, mills, support companies (such as inspection companies or port authorities) as well as government policy makers. Lack of understanding among key policy makers (including in the Central Bank) of the modalities of and scope for crop collateral-based finance could lead to unnecessary delays and interventions. It would thus be useful to organize a limited number of events for policy makers, to help create and sustain a supportive mindset in the relevant departments and organizations.

• Support training, in particular centered on banks: Success can come only if bankers can design products that are attractive to borrowers; and once they have done so, rational borrowers will not need much convincing to use the new lending instruments. Three elements are required before attractive products can be designed:

• Senior management, including the members of the credit committee, need to feel comfortable with crop collateral-based financing structures, and agree that they are safe compared to other forms of lending and thus, should carry lower interest rates; in order for them to feel confident in this regard, they need to be confident about the new processes and procedures that the bank would implement for these loans.

• There should then not be any restrictions in either the bank’s own credit policies (e.g., when imposed by a parent company) or in the policies enforced by the Central Bank (e.g., provisioning rules) that prevent from translating the lower risk assessment into lower lending rates.

• And operational staff needs to have a deep understanding of the mechanics of crop collateral-based financing.

190. When they have an attractive lending product, banks can be relied on to create awareness of this product among potential clients; so, while one may support banks’ awareness-raising programs, it would appear somewhat superfluous
for the government and donor agencies to organize training programmes on crop collateral-based finance just for rice mills and exporters.

- Signaling of the Government’s support for warehouse receipt finance. In the short run, the creation of a dedicated discount window be managed by the Central Bank may not be feasible, but it would also send a highly possible message were the Central Bank to accept lower capital provisioning requirements for properly structured warehouse receipt loans (conform to the provisions of Basel 2 and 3).

- Openness to reviewing laws, rules, regulations and practices that may hinder the development of warehouse receipt finance, and to modifying them as warranted. In the limited time available for the field missions that underlie this report, no large hindrances have been identified. That may be because the mechanisms considered here are new to the country and thus, have not been tested. There are some potential issues though. In particular, the current practice is that in case of a bankruptcy or the enforcement of a pledge (e.g., the case of equipment given as collateral for a loan), goods are auctioned off by the court instead of being seized and sold by the bank; it requires further assessment whether this practice would also occur when the bank has effective possession over the goods (which is the case when it uses a collateral manager or a public warehouse) and thus, has the ability to seize and sell them. These potential bottlenecks should be investigated in further detail.

- The international community should support such government initiatives. Table 9 summarizes the policy options for a comprehensive, multi-year programme, and the actions that can be taken at several levels. Annex 3 gives a detailed proposal for a 12-15 month pilot project.
5.1 Policy options, sequenced

**STEP 1: REMOVE DISCREPANCIES IN LAW AND UNCERTAINTIES ABOUT INTERPRETATION**

*Rationale:* To improve financial access for SMEs, WR and movables financing needs to be cultivated and promoted. WR financing is a part of part of ‘movables financing’. While Cambodia does not have specific law on “Warehouse Receipts”, WR financing can be implemented under the existing Secured Transactions Law. However, the provisions of this Secured Transaction Law need to be clarified vis-à-vis the Civil Code. This is the most important legal step to promote WR finance and movable assets’ finance in Cambodia.

<table>
<thead>
<tr>
<th>Issues</th>
<th>Recommended actions</th>
<th>Who is to act?</th>
</tr>
</thead>
</table>
| **Legal Framework** | There are conflicting provisions between the Secured Transactions (ST) Law and the Civil Code. The concern is on the interpretation of the Law in case of legal conflicts. This leads to strong resistance to embrace a movables lending culture. In addition, the ST Law has not been sufficiently disseminated. | - Review relevant laws including Civil Code, Law on implementation of Civil Code, and ST Law  
- Work with relevant government agencies to address the issues identified  
- Disseminate the result and raise awareness about the law with the public, relevant government official and lenders  
MEFF/Ministry of Commerce/Ministry of Justice Committee on the Law on Secured Transactions, with support from ADB and IFC  
*Note: WBG/IFC is in the process of reviewing the law. Initial finding are expected by June 2014* |

**STEP2: IMPLEMENT A DEMONSTRATION PROJECT**

*Rationale:* Two international collateral management companies are already present in Cambodia, a precondition for successful WR finance. A call for collateral managers may bring more experts. The collateral management can be attractive for the about 30-40 largest rice mills, who already have or can invest in good, secure, and well-equipped warehouses, with the mechanical driers that are needed for rapidly drying paddy for safe longer-term storage (note that in some cases, the decision may be made to operate the warehouse not just for stock financing for one mill, but as a public warehouse). The pilot would be a private business project between millers, banks, and collateral managers, but there are some things the government can do to support such projects, as summarized below.
<table>
<thead>
<tr>
<th>Areas</th>
<th>Issues</th>
<th>Recommended actions</th>
<th>Who is to act?</th>
</tr>
</thead>
</table>
| Collateral registry | Collateral Registry is a crucial infrastructure supporting movables financing which include warehouse finance/warehouse receipts. Following the enactment of the ST Law, a collateral registry system (Filing Office) was created in 2007 and administered by the Ministry of Commerce (MoC). Since then, there has been virtually no stakeholder engagement, public awareness or capacity building activities on the Registry. The overall effectiveness and usability of the Registry system remains limited. More troubling is the fact that the system sometimes is not accessible for days at a time. This, of course, has led to a huge credibility issue with low trust in the Registry among the lenders. To make the Collateral Registry fully useful for commodity finance, a dedicated module needs to be created that permits the creation, transfer, trading and pledging of standardized electronic warehouse receipts. | - Assess of the current “Filing Office”  
- Enhance the system  
- Build disaster recovery model  
- Develop business plan  
- Train operational staff to ensure effective operation of the system  
- Raise awareness and promoting the usage of the system  
- Study options for Electronic Warehouse Receipt Registry, and support the WR software incorporation into the general registry. | Ministry of Commerce  
Note: WBG/IFC is working with MOC on the enhancement of the collateral registry system – ‘the Filing Office’. The plan is to complete the enhancement within 2015. |
<table>
<thead>
<tr>
<th>Lenders Capacity and awareness</th>
<th>WRs and movables financing are still relatively new concepts in Cambodia. Interviews with leading banks reveal a serious lack of knowledge on movables lending and a lack of capacity on &quot;how to&quot; establish such a practice.</th>
<th>- Build capacity of lenders in the area of movables lending through training, workshops, seminars… etc.</th>
<th>- Raise awareness among SMEs and the public about movables lending</th>
<th>MEFF and MOC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Note: WBG/IFC has already started lenders capacity building and awareness raising activities. Several workshop have been conducted on movables financing, factoring, warehouse finance as well as trade finance.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>All major banks are interested and expressed their intention to develop movables lending products. Two major local banks already started providing loans against inventory.</td>
</tr>
</tbody>
</table>

**STEP 3: PROMOTION OF PUBLIC WAREHOUSING**

**Rationale:** This would be a move from pilot WR finance projects to nation-wide WR finance. This will need to happen in the longer run. Collateral management is in principle the best inventory finance tool for rice mills which have already invested in large warehousing space, as it minimizes their additional logistics costs. However, this option is not available for all mills, as their premises may not permit safekeeping of stocks by a third party, or their volumes may be too low to justify the fixed costs of a collateral management agreement. For such millers, as well as for traders and farmers who may want to gain access to inventory finance, a public warehousing option may be of use. In addition to the actions laid out above, the promotion of public warehousing requires the following government actions:

<table>
<thead>
<tr>
<th>Areas</th>
<th>Issues</th>
<th>Recommended actions</th>
<th>Who is to act?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply of credit</td>
<td>Availability of credit is important for WR financing and credit lines for other movable assets. Cambodian banks have liquidity but clients do not borrow much due to high interest rates and limited</td>
<td>- Improve the business environment that would lead to lower interest rates &lt;br&gt;- Expand options for collateral (i.e. to movable assets) &lt;br&gt;- Avoid subsidizing</td>
<td>Government of Cambodia</td>
</tr>
<tr>
<td>Collateral Options</td>
<td>Interest rates or providing concessional loans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------</td>
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</tbody>
</table>

**Physical warehouse infrastructure**

There are 30-40 modern mills in Cambodia with warehouse infrastructure; they can use collateral management companies to implement WR finance. There are also existing excess warehouses that can be converted into ‘public’ warehouses for WRs. Large supply-driven investments in warehouses would seriously undermine competitiveness of existing businesses.

- Assess the current status of the existing warehousing capacity
- If funds are available from external partners, open up tenders for private sector to build warehouses (using concessional credit line) based on business needs
- Do not create a state-owned warehousing company
- Do not ban export of paddy in order to fill excess warehouses

**Indemnity fund**

An Indemnity Fund is to provide insurance to indemnify depositors or their financiers for losses incurred due to the warehouses’ failure to meet obligations. It adds to but does not substitute other risk management mechanisms.

- Assess options for the creation of the Indemnity Fund

Rice sector, collectively, needs to decide on desirability. If positive, MEFF can support its implementation.

**Refinancing facility**

A refinancing facility (a discount window or an investment fund) for

- Option 1: explore the interest of NCB to include warehouse receipt loans in the list

Option 1: NBC to explore and decide.
warehouse financing will permit the refinancing of bank warehouse receipt loans. This allows banks to gain much greater capital efficiency in generating warehouse receipt loans.

| | of loans eligible for refinancing, and start refinancing operations.
| - Option 2: establish, with contributions from interested parties, a fund that invests in warehouse receipt loans. |
| | Option 2: MEFF to explore and decide |
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7. Annexes

Annex 1: Operating a public warehouse. Moving rice from the physical to the financial sector

A public warehouse is a warehouse operated by a warehouseman, who stores commodities for unrelated third parties for a set fee. He may also provide other services, such as packing, or container loading. The warehouseman does not obtain title to the commodities he stores, but instead, he becomes the custodian of the commodities.

This implies that the warehouse operator retains possession of the commodities. From a bank’s perspective, this makes it much easier to provide finance against the collateral of these commodities, as in many legal regimes; it gives him automatic priority over other creditors in the case of a default by the borrower.\textsuperscript{72} Thus, a public warehouse can act as a convenient financing vehicle for a bank. And vice versa, the ability to arrange for access to bank finance can be a good way to attract depositors to a public warehouse.

This annex discusses the process through which a public warehouse operator can turn paddy or rice deposited by third parties into good collateral for banks. The situation discussed is that of a depositor who wishes to use his goods as collateral for a loan; and a warehouse operator who has an agency agreement with one or more banks under which he can initiate the loan request for an interested depositor. It assumes that the legal system enables the operations as described. Also, it assumes that the warehouse operator, rather than relying on paper warehouse receipts, is linked to an electronic warehouse receipt system.

The basic components are as follows:

1. The warehouse operator has to be an acceptable credit risk for the bank.
2. The operator has the capacity to provide the information that the bank requires – in particular, to grade the paddy/rice; and connectivity to the internet.
3. The operator has proper procedures in place.

The warehouse operator becomes legally liable for the goods he stores. If these goods are stolen, damaged or destroyed through any fault of his, he and/or his insurance companies have to make up for the value lost. Insurance also has to be obtained for

\textsuperscript{72} This is called “bailment”. For bailment to exist, the depositor, while retaining ownership, must relinquish possession of the commodities and the warehouseman must assume exclusive, continuous and “notorious” possession of them. “Notorious” means that the presence and control of the warehouse operator has to be clearly signposted on the warehouse, and individual lots marked as pledged to banks. If bailment cannot be proved, the holder of a warehouse receipt has no priority over other creditors in the case of a default. In a public warehousing arrangement, bailment can be easily proved, while in a collateral management agreement, it depends on the collateral manager being able to demonstrate that it properly followed all necessary procedures.
catastrophic events (fire, water or storm damage, etc.). The bank thus will need to feel it is able to rely on the operator, which it can do only when a due diligence exercise has positive findings. The due diligence will include the following aspects:

- The warehouse operator’s legal status – does he have all the required licenses and permits to undertake public warehousing operations?
- His reputation in the market
- His overall business operations: to what extent is the operator committed to the business of providing professional warehousing services? The bank should particularly inquire whether the operator holds goods for his own account in the warehouse – this would expose the bank to larger risks, e.g. substitution of the depositor’s paddy/rice by that of the operator.
- His financial situation
- The physical state of the warehouse facilities (e.g., is the building well-kept and are the surroundings neat, without uncontrolled vegetation against the outer walls? are there no infiltration points for water, or for rodents; are the floor markings clear?) and its equipment (weighbridge, moisture meters, temperature and humidity controls, burglar and fire alarms, sprinkler system, etc.)
- The warehouse operator’s process control: is his staff well-trained? Can the operator ensure that his staff follows all applicable procedures? Is access to the warehouse and its keys properly restricted?
- The operator’s insurance coverage.

The bank needs to ensure that the operator is able to provide the information that the bank requires, at the speed that the bank requires (which nowadays requires an Internet connection). As the bank’s loan disbursements depend on the value of the goods in the warehouse, this will include reliable information on the specific quality of the paddy/rice that have been deposited by a borrower. The operator thus needs to have both the staff and the equipment to accurately grade paddy and rice. The bank will have a system in place to independently receive market prices for the various grades, and thus, it will be able to put a fair value on the goods in stock. The bank may also ask the operator to procure other information – e.g., in the case a depositor is a trader, copies of the purchase orders/invoices for the paddy/rice.

The procedures of the warehouse operator are critical. They will ensure that indeed, the operator takes best possible care of the goods in his custody; that the bank obtains the information that it needs; that the bank’s lien over goods pledged as collateral for a loan is maintained safely; and that, in case of problems, the insurance company will not be able to dispute its obligation to cover the loss.

When a depositor brings paddy/rice to the warehouse, the operator will first test it to ensure it meets quality standards. If it does not (e.g., the percentage of impurities is too high), the goods should be refused entry into the warehouse. In particular importance for paddy is the moisture content; if it is higher than, say, 14 per cent, the operator may refuse entry until it has been dried to the required level (he may operate a drier for this purpose). For storage in bags, only bags that meet minimum set standards can be accepted; but the operator may offer the depositor re-bagging services.
On receiving the goods, the warehouse operator generally requests the depositor to supply him with proof that the depositor, when not the producer of the goods, has paid for them (e.g., if the depositor is a trader, invoices). On delivery, the goods are counted, with the warehouse operator producing a tally sheet (an often hand-written count on a pre-printed form of the number of bags received by the warehouse operator’s staff), a weigh note (which can be a print-out from an electronic weighbridge) and (generally) a quality certificate. A copy of each is given to the depositor (or rather, the depositor’s transporter), together with a Goods Received Note specifying quality and quantity; the originals need to be properly filed.73 On the basis of the information in the tally sheet, weigh note and quality certificate, the operator will issue a warehouse receipt (the specific format and legal status varies from country to country), signed by a person authorized to act for the operator. The receipt will include information on the depositor, the quality and quantity of goods deposited, the maturity of the warehouse receipt, and the various costs and fees. Traditionally, the warehouse receipt is a document printed on banknote-quality paper, with a unique

73 While the Goods Received Notes and the tally sheets are just a record of the goods received by the warehouse operator, they can provide valuable back-up in case of, say, a warehouse fire, strengthening the likelihood of a successful claim to the insurance company.
number; this is to reduce the risk of forgery. But nowadays, the creation of the receipt in an electronic system is preferable, for reasons of both efficiency and security.

The depositor can be offered the possibility of using his warehouse receipt as collateral for a loan. The bank(s) interested in providing warehouse receipt finance can advertise their conditions (term, interest rate and fees, percentage of the value of the paddy/rice to be financed), while the day’s market prices can be advertised by the warehouseman. The warehouseman can help the depositor fill out the loan form, which will be submitted electronically. The bank can then put a lien on the receipt (meaning that the goods cannot be sold without the bank’s permission), and simultaneously provide a loan to the depositor. The bank has to be able to link the warehouse receipt with actual physical goods, and even on a surprise visit, has to be able to inspect these goods (which should be signposted as pledged to the bank) for concordance with the operator’s statements (public warehousing in silos, where commodities of various depositors are mixed, is therefore riskier, and requires additional procedures).

Unless the paddy/rice is commingled, the warehouseman has to keep the deposits of each depositor separate, and clearly marked. The warehouse records should show the location of the goods represented by each receipt. Goods should be checked regularly for concordance with the information on the warehouse receipt, by an employee who had no role in first receiving the goods when they were deposited at the warehouse, and no responsibility for the day-to-day storage operations; this information should be conveyed to the depositor, who should be encouraged to query eventual discrepancies.

As long as the goods are in the warehouse, the operator has an obligation to take best possible care of them. One part of this is proper security procedures, e.g., the continuous presence of security guards (a modern warehousing company may equip their security guards with global positioning devices to check that they indeed make regular rounds of the premises), and strict checks on all vehicles entering and leaving the premises (a record should be kept of license plates and driver identification details). It also includes regular fumigation – the warehouse should establish a schedule. There is also an obligation on the operator to ensure that paddy/rice does not get infected or polluted because it is stored together with other goods (so, paddy should never be stored together with rice; the two should never be stored together with fertilizers, chemicals, cement and the like).

The borrower can either repay the loan, and then is given full control over the warehouse receipt again; or he can sell the paddy/rice to a third party which pays through an approved bank account. The bank then deducts from this amount the sum due under the loan, may directly pay the fees of the warehouse operator, and releases the remainder to the depositor. The warehouse receipt will be transferred to the buyer, who can now take delivery of the goods (after paying any storage charges that may be incurred from the moment of receiving the warehouse receipt to that of taking delivery of the goods). It is good practice to count the number of bags delivered twice: one time on release from the storage room by the store clerk; and one time on loading into the truck(s) or boat by the shipping clerk.

In case the borrower defaults, the bank’s lien on the paddy/rice means that he should be able to sell the goods at once, without having to wait for a long court process to
auction off the products. After the sale, he can instruct the warehouse operator to deliver the goods to the buyer. If it turns out that the paddy/rice are no longer in the warehouse, or are not of the quality stated in the warehouse receipts, then the bank has a claim on the warehouse operator and his insurance company.

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74 The bank should however note that the warehouse operator has a first lien on the goods stored, against the payment of his storage fees, and therefore in case of a default or bankruptcy of its borrower, the bank should make sure that the warehouse fees are paid – otherwise, the warehouse operator has the right to sell the goods.
Annex 2: Collateral management, and what it implies for rice millers

Rice millers have to understand that collateral management enables banks to give secured funding, which goes beyond what they are willing to provide on an unsecured basis – by using a collateral manager (CM), the bank can give more finance at better terms to the miller. Thus, the imposition of a third party as the operator of the miller’s own warehouse should not be seen as a sign of distrust of the bank but rather, as a sign of the trust of the bank in the miller and his ability to expand his business. The bank is keen on accompanying the miller in his growth, and with collateral management, has found a way to do so without breaking its internal and Central-Bank-mandated risk controls.

This implies that from a bank’s perspective, the collateral management process has to be exactly that: a process, with clearly proscribed procedures. These procedures have to serve to remove the risks from the miller and put them on the CM, both legally and operationally. The bank’s credit committee has to be fully confident that even in the worst case, like when the miller falls bankrupt, reimbursement of the facility is independent from the miller’s ability or willingness to reimburse. These internal requirements of the bank may appear burdensome to the miller, but they are essential if the bank wishes to lend the miller more than it can on an unsecured basis and against the security of fixed assets.

The transaction is normally initiated by a bank which is looking for a way to safely lend to a prospective borrower. The transaction can also be on behalf of a supplier who wishes to sell his products on credit to the borrower, but wants to secure his position by retaining physical control over the goods. To set out the broad structure of the deal, a Collateral Management Agreement (CMA) is negotiated: this is a trilateral agreement between a financier (normally a bank) a CM and a borrower. The bank will also sign an agreement with the CM which makes the CM its agent. The CM will inspect the mill’s warehouse to verify that it meets minimum requirements (some small refurbishing is possible, e.g. to add firefighting equipment).

The financing operations can start when the legal control over the warehouse has been moved from the miller to the CM. This is done through a lease agreement for a duration that exceeds the duration of the loan by say one month, at a nominal fee (say US$ 1).
The lease agreement gives the CM right to the use of and access to the warehouse, and removes these rights from the owner. With a lease agreement in place, should the miller use force to break open the warehouse, or to prevent the CM from gaining access to the warehouse, then the resultant losses are covered by the CM’s insurance (as long as the various contracts are properly construed\textsuperscript{75}). The duration of the lease has to exceed the duration of the loan to deal with eventual delays in the miller’s processing and sales operations – if this were not done, then the bank would have to recall its loan before the miller has been able to realize enough sales to reimburse it. The lease will be prominently displayed on the warehouse: this helps to ensure that other banks know that the commodities have been pledged already and do not accept them as collateral for further loans.

Now that the CM is in legal control of the warehouse, it will do the necessary to take operational control. Most of what was discussed in the previous annex on public warehousing applies to field warehousing too – for instance, the CM will need to exercise exclusive, continuous and notorious control over the goods in order for there to be proper legal rights of a financier to the commodities.

The CM will arrange for insurance against the risks of fire, water damage, storms and the like. It is likely to put its own supervisor and security guards, who are covered under fidelity insurance (meaning that the CM is insured against malfeasance and gross negligence of its staff). Any entrances that will not be frequently used will be sealed.\textsuperscript{76} Other personnel necessary for the operation of the warehouse will be taken from the miller’s usual workers: their working conditions will remain the same, but their legal employer will now be the CM, for the duration of the CM’s operation at the warehouse. If there is any paddy in the warehouse when the CM starts his operations he is likely to have it taken out, and then brought back in again, weighed and tested by the CM – this is necessary because the CM is liable for the continuing presence of the commodities in the warehouse.

From then onwards, all movements into and out of the warehouse are under control of the CM. The CM will operate under the instructions of the Bank, which the Bank has negotiated with the borrower. These leave commercial flexibility. The borrower would normally like to be able to rotate his stocks, in such a manner that normal, day-

\textsuperscript{75} This can be complex. For example, if the owner defaults on his loan and then prevents the CM and the bank from accessing the warehouse, the result is not theft: the goods are still in the warehouse. Political risk insurance can cover this risk if local authorities are clearly complicit with the owner and fail to assist the CM and the bank in executing their legal rights. And the CM’s liability insurance will cover the risk if the CM, in his contract with the bank, guaranteed the bank access to the goods in case of borrower default.

\textsuperscript{76} Among other things, this helps in case is theft: insurance companies generally require proof of infraction before they are willing to pay out on a theft claim.
To-day business is not negatively affected. To enable this, the bank gives a general release authority to the collateral manager, with as main conditions that a certain minimum volume is maintained, and the borrower does not substitute goods by others of an inferior quality. Furthermore, to meet the operational needs of the mill, the CM will be authorized to release up to a certain volume of paddy, up to a certain limit; as long as the miller sells the resulting rice in a way that is transparent and acceptable to the bank, this limit will be renewed, so there will be no negative influence on the operational efficiency of the miller.

The paddy that is delivered into the warehouse is meant to unlock bank finance, without any further negotiations between the miller and the bank. For this, the bank needs to be comfortable that the paddy indeed belongs to the miller, and is free of any encumbrances (e.g., the farmers or traders who delivered the paddy have indeed been paid). It will ask the mill to certify as such, and may ask the CM to verify from time to time that indeed, the paddy delivered into the warehouse has been paid for. Banks do not want to deal with the claims of unpaid suppliers.

Assuming that the Bank is satisfied about the ownership of the paddy/rice, then the deposit of the commodities, once reported by the CM (probably through the issuance of warehouse receipts to the depositor which are pledged to the bank), leads to the immediate release of new finance for the borrower (the bank will organize surprise inspections to confirm that the CM’s reports are correct). The amount of new funding will depend not just on the value of the paddy/rice deposited, but also on the development of the value of the paddy/rice already in the warehouse. If that value fell because of falling prices, then, in order to maintain the bank’s financing ratio (e.g., the loan is set to be 80 per cent of the value of the goods in stock), then the new deposits will only unlock relatively lower new lending. It is also likely that there is a general lending limit – beyond this limit, extra deposits of stock will not lead to more lending. This is due to the fact that the bank retains some exposure to the credit risk of the borrower. Ultimately, the warehouse is on his premises, and the borrower could use various illicit means to either subvert the CM’s staff, or to wrestle control over the warehouse away from the CM. Thus, in a field warehousing operation, the bank will need to have a positive opinion of the borrower’s moral character; and it needs to find that the processing operation envisaged by the borrower is profitable. The borrower’s actual financial state is less important: in the USA, field warehousing has been much used to permit severely cash-constrained companies to continue operating.

However, the bank needs to verify that local law indeed permits such free substitution of fungible goods. The lender’s title to the goods should not be jeopardized by the fact that the goods in stock are not the same as the ones originally pledged. If local law does not permit such fungibility, then a new warehouse receipt needs to be issued upon each new deposit – which adds a (small) cost.
The CM is responsible not only for maintaining the quantity of stocks in the warehouse (or at least, most of it), but also, for maintaining the quality, within the normal parameters of moisture loss and the like. Quality certification could be outsourced to another company – this would most likely be done in an export transaction, where the buyer requires quality certificates issued by an acceptable inspection agency. In this case, the CM will send samples to the inspection agents. But whether or not quality certification is done by the CM, the CM is liable to quality deterioration due to improper handling. Therefore, the CM will normally want to control the fumigation schedule of the commodities in the warehouse. As the mill will be asked to pay for this, it is preferable to discuss this early on and come to an agreement on this issue.

Later in the season, when the miller is reducing his paddy stock, the release of crop collateral from the warehouse is in line with a reduction in the loan. If all goes well, the CM will continuously release paddy, for processing, or rice for immediate sale to a buyer. In the latter case, the buyer must have been specifically approved by the bank – either the bank is willing to take a credit risk on the buyer, or the buyer pays cash for the rice, or the buyer opens a letter of credit which is acceptable to the bank. In this phase of the financing, problems can become apparent. E.g., if the CM’s staff in the warehouse colluded with the borrower to release high-quality paddy while reporting it as below-average quality, then towards the end of the season the only paddy left in the warehouse will be low-grade, with a value that may be less than that of the remaining loan.

In this case, the CM should be liable, but there can be complications. In a public warehouse, the operator is responsible for maintaining close to 100 per cent of the quantity of the goods in the warehouse, with some tolerance for changes in moisture content and handling losses. This is not the case in a CMA: the CM will ask for a tolerance of, say, 3-5 per cent. This is to protect the CM from small-scale theft. It is to be kept in mind that most of the staff employed in the warehouse are the borrower’s original staff, not new staff brought in by the CM. And pressure on the CM’s staff to ignore the CM’s procedure are most likely to come from the borrower or his staff (for example, a typical demand is for the borrower to pressure the CM’s staff at the warehouse to issue a warehouse receipt for commodities that have not yet arrived, with the argument that the goods are on their way and the borrower urgently needs the money). The CM will put into place a number of checks and balances that should allow him to detect eventual thefts and fraud rapidly, but he cannot reasonably be expected to prevent them completely. Thus, if it is found that a warehouse contains only, say, 90 per cent of the commodities that should be there according to the
warehouse receipts issued by the CM, then the CM takes liability for the loss of, say, 7 per cent, but not for the remainder.

As any structured finance operation, a field warehouse financing has one mode of operations for when all is as normal, and another mode of operations when the borrower defaults (the loan’s term sheet will spell out the procedures in both cases). If there is a default, the rights of a bank under collateral management agreements are quite strong: when the borrower defaults, the bank has the right to immediately remove the goods from the warehouse and sell them.\(^78\) In Cambodia, there is little precedent in this regard; moreover, the experience that exists suggests that the sales process will be through a court, which can cause delays and also, may make it more difficult to realize the best possible price (although if the court accepts to use the electronic warehouse receipts system for the sale, the latter should not be the case). If the bank has concerns in this regard, it may ask for stronger rights, in the form of co-ownership of the goods in the warehouse. While this may seem overly intrusive, it should be noted that this does not affect the mill’s day-to-day operations as long as he meets his loan requirements.

\(^{78}\) If the goods remaining in the warehouse are not of the quantity or quantity certified by the CM resulting in a shortage in recovery by the bank, then the CM is liable. The CM normally has insurance in place to cover his eventual losses. However, as premiums can rapidly rise once claims are made, CMs will generally try to avoid making payouts to a bank if they can find a legal ground to do so (e.g., collusion of a bank staff with the borrower). Banks’ legal staff should scrutinize proposed contracts with a CM keeping this aspect in mind.
A collateral manager can also underwrite more complex operations, along the lines of the borrowing base finance described in a previous section. Figure 13 gives an example. In this case, an overseas buyer has entered into a long-term commercial relationship with a local miller, under which he continuously buys rice. As the buyer has cheaper access to finance than the local miller has, he asks his bank to arrange the revolving finance for this transaction. To do so, the bank will use a local agency bank, and will ask a collateral manager that feels comfortable with the manage the transaction flow.

The transaction could start already at the level of cooperatives that are used by the mill to procure paddy. The CM is present at these cooperatives as they buy, and reports on procurement to the local bank. The bank accordingly releases working capital to the miller, as per the loan agreement. The CM then takes charge over the transport of the paddy to the miller’s warehouse (which is under control of the CM). The bank may pay the transport company directly, to ensure that it works as agent for the bank, not for the mill (otherwise, the miller could instruct it to deliver the paddy to some other party). On arrival in the warehouse, the CM weighs and tests the paddy, and issues warehouse receipts, against which the local bank provides further funding.

Paddy is released to the miller for processing, and then the rice is deposited with the CM. The CM monitors the miller’s processing efficiency so that the buyer and his bank can be sure that a given amount of paddy corresponds with a given amount of rice of the quality demanded by the buyer. This also helps identify quality issues early.
on: if the quality of the paddy is not good enough to produce the rice demanded by the buyer, then it is obviously not good collateral for the buyer’s bank.

From time to time, as sufficient volumes of rice are accumulated, it is transported to the export warehouse and then, loaded onto a vessel; all under supervision of the CM. On arrival, the goods are paid by the buyer through his bank, which deducts the appropriate sums to repay the loan and remits the remainder to the miller. The transaction can be structured as a revolving facility, with the miller receiving working capital finance in line with his working capital needs as long as rice continues flowing to the buyer.
Annex 3: Developing the warehouse receipt system for paddy and rice: outline of a pilot project

1. There is widespread agreement that the current main constraint for Cambodia reaching its goal of 1 million tons of rice exports is the lack of working capital of millers. When more working capital is made available, new constriction points will arise (lack of drying capacity will be the first one), so a proper policy would address, in the short run, working capital constraints, but include in the medium term a more comprehensive set of measures. This pilot project proposal only addresses the short term.

2. A pilot project should be quite comprehensive: the current constraints reflects a “low-level equilibrium” – unsatisfactory for the Cambodian economy, but reflecting rational behaviour by the key actors within their current set of circumstances. To move this to a higher level of equilibrium requires a big push on several fronts.

3. Thus, a pilot project should be able to achieve the following objectives:
   (i) Help build awareness and interest. This means it has to include both rice and paddy to show the real potential; and document and showcase experiences.

   Banks may well prefer to work on rice, not paddy: it is easier and less risky (among others, because the buyer and thus the price of the rice is known). However, a good pilot is one that has at least the possibility to demonstrate a proof of concept, in this case, on the viability of warehouse receipt finance in Cambodia. If one works on rice alone, then even a highly successful experience would do little to convince banks that this is a market into which it is worth to enter. Rice alone is not a big market for banks, in particular if paddy continues being smuggled out of Cambodia. Rice is normally exported soon after being milled, so the transaction costs of the financing structure have to be earned back by the bank over a very short period; this in turn makes collateral management or public warehousing attractive only to banks that have access to low-cost international funds that, using a pre-export finance, they can lend to local exporters.

   With respect to documenting and showcasing experiences, one of the aspect that needs to be well-documented is how the new financing affects the profitability of the miller. Many mills appear to compare the all-in costs of warehouse receipt finance with those of preferential working capital credits. That is the wrong comparison, as most mills do not have access to such credits; instead, the comparison should be with other credits that the mill may have access to, or in the more frequent cases that mills are already at the limit of their bank credit lines, the comparison should be between the mill’s profitability with warehouse receipt finance, and the profitability without access to finance (with the resultant missed opportunities). If the warehouse receipt finance is additional to the
credit that the mill otherwise is able to access, then the new financing permits the mill to buy more at harvest season (at prices lower than the rest of the year), use his mill for longer during the year, be able to tap into new markets. The extra profits unlocked by these new business opportunities should be compared to the costs of the finance to make a proper decision about whether warehouse receipt finance is worthwhile or not.

(ii) Help overcome skepticism and fear. So the pilot should stress the risk management aspects of warehouse receipt finance. The government has funds available for improving credit to mills; rather than used for direct loans, these funds should be leveraged, by using them for creating one or more guarantee facilities, including for the risks that are within the government’s control (such as legal risks). During the pilot project, the lessons learnt about what banks perceive as the main risks of warehouse receipt finance should be used to design the most appropriate guarantee schemes (some of the issues involved were discussed in section 3C). It should be noted that unavoidably, the guarantee scheme, using for example the funds that are now allocated to the Partial Credit Guarantee Scheme for Rice Millers, will offer guarantees at a cost significantly less than what would otherwise be available. This implies a subsidy element. However, this subsidy element should be set realistically: rates should be high enough to cover at least eventual losses related to the failure, through their own fault, of collateral managers or public warehouses to properly manage the goods in their custody. There may be other sources of loss – e.g., unwillingness of local police to protect the rights of a bank – which are not recovered from guarantee fees; but over time, as the legal and regulatory environment improves, such losses should fall, and ultimately, the guarantee fees available from the scheme should become similar to the fees offered by others. The sum initially available – in principle – in the Partial Guarantee facility is much more than that in indemnity funds in the USA, while the volume of grains to be covered is, in all likelihood, less, so unless if regulatory risk is high, the funds now in the facility should suffice.

(iii) Prepare the road for the implementation of an electronic warehousing system. For a pilot case this is not yet required, and banks and mills would now feel most comfortable with paper receipts. However, market participants have to be made familiar with electronic receipts as these provide significant benefits in a full-fledge warehouse financing system.

(iv) Build trust in the legal and regulatory environment. Laws and regulations are new, and thus poorly understood by many (including possibly judges) while there is no jurisprudence to guide banks in understanding how laws and regulations will be interpreted in case of a commercial conflict. This implies that the committee responsible for implementing the Law on Secured Transactions (as interfacing with the Civil Code) should become operational; and in its work, include the construction and testing of legal scenarios. Certain banks now fear that the Civil Code as adopted in 2009 may override some of the provisions of the 2007 Secured Transactions law, and these fears need to be expressly addressed. MEFF is a member of this team, and can take the lead in its work. The major counterpart is ADB, with IFC becoming more involved. Coordination with IFC will be useful.
Furthermore, with its partners, MEFF should elaborate a brief “legal guide on warehouse receipt finance in Cambodia”, which sets out the prevailing legal framework, and what would happen in a number of possible situations where a transaction goes wrong. This latter should go through a number of possible scenarios, to identify better which laws and regulations are ambiguous or too weak, and to remedy such problems in cooperation with the Ministry of Justice.

(v) Set up the operational procedures (ie, public support to set-up costs, which also ensures international expertise is properly used and more trust is created).

This has to be at all levels: in mills, collateral managers/public warehouses, banks, registry and NBC.

(vi) Work with NBC to explore what can be done to improve the environment for banks to engage in warehouse receipt finance (elements were discussed in section 3.H).

(vii) Start thinking about the possible systemic risks of rice lending, given the expected fast growth of the sector. Is there not a risk that banks over-expose themselves, through their rice lending, to local climate risk or to world market risk? If so, there are ways to manage such risks by externalizing them to the international market.

4. The project should be managed by a small Task Force, under the umbrella of MEFF but including representatives of stakeholders and other relevant partners (Ministry of Agriculture, Ministry of Commerce, NBC).

5. In order to reach these objectives within the envisaged 12-15 months timeframe of the project, the following activities are proposed:

<table>
<thead>
<tr>
<th>Demonstration transactions</th>
<th>Paddy</th>
<th>Rice</th>
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<tbody>
<tr>
<td>Collateral management</td>
<td>Support two trilateral agreements for mill financing, at the mill’s premises.</td>
<td>Support a trilateral agreement for exporter financing, in a classical pre-export financing deal</td>
</tr>
</tbody>
</table>
|                            | Project components:  
|                            | - Technical advice to mill  
|                            | - Subsidizing of due diligence by collateral manager  
|                            | - Support to bank in elaborating procedures and training staff  
|                            | - Documentation  
|                            | - Subsidy to CM costs??? | Project components:  
|                            | - Technical advice to exporter  
|                            | - Subsidizing of due diligence by collateral manager  
|                            | - Documentation |
| Public warehousing         | *Currently, no suitable candidate. The ‘paddy bank’ concept in Battambang can more* | Support the Port Authority of Phnom Penh in developing a warehouse receipt system, and work |
easily be dealt with as a collateral management agreement, with an add-on for third-party storage.

with banks to develop an easy mechanism for financing these receipts.

**Project components:**
- Technical advice to Port Authority
- Support to bank in elaborating procedures and training staff
- Documentation

**Supporting environment**
- MEFF/Central Bank
- MEFF/Ministry of Commerce
- MEFF – work on guarantee facility
- Awareness-raising: government level
- Awareness-raising: bank level
- IFC global warehouse finance program

- Assist a MEFF/NBC working group in developing appropriate mechanism for warehouse receipt finance/collateral management
- Assist MEFF/Ministry of Commerce/Ministry of Justice Committee in implementing Law on Secured Transactions (*coordinate with IFC*)
- Support to MEFF in developing operational modalities for a guarantee facility which would credit-enhance warehouse receipt financing by covering legal/regulatory risk.
- Three or four workshops, at critical moments, to ensure continued momentum on the government side.
- Documentation of the test cases (‘story-telling’).
- High-level meetings with banks to ensure their senior-management support. Training for operational staff (*in collaboration with IFC, which has already the training manual*). Development of Cambodia-specific operational manual/guidebook (with sample forms).
- In due time, explore whether banks interested in warehouse receipt finance can sign a risk sharing agreement with IFC’s GWFP

**Project components:**
- Technical advice (policy, technical and legal)
- Meeting costs
- Publications (translation, printing, distribution)

**Potentially: develop a Cambodian collateral management company**

If the international collateral management companies present in Cambodia are not interested in taking on the risks of collateral management for paddy (or the costs they quote are too high), then it is worthwhile to explore the potential of creating a Cambodian collateral management firm – driven by a group of Cambodian banks. The international firm would then provide (under a sweat equity arrangement) skills and systems, but the risks would be taken by the Cambodian equity partners.

*Two steps: developing a feasibility study for such a firm; and then use this to raise equity with Cambodian**
### Possible partners in the pilot phase: rice millers, rice exporters and bankers

The following table lists the mills and exporters who appear to meet the basic conditions for collateral management (in terms of size and consistency of performance), as well as banks that have shown an interest in warehouse receipt finance. It is suggested that MEFF invites these companies to propose deals for inclusion in a pilot project – with the provision that a mill or exporter needs to pair up with a bank in order to be a candidate for inclusion. The two companies in a pair should choose a collateral manager with whom they are comfortable to work. If possible, at least one case should be for public warehousing of rice at the Phnom Penh Port. In the pilot, interest rates should not be subsidized. Instead, subsidies should be used for:

- Support in the structuring of the transaction (including the collateral manager’s due diligence);
- Possibly, certain pieces of hardware, such as a simple testing laboratory that would enable the collateral manager to establish paddy quality, or an internet connection;
- Training of the relevant people at banks and their clients;
- Legal costs, to develop ‘model documentation’ and formulate clear opinions on local law;
- Possibly guarantees against certain risks, such as a first loss guarantee against the risk of theft by the miller\(^79\), or a guarantee against legal risk.

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\(^79\) Normally, collateral managers would cover the risks related to theft by a miller (the miller’s staff or its management). They manage these risks by guaranteeing continued presence of only a part (say 90 per cent) of the paddy/rice in the warehouse, combined with procedures that should give them rapid warning against such theft so that they can intervene before the critical level is reached (in this example, before more than 10% is stolen). But fact of the matter is that these procedures can fail, and have failed in certain cases in the past (the consequence can be, for example, a claim of US$ 10 million against the collateral manager, for a deal-gone-sour in which the gross revenue for the miller was only US$ 20,000). Collateral managers are vulnerable: the warehouse they take under temporary control is normally in the premises of the mill, and some of the workers are likely to have strong local ties – it is all too easy to break open the warehouse in a weekend (however, as commodities like paddy are bulky, large volumes can only be stolen if the theft continues undetected for a long time). In principle, collateral managers are insured, but in practice if they claim on their insurance their rates will increase (for the whole of their global transactions), making them less competitive. Collateral managers thus have to do considerable due diligence on the companies where they will operate a collateral management structure; Cambodian mills, with their often poor record-keeping, their short track record and overall, cash-strained situation may not be attractive. In a situation like this, if a guarantee facility can cover the first, say, 5 per cent of a collateral manager’s losses due to theft (including unexplained...
(for example, against the risk that, although the collateral has been properly registered, a local judge intervenes in such a way that control over the collateral is lost to the bank);
- Possibly, part of the collateral management costs; and
- Document experiences.

Applicants to participate in the pilot should be invited to set out their envisaged transaction (in the case of paddy, given the fixed costs of collateral management, this should involve a loan size of US$ 5 to 10 million), and indicate what kind of support they require. The best proposals (say two collateral management transactions for paddy and one for rice, and one public warehouse receipt financing case for rice) can be chosen for implementation.
<table>
<thead>
<tr>
<th>No</th>
<th>Name</th>
<th>Locations</th>
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<tbody>
<tr>
<td>1</td>
<td>Baitang (Bampuhea) PLC</td>
<td>Battambang province</td>
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<td>Brico</td>
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<td>11</td>
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<td>12</td>
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<td>B.V.B (Cambodia)</td>
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<td>16</td>
<td>Tauch Tetich</td>
<td>Svay Rieng province</td>
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II. Rice Exporters

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<td>Amru Rice (Cambodia) Co. Ltd</td>
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<td>3</td>
<td>T.O.T (Trust Our Trade) .Co. Ltd</td>
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<td>4</td>
<td>Agri Biz Khmer Co. Ltd</td>
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<td>5</td>
<td>Domnak Teuk Group Co. Ltd</td>
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<td>Ky Thay Corporation Co. Ltd</td>
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III. Banks

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