



**CTA/WUR Inception Workshop on  
“Mainstreaming Tertiary Education in ACP ARD Policy Processes:  
Increasing Food Supply and Reducing Hunger”**  
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# **Innovative Agricultural Finance and Risk Management instruments for enhancing Food Security**

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In discussions on the performance of food markets, including to achieve food security, **finance and risk management cannot be treated as an afterthought.**

**Efficient finance and risk management is necessary so that people can produce, buy, process and transport food.**

Creating an efficient system for food finance is of public interest. The private sector can execute most of the necessary actions, but it needs governments and international organizations to:



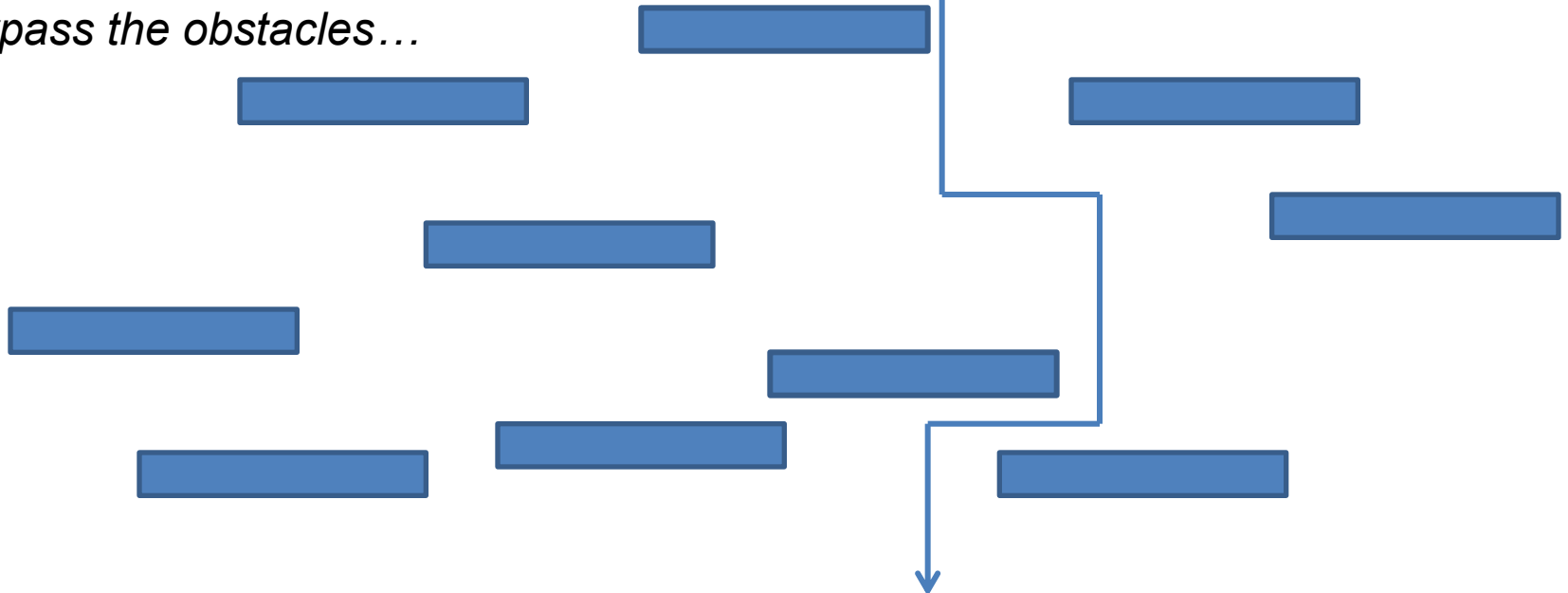
**There is enough finance in the world...**

**Using structuring techniques, it can reach those who can best make use of it.**

## Large pool of finance

Expected returns: 2% .... 6% ... 10% ... 15% ... 20% ... 30%

*Structuring techniques allow you  
to bypass the obstacles...*



Willingness to pay: 5% .... 10% ... 15% ... 20% ... 30% ... 40%

## Those in need of finance

## Overview

- Household-level food security
- Enabling efficient markets
- Leveraging national and international food security mechanisms

## **Household-level food security**

Risk management tools: creating predictability

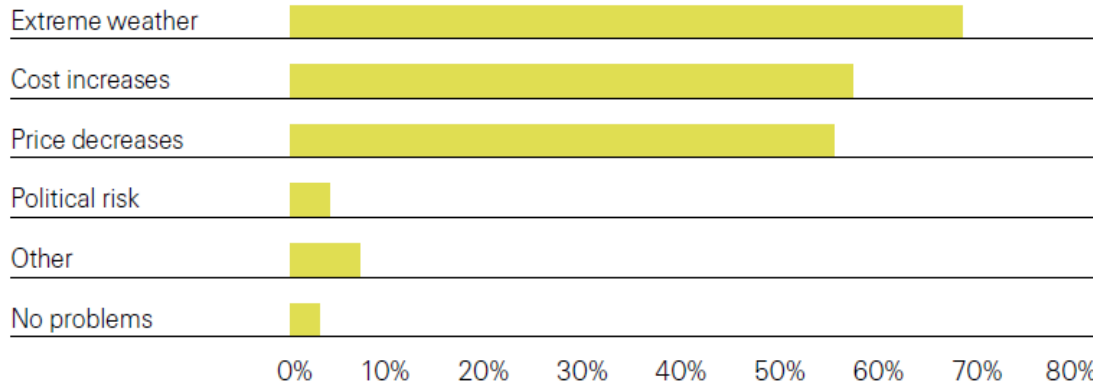
Warehouse receipt finance: preventing distress  
sales

Embedding farmers into value chains

Structured financing tools: unlocking production  
potential

## Creating predictability by offering access to organized risk management markets – to give better predictability to the farmer.

### Major risks as indicated by large farmers in Russia



Source: Swiss Re

**Commodity futures and options** can help the farmer to lock in a more predictable price for his products.

**Weather index futures** help the development of the OTC weather insurance market.

**Water contracts** (of various kinds) can help in the efficient allocation of scarce water resources, and in the management of water-related risks.

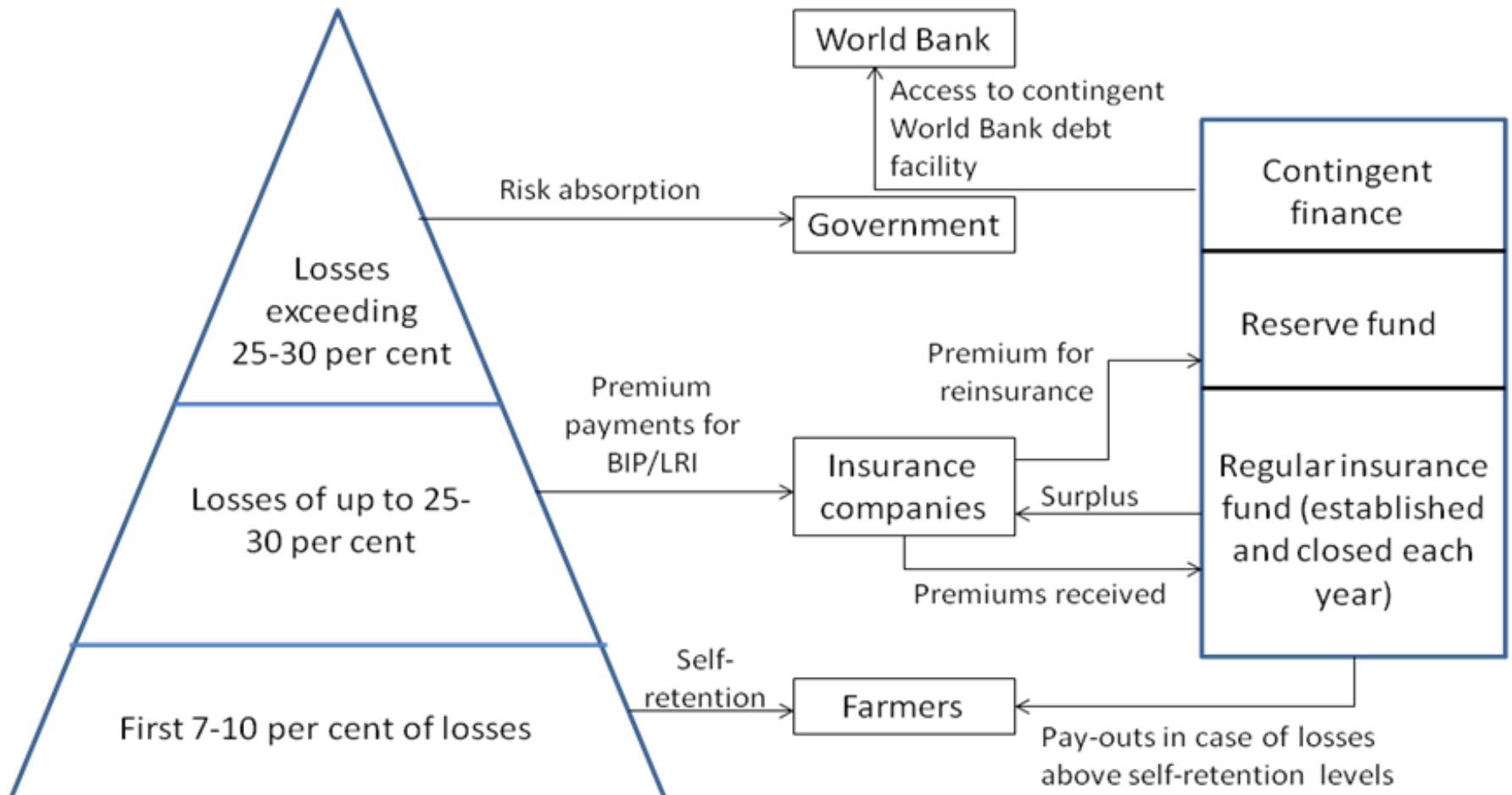
**Futures contracts** for key inputs (fertilizers, diesel oil) make working capital expenditures less risky.

## **An example in Africa: OXFAM, Ethiopia:**

*The HARITA (Horn of Africa Risk Transfer for Adaptation) pilot was designed as a way for Ethiopia's poorest farmers to get weather insurance for their crops, allowing more than 13,000 this year to buy themselves a bit of security against changing weather patterns. The project is funded by the Rockefeller Foundation and Swiss Re.*

*"Last season the rain was bad and we didn't produce what we had hoped for," said Gebre Kiros Teklehaimanot, a policyholder. "So the payment is good for us. We know it won't cover all our losses, but for me, at least, I can cover the loan I took to buy fertilizers. I am still a big believer in insurance and will go back to my village and encourage others who did not register last year."*

**A Mongolian scheme...** Livestock mortality index insurance worked well over several seasons, including a number with high mortality rates. Furthermore, herders continued to buy the policies even when their incomes declined in 2008 and 2009 due to a fall of cashmere prices. Banks have responded by offering insured herders loans at decreased interest rates. Bundling it together could help even more.





# Preventing distress sales: the Indian experience



# Warehouse receipt finance as a standard loan product

Goal: create a system where farmers, traders and others know that if they deposit goods of minimum quality X into one of the warehouses A, B, C, they will obtain funding at conditions Y. (Works e.g. in India, Malaysia)

Does not require a comprehensive warehouse finance law.

Rather, it requires:

- Approval processes for the warehouses that are to become part of the process
- Efficient (electronic) procedures between the warehouse and the bank
- Proper risk management systems.

The result: a new product to provide fast, easy credit.



**Agri Business/Commodity Backed Loans in an instant !** **At Unbelievable Rates**

**Agri Business Loans**

- ◆ Loans available for Processors, Aggregators & Traders in Agricultural sector
- ◆ Overdraft & Term Loan facilities available
- ◆ Term Loans available upto a maximum of 15 years
- ◆ Loans available against Residential/Commercial/Industrial properties\*

**Commodity Backed Finance**

- ◆ Loans available to Farmers, Aggregators and Processors
- ◆ Loan against Agri commodities stored in CWC/SWC/Licensed Warehouses/Private Warehouses & Godowns or Dematerialised Agri Commodities
- ◆ Wide Range of Agri Commodities permissible
- ◆ Maximum term of 12 months and maximum funding of 75% depending on type of commodity

**Call us at:**

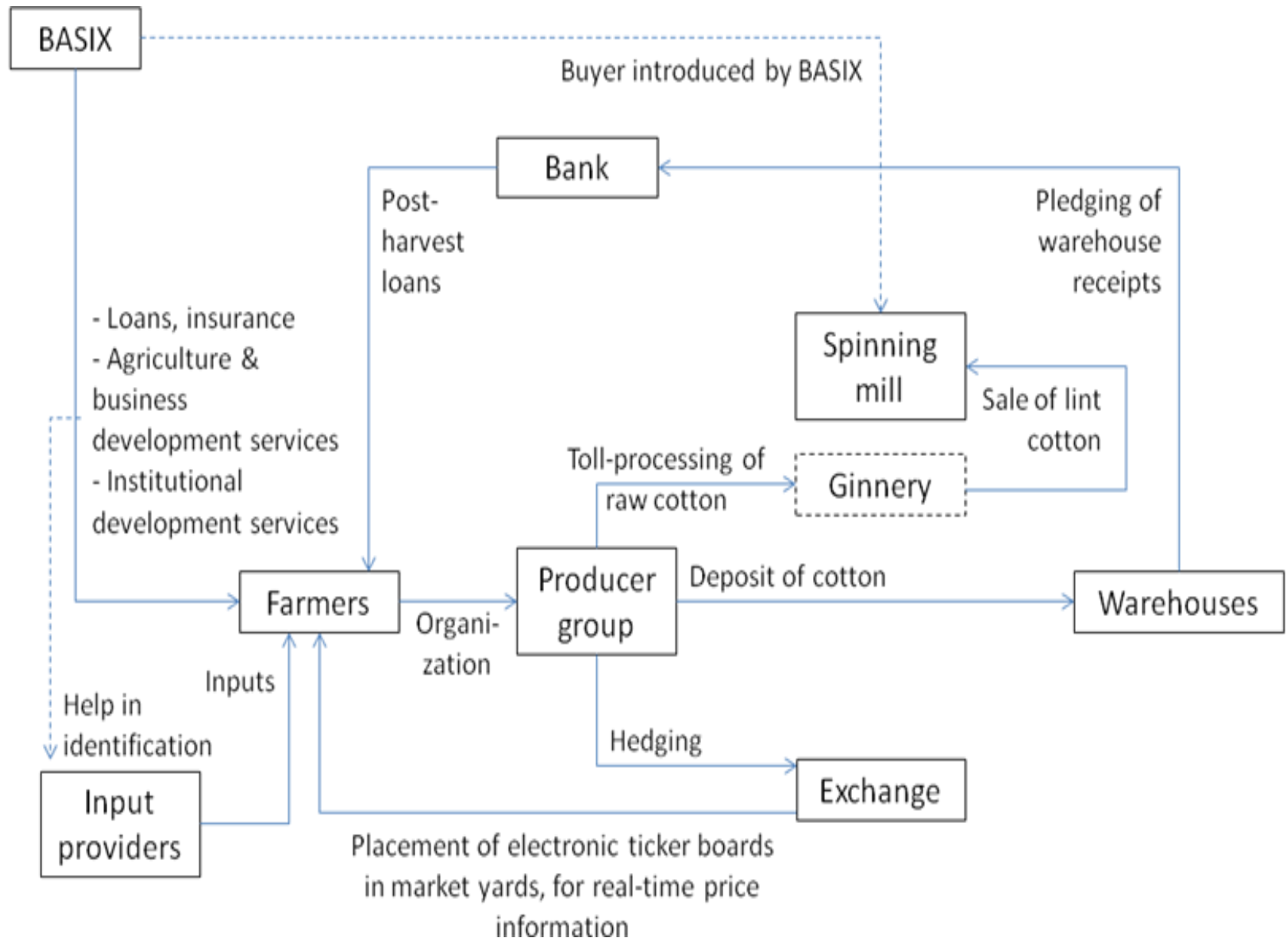
Mumbai - 28307799, Hyderabad - 23128777, Karnataka-994557 7799, Tamilnadu - 9894477799, Andhra Pradesh-984957 7799, Delhi Mobile - 9818177799, Kerala - 9895477799, Chattisgarh & MP - 9893147799, Coimbatore - 4397799, Chandigarh - 5055799, Lucknow - 9895477799, Uttaranchal - 9897477799, Haryana-989617 7799, Punjab - 981597 7799, Jaipur-9829256549, Indore - 402 7799, Ahmedabad-66309891, Kolkata - 9831377799, Chennai-42047799, Bangalore - 41287799, Cochin-9936117799, Maharashtra & Goa - 9890447799, Gujarat-9898277799, Bihar & Jharkhand - 9934017799, West Bengal-9932007799, North East - 9862407799, Himachal Pradesh-9816647799, Jammu & Kashmir - 9906967799, Orissa-9938487799, Assam - 9954727877, UP East-9936127799

**# Once the call gets connected, dial 15 or 25 to talk to a phone banking officer**

**ICICI Bank**  
**Agri Business Loans**

*Its time your efforts paid off!*

# Embedding farmers into value chains: a MFI example



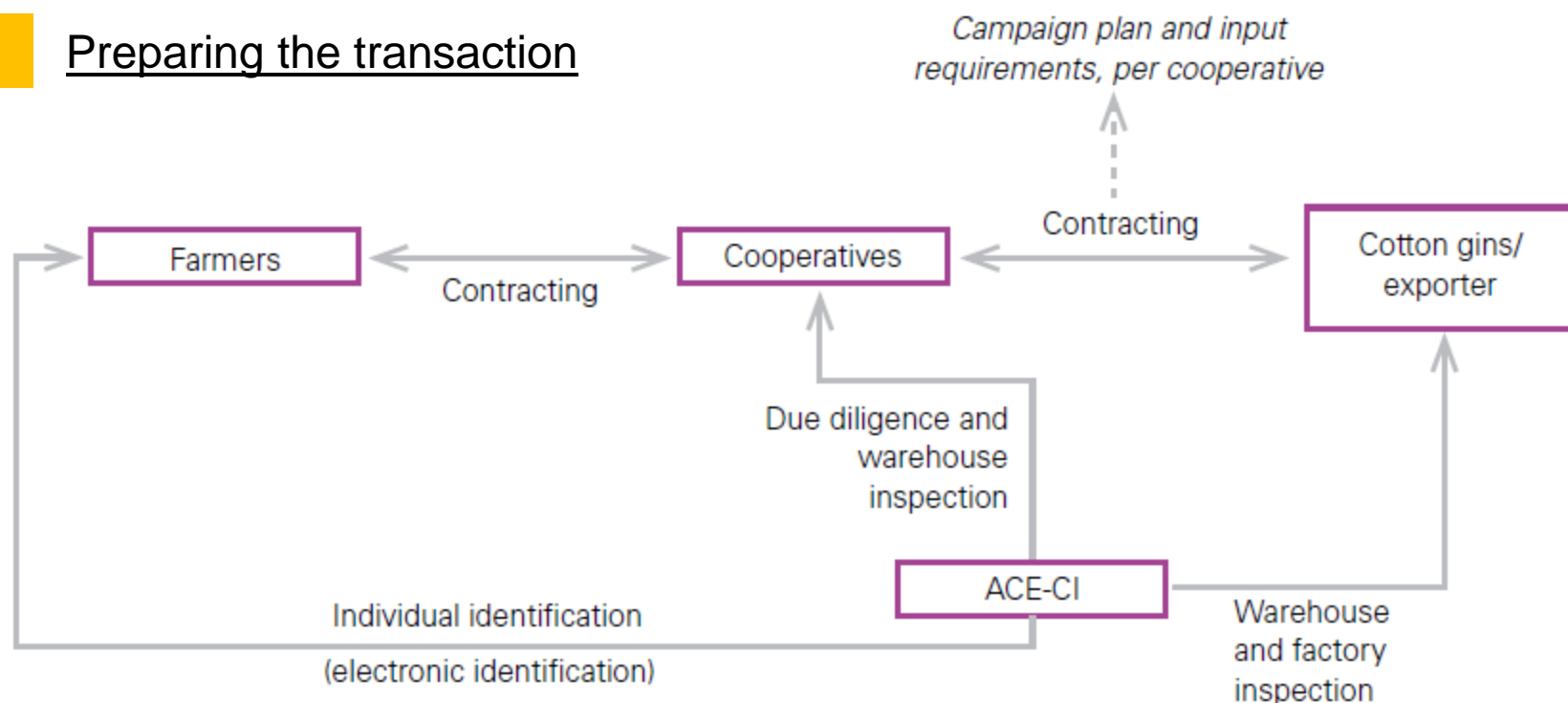
# Structured financing tools: unlocking production potential

## Example: reviving Côte d'Ivoire's cotton production post its civil war

Cotton is the major cash crop in the north of Côte d'Ivoire, providing direct and indirect income to some 3.5 million Ivoirians. Civil strife, which started in 2002, severely disrupted production, which declined from 400 000 tonnes to 150 000 tonnes in just two years.

Reviving the cotton sector became a crucial part of the programme of national reconstruction. A structured finance facility which enabled the supply of seeds and inputs to farmers as well as campaign finance to the ginneries was a core element of the cotton strategy. The facility, funded by the Islamic Development Bank, was structured as co-financed import of inputs, backed by proceeds of cotton exports.

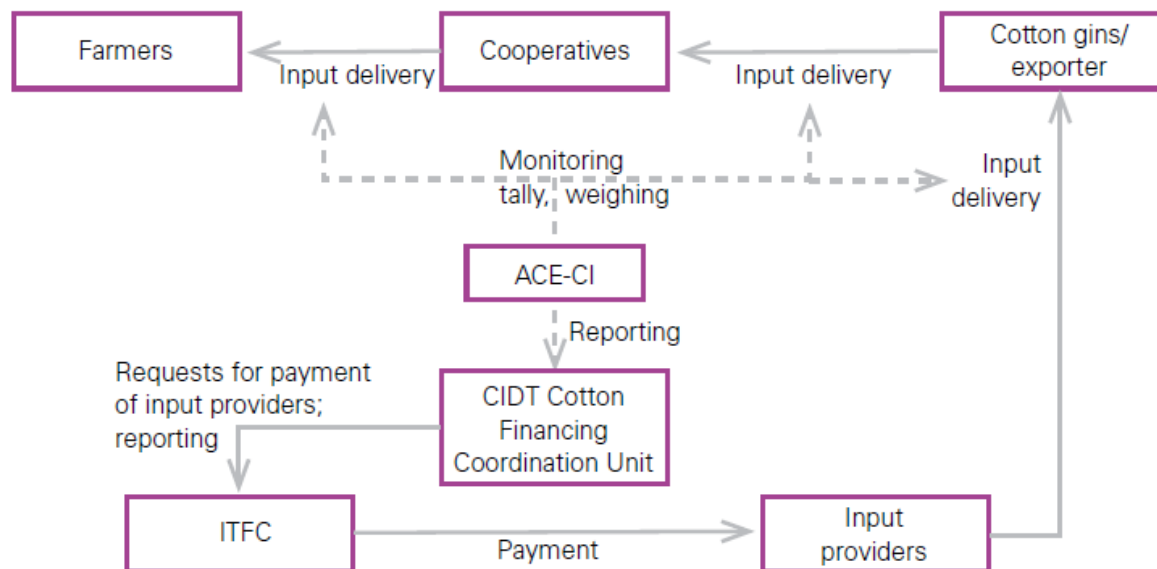
### 1 Preparing the transaction





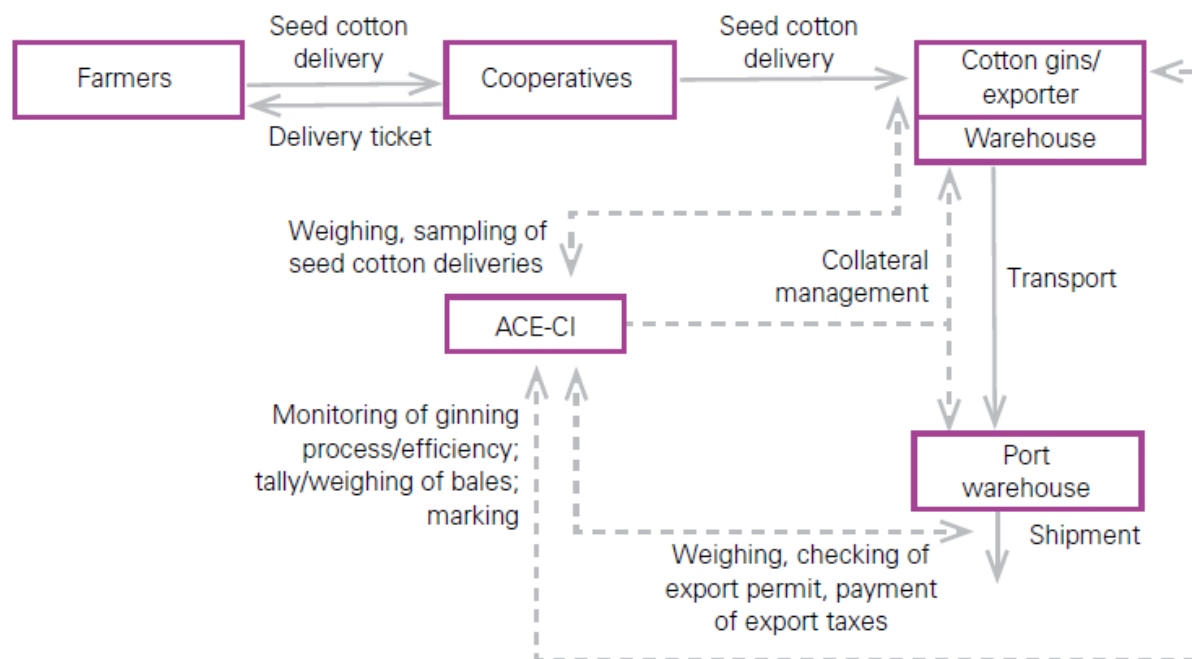
2

## Distributing the inputs



3

## Securing reimbursement



## **Enabling efficient markets**

The role of commodity exchanges

The benefits of an organized warehousing network

# Commodity exchanges will become increasingly mission-critical for food security

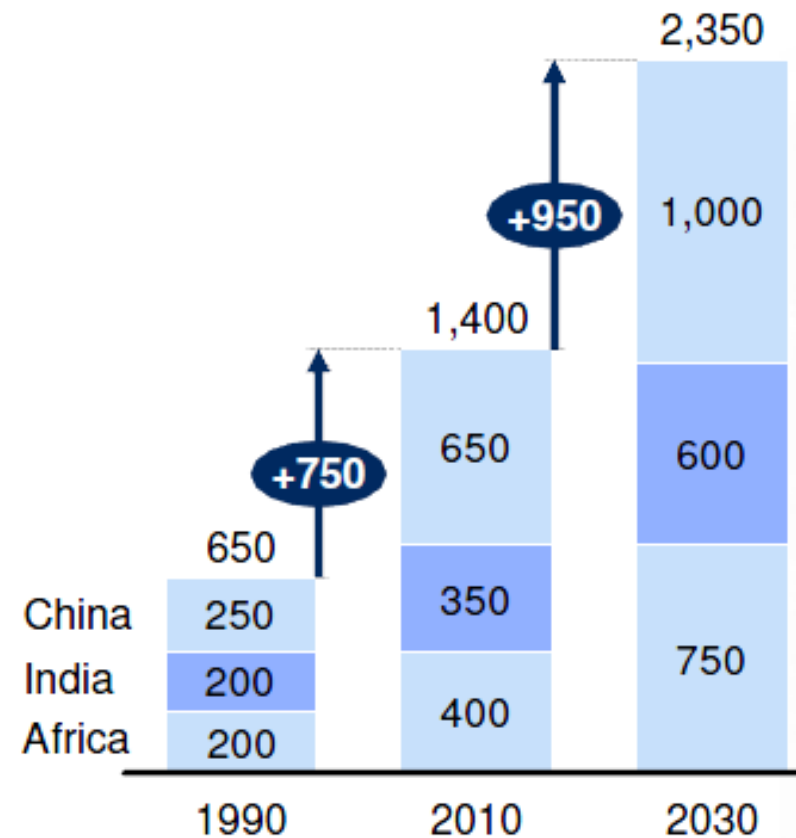


Food security requires efficient markets:

- Efficient, empowered market-oriented producers
- Efficient, low-cost ways to transfer food from producers to (increasingly urban) producers
- Mechanisms to manage the inescapable vagaries of food markets – both physical (storage) and financial (hedging, insurance).

The tensions on the food system are huge: food demand will increase 70% from 2012 to 2050. Commodity exchanges can play a catalytic role in getting the most out of available resources.

Total urban population in China, India and Africa  
Million



SOURCE: McKinsey Global Institute

# An exchange plays a catalytic role in building markets



## INTERFACE: TRADER & BROKER PLATFORMS

*Trading Screens and Member Admin Terminals*



*Market Information System*



*Training Academy*

## INTERFACE: TRAINING & CAPACITY-BUILDING



EXCHANGE & CCP CLEARINGHOUSE

# EXCHANGE

*Empanelled Clearing Banks*

## INTERFACE: PAYMENTS AND FINANCIAL FLOWS

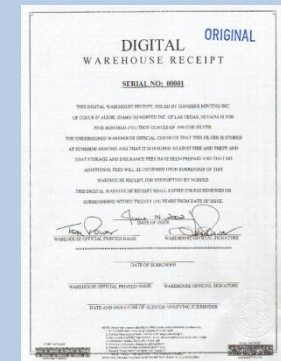


## INTERFACE: COMMODITY DELIVERIES

*Empanelled warehouses, inspection and collateral management firms*

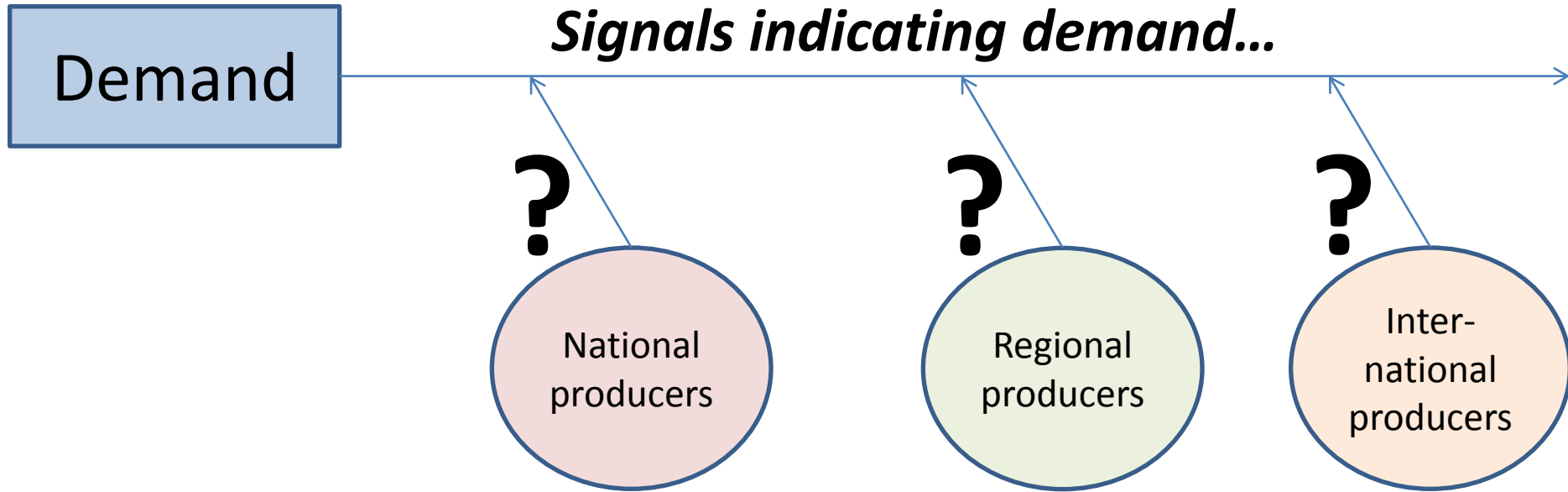


*Warehouse Receipt Depository*





# Meeting consumers' demands can be difficult...



Having a futures market in place can make a big difference. E.g., Africa's demand for maize... regularly supplied from the USA. India's demand for pulses: supplied from Canada and Australia.

However, when 'chickpeas' futures contracts were permitted to operate properly, until 2007, this enabled **African farmers** to supply the Indian market. East African traders were able to lock in future prices (through their Indian buyers) on the Indian exchange, and offer attractive forward prices to African farmers willing to plant chickpeas.

# The structural impact of commodity futures exchanges



Commodity exchanges help build more sustainable, more robust food sectors. E.g., in India (where electronic exchanges started in 2003):

- Improved price correlation within the country
- Improved post-harvest prices and lean season consumer prices, as new investors are encouraged to engage in commodity storage
- Long-term price curve acts as tool (and incentive) for farmers to decide what crops to grow
- Some large farmers and cooperatives hedge their price risks
- Price signals help to improve government's decisions on food imports
- Empowerment of value chain: marketing margins shrink; redundant participants in the chain are removed; and the share of 'weaker' parties (farmers as opposed to traders; exporters as opposed to global buyers) improves
- Exchanges stimulated development of infrastructure

# Exchanges create absolute welfare gains



Jensen

14 September 1997

## THE QUARTERLY JOURNAL OF ECONOMICS

Vol. CXXII August 2007 Issue 3

THE DIGITAL PROVIDE: INFORMATION (TECHNOLOGY),  
MARKET PERFORMANCE, AND WELFARE IN THE  
SOUTH INDIAN FISHERIES SECTOR\*

ROBERT JENSEN

TABLE I  
PRICES AND EXCESS SUPPLY AND DEMAND IN FIFTEEN SARDINE BEACH MARKETS

	Price (Rs/kg)	Excess buyers	Excess sellers
<b>Kasaragod District</b>			
Hosabethe	6.2	0	0
Aarikkadi	4.0	0	0
Kasaba	0.0	0	4
Kanhangad	7.2	0	0

The pie gets  
bigger!

With coverage increasing; outside home market sales 0% → 35%

In 2000 end study; no waste; LOP; fisherman profits up 8%; fish price down by 4%

<b>Kozhikode District</b>			
Chombala	9.9	15	0
Badagara	0.0	0	11
Quilandi	9.8	12	0
Puthiyangadi	0.0	0	6
Chaliyam	6.4	0	0

# Exchanges make the pie larger because they create better information; and empower decision-making



## “Who Wants to be Millionaire”:

- The success ratio in answering the question;
  - Homogeneous mix of studio audience
    - Though a poll – **91%**;
  - The smartest person known to the contestant
    - Though a phone – **65%**

*Despite no scientific scrutiny due to different questions asked to the studio audience and the assumedly smart person, still the sheer high difference in success ratio conforms **the power of the crowd***

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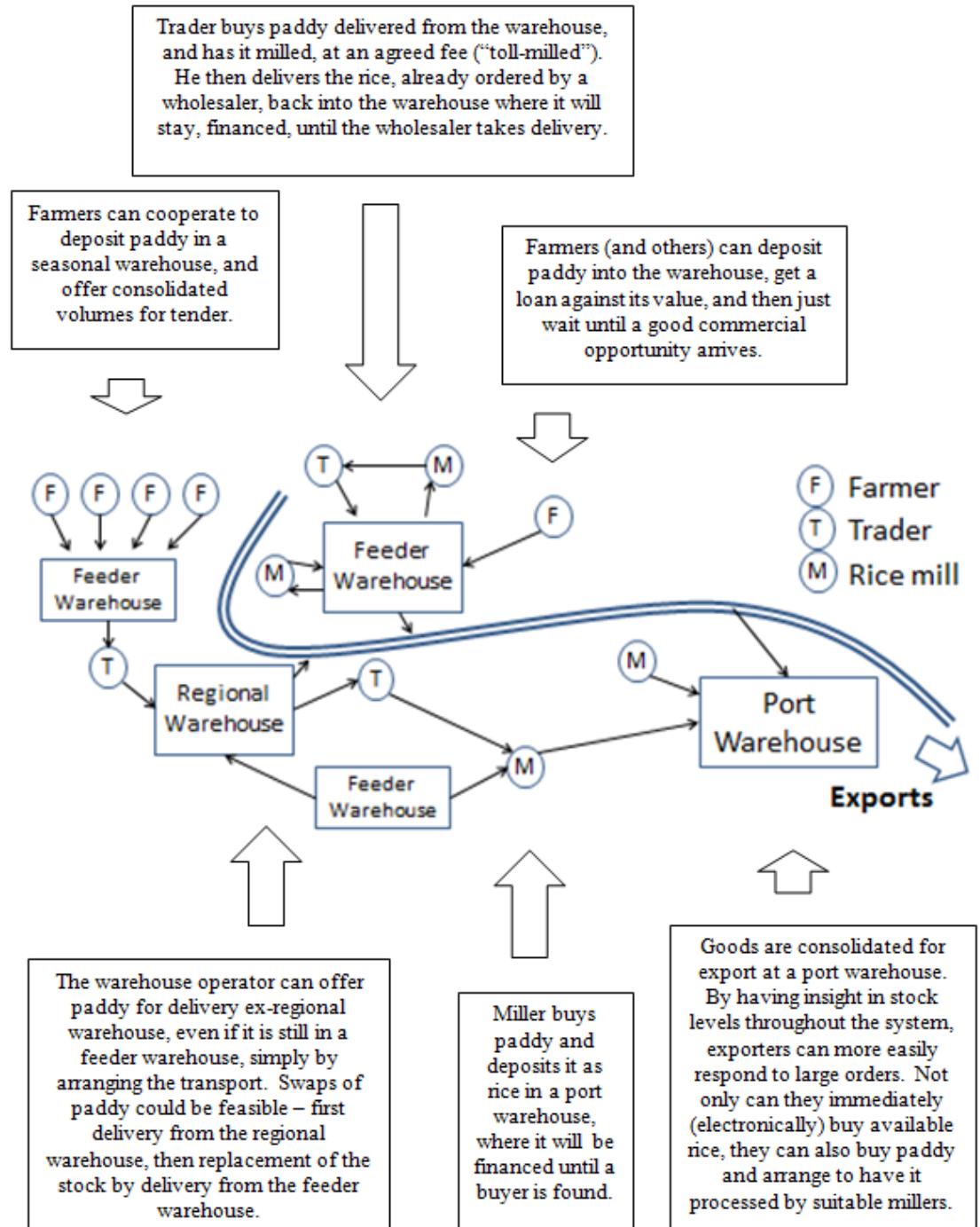


**"Business is all about taking chances. So what are you waiting for? Go ahead and jump!"**

# The benefits of an electronically-linked warehousing network

*Permits to*

- link the financial and commodity sectors, at all levels (from farmer to enduser/exporter)
- permits large efficiency gains
- strengthens the bargaining position towards further-up parts of the value chain.



## **Leveraging national and international food security mechanisms**

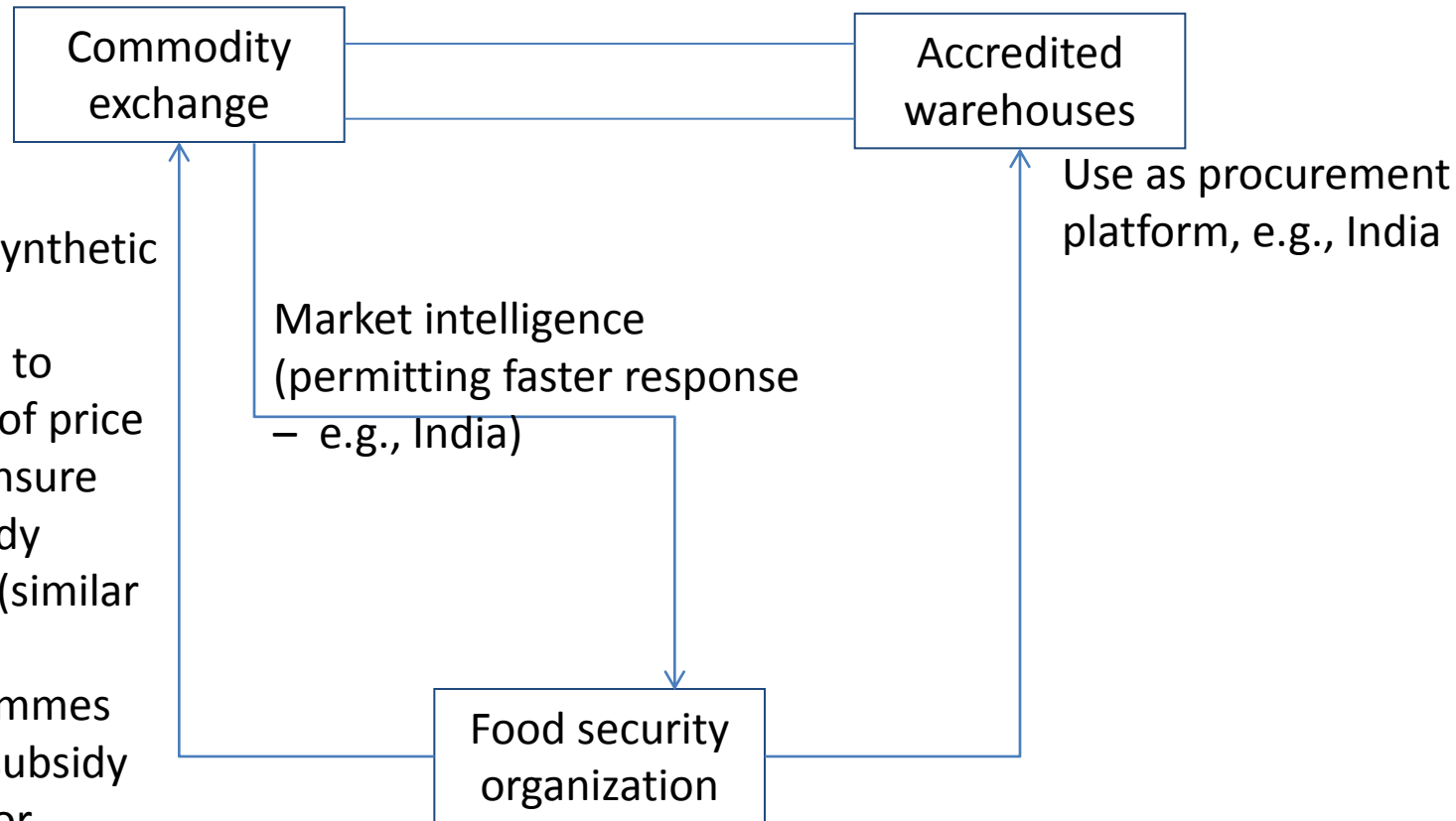
Using commodity exchanges

Using structured finance tools

- *Leveraging migrant remittances for agricultural investment*
  - *Catastrophe insurance*
  - *Securing food imports in times of high prices*

# The direct uses of commodity futures exchanges by food security organizations

- Use of futures as synthetic (“virtual”) stocks
- Use of call options to protect against risk of price increases, e.g., to ensure that allocated subsidy budget is sufficient (similar to US municipal government programmes to secure fuel cost subsidy programmes for poor households).



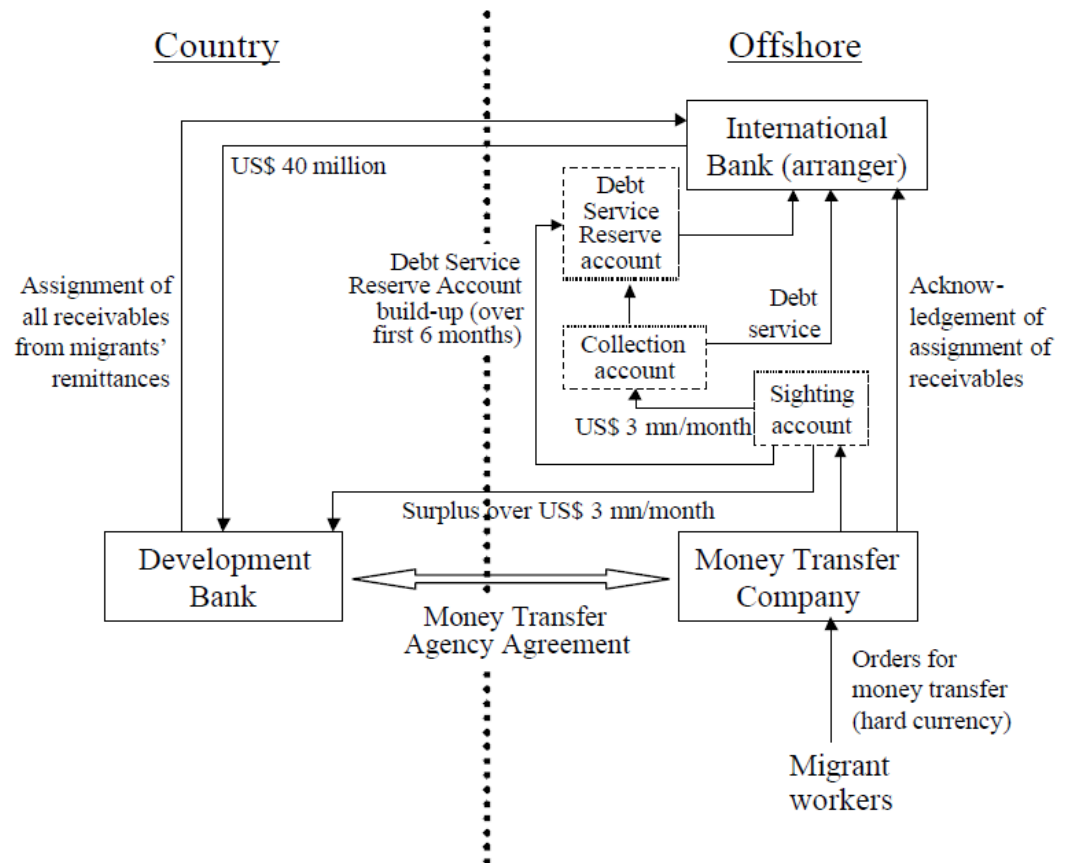
## Setting up a local agricultural investment fund leveraging migrant remittances

The government of Ghana recognized the need to modernize its agriculture if it hoped to continue to be a major exporter of an important commodity. Thus, it encouraged one of its (state-owned) development banks to work with some international banks to design a financing structure that enabled the development bank to raise a larger sum of hard currency financing than it could otherwise have raised, for a longer tenor [3 years], and at a very competitive pricing, given the tenor and African market practice. The development bank was then able to use the funding to expand its lending to agriculture.



The deal took advantage of a rising level of migrant remittances made possible by the large number of people who had emigrated to Europe and the Americas during a period of severe economic difficulties many years earlier.

Prior to the deal, home remittances from this pool had become sufficiently important for the development bank in question to enter into a Money Transfer Agency Agreement with one of the major international money transfer companies. By the time the deal was being arranged, amounts handled had increased to more than US\$ 50 million per annum, some ten per cent of total officially recorded remittances.







“CCRIF offers parametric insurance which disburses funds based on the occurrence of a pre-defined level of hazard and impact without having to wait for an on-site loss assessment. This feature is quite different from traditional indemnity-based insurance products in which claims are paid based on formal confirmation of the amount of a loss through on-site verification.

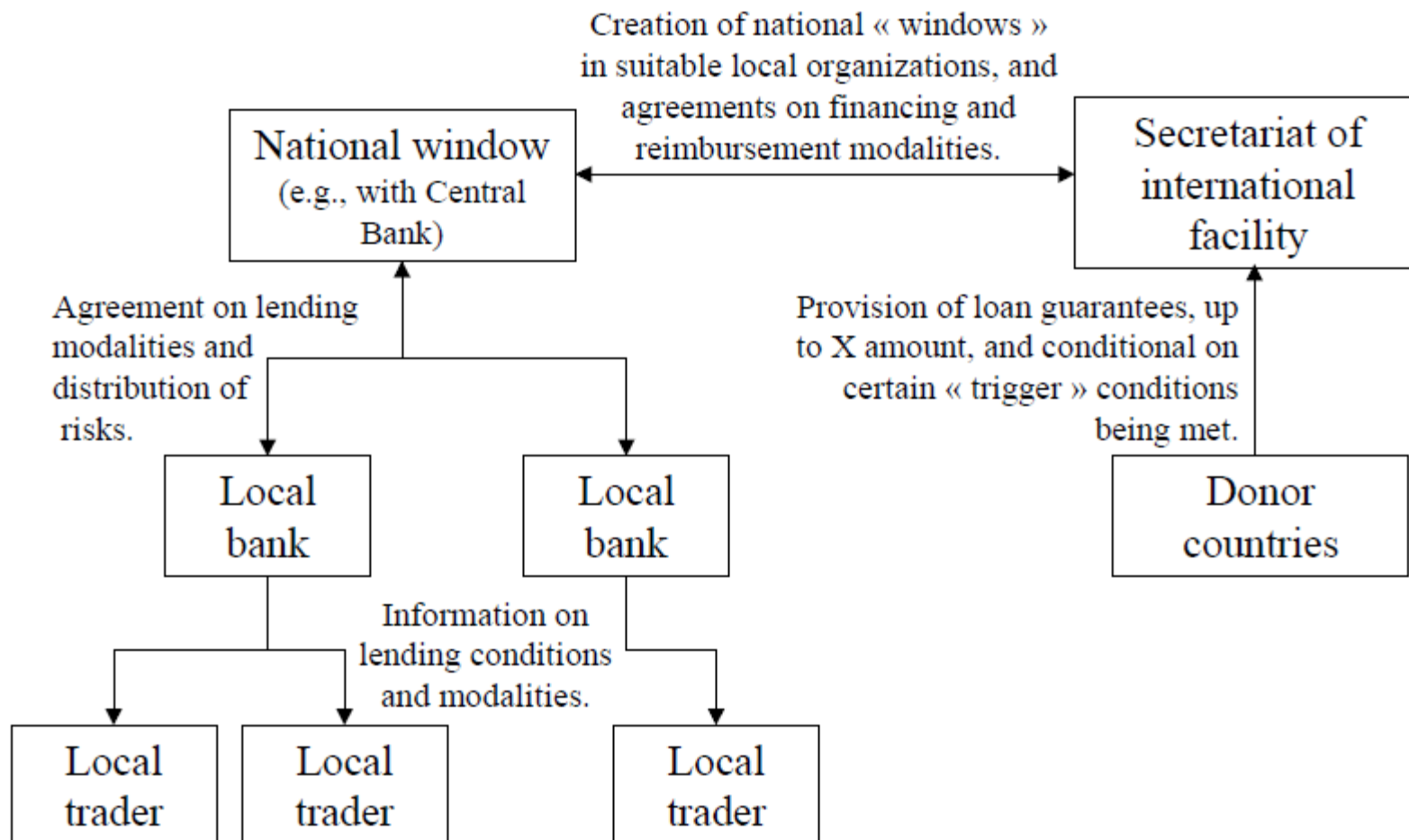
For the CCRIF instrument, payouts are made on the basis of exceeding a pre-established trigger event loss which is estimated in a model in which hazard inputs are generated (e.g. wind speed and storm surge in the case of tropical cyclones or ground shaking for earthquakes) from independently-provided input data (such as a tropical cyclone track or earthquake location/magnitude). These hazard levels are then applied to the pre-defined government exposure to produce a loss estimate. Payouts above the trigger level increase with the level of modelled loss, up to a pre-defined coverage limit.

Therefore payouts can be calculated and made very quickly because there is no need to estimate damage after an event.”

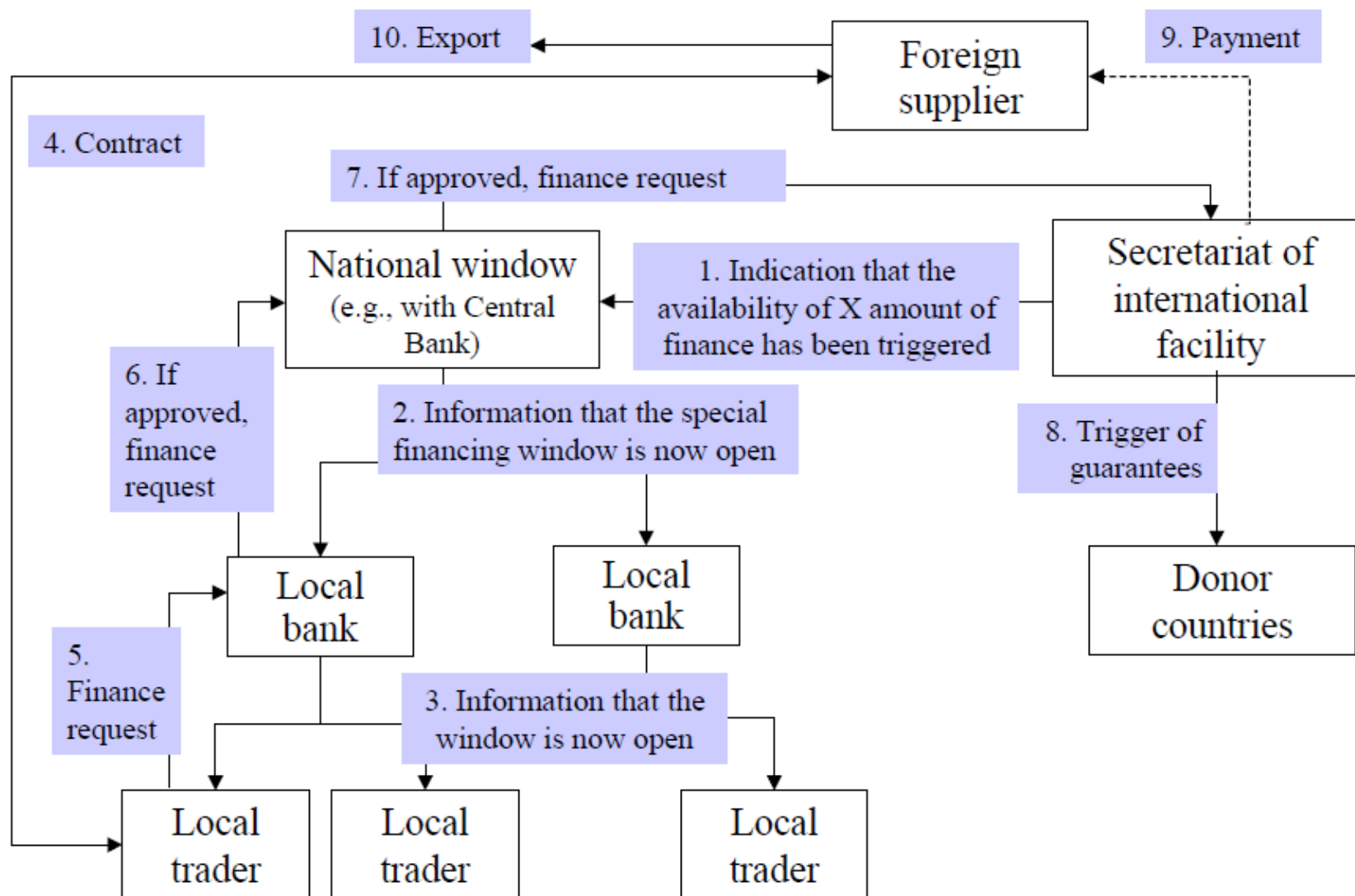
# A proposed fund to assist net-food importing countries to retain critical food import levels at times of high prices (Marrakesh Decision)



## The set-up of the fund



## Disbursement under the fund



# Thank you !



***Be the change you  
wish to see in the  
world.***

Mahatma Gandhi

