Reliable Supply, Quality & Prices
What can be learned from operational ICT enabled services

More Money from Agriculture

13th October 2011
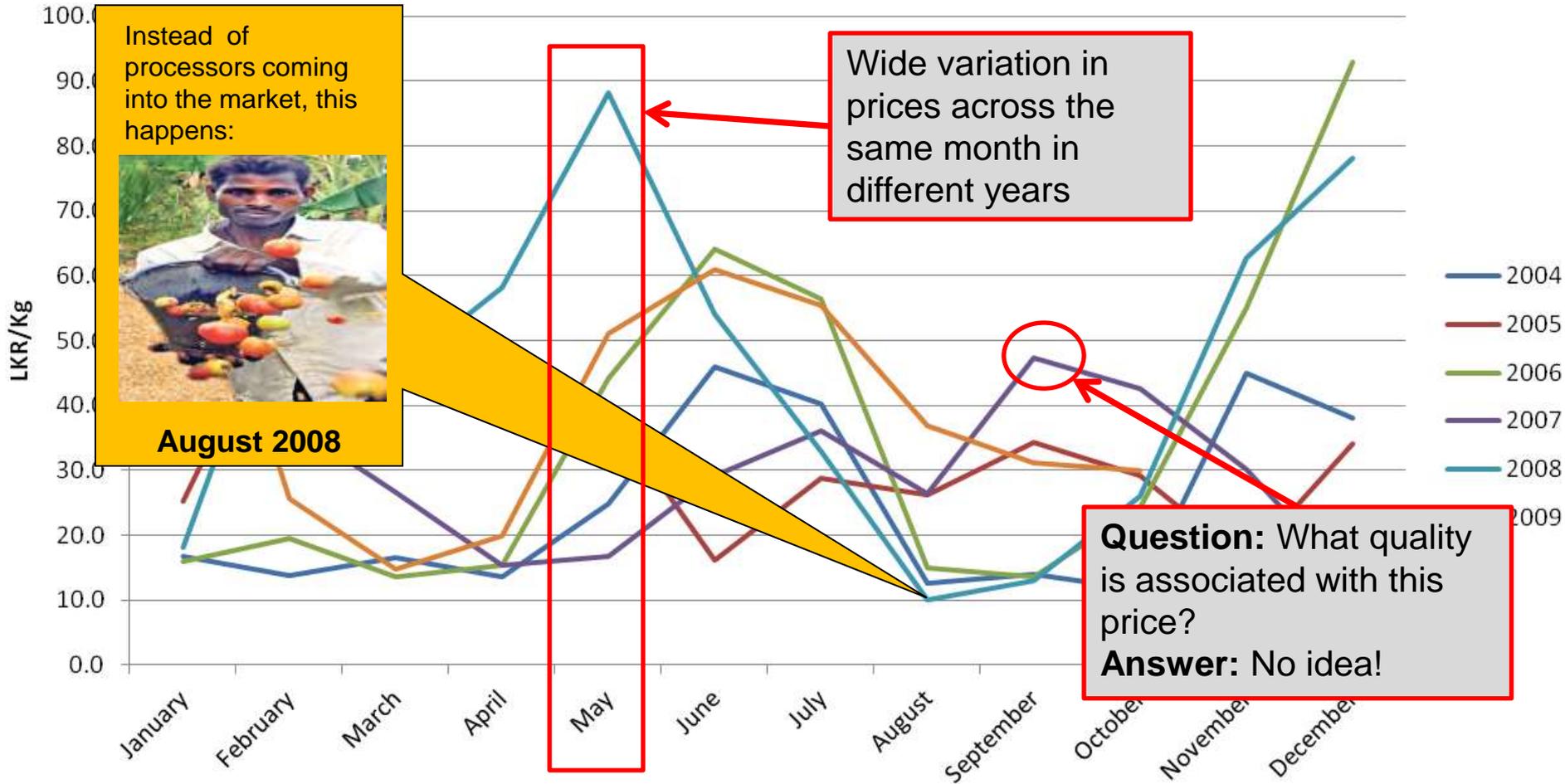
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What's happening with Sri Lankan agriculture?
Tomato prices at DDEC (2004 - 2010)

Instead of processors coming into the market, this happens:

August 2008

Wide variation in prices across the same month in different years

Question: What quality is associated with this price?
Answer: No idea!

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Even inter-day and intra-day volatilities are high

Daily Price Movements at DDEC
Cabbage - Dambulla, Melsiripura

150% difference between lowest and highest prices that day!
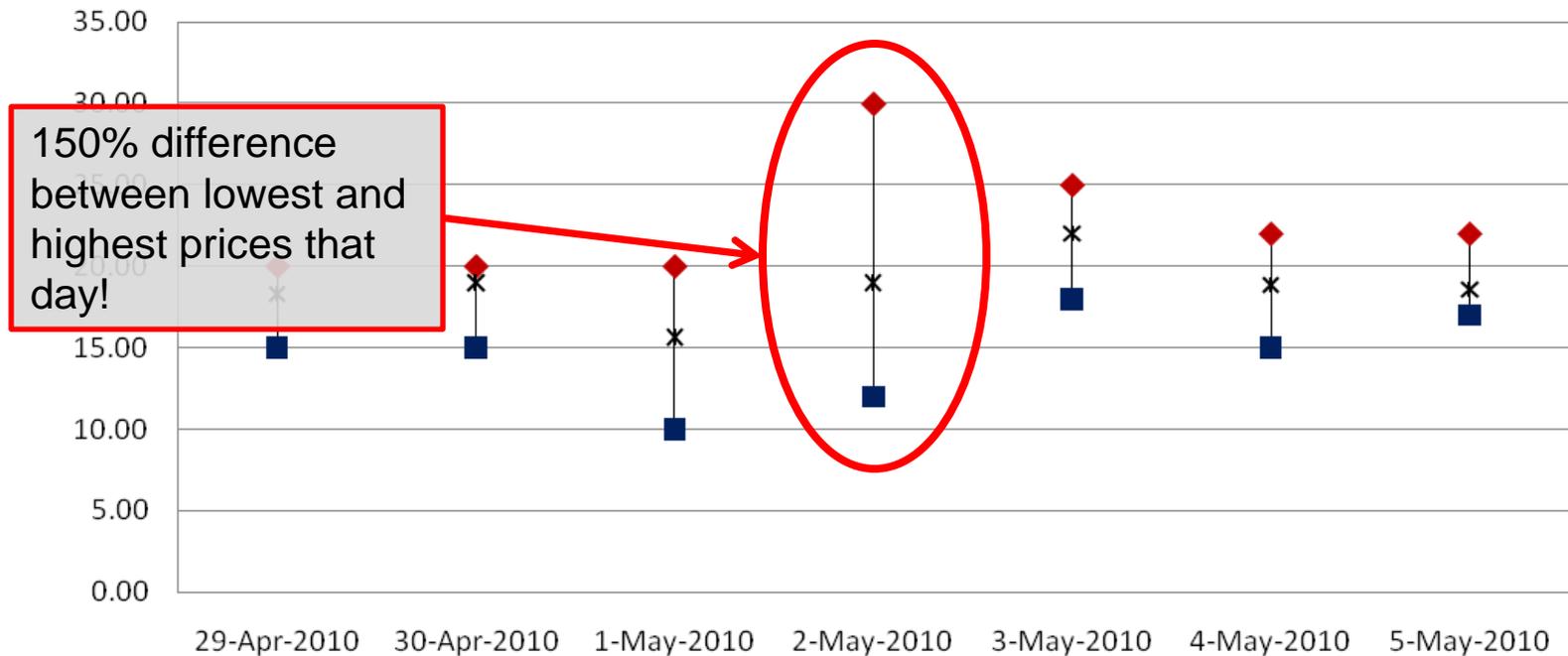
	29-Apr-2010	30-Apr-2010	1-May-2010	2-May-2010	3-May-2010	4-May-2010	5-May-2010
◆ High	20.00	20.00	20.00	30.00	25.00	22.00	22.00
■ Low	15.00	15.00	10.00	12.00	18.00	15.00	17.00
✖ Average	18.29	19.00	15.67	19.00	22.00	18.83	18.60

- But the kicker is that high seasonal, inter and intra-day volatility is common amongst most fruits and vegetables grown in Sri Lanka

Agriculture in South Asia exhibits low productivity

|	Bangladesh	India	Pakistan	Sri Lanka
Share of GDP (2009)	18.7%	17.5%	20.8%	12.8%
Labor employed by sector (2009)	45%	52%	43%	32.7%

- Despite its low contribution to the economy, it has a disproportionately large contribution to labor
- The sector is generally characterized by various problems:
  - Land related issues (ownership as well as use)
  - Large numbers of small poor farmers who are mostly not land owners
  - Low productivity
  - Inefficient markets
  - High information asymmetry
- 75% of the world's poor live in rural areas (WB, 2007) where farming is the main source of employment

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Buyers unhappy; growers also unhappy

- Buyers are unable to obtain their **required quantities**, of **set qualities** at **stable prices** from the market.

- Farmers are unable to provide the required quantities of set quality at the times needed by buyers because:
  - Farmers have limited market orientation and make sub-optimal decisions with poor crop mix since they don't know what is needed and when
  - Farmers have limited agricultural know how and weak incentives in current market conditions to grow higher quality crops
  - Farmers have poor livelihoods; unable to leverage crops for working-capital loans (either pre harvest, i.e., forward contracts or post-harvest, i.e., warehouse financing) to improve productivity and/or smoothen their incomes

So what can ICTs do for Agriculture?

- ICTs can't solve all the problems
  - E.g. land reforms
- ICTs can potentially reduce information search costs
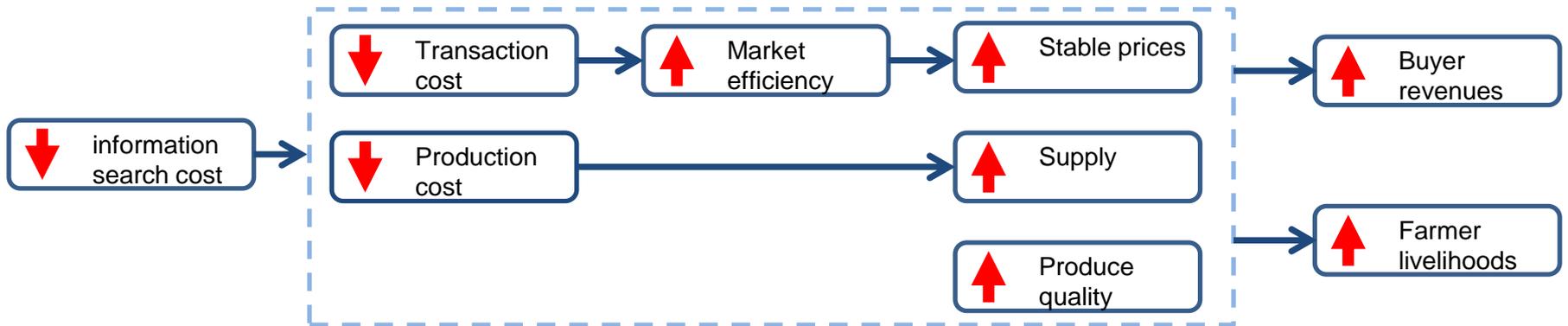
- ICTs can potentially reduce enforcement and monitoring costs
  - By enabling traceability
- Can facilitate knowledge networks

A regional comparison of operational ICT platforms for agriculture

	IKSL, India (Jun 2007)	RML, India (Oct 2007)	Tradenet , Sri Lanka (Dec 2009)	IVR system, Bhutan
Services Provided	Market price information Crop advisory service Weather forecasts	Market price information Crop advisory service Weather forecasts	Market price information, Trading platform matching buyers and sellers	Market price Information
Partners	Bharti Airtel + Indian Farmers Fertiliser Cooperative Limited (IFFCO)	none	Dialog Axiata PLC + Govi Gnana Seva (GGS)	B-Mobile + SNV + Ministry of Agriculture, Marketing and Cooperatives
Mode of delivery	Voice message IVR	SMS	SMS, USSD, Internet/WAP, Call Center	IVR
Price	Free Voice messages Helpline service: INR 1/ min	Maharastra: INR 175 for 3 months INR 350 for 6 months INR 650 for 12 months	Free for the moment except for Call center (LKR 3+Taxes per min)	Free
Subscriber numbers	1.5 million (Oct 2009)	170,000 (Oct 2009)	~13,000 (includes non-agricultural subscribers)	Data not available
How is data collected	Through the auctioneers in the mandis	Through dedicated price collectors employed by RML at the market they cover	Through dedicated price collectors employed by GGS at the market they cover	Through auctions under the Food Corporation of Bhutan

Agricultural VAS has benefits but there are basic problems that need to be solved

- Problems in data collection for these services: why should I trust them?

	IKSL, India	RML, India	Tradenet , Sri Lanka	IVR system, Bhutan
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- o What is needed is for government/ agent of government to collect data in a much more comprehensive manner and make that data available to any service provider who wants to add value/deliver across multiple formats to farmers

- Poor quality determination during market transaction means:
  - o Market price information is "noisy"
  - o Farmers have low incentives to improve the quality of their produce
- Warehousing/ cold storage + commodity backed financing is needed so that sellers can make better use of spot market information
- Forward and futures markets are needed to reduce volatility, reduce risk for farmers and buyers, and help farmers make better growing decisions

Utilizing ICTs while improving quality determination: a case study of castor seeds from India
(IFMR Trust + NSEL + NK Industries solution in Kadai, Gujarat)

- ICT-enabled buying center set up by large buyer close to Govt. APMC Mandi (i.e. regulated market). Result: "market price" at center consistently higher than at Mandi.
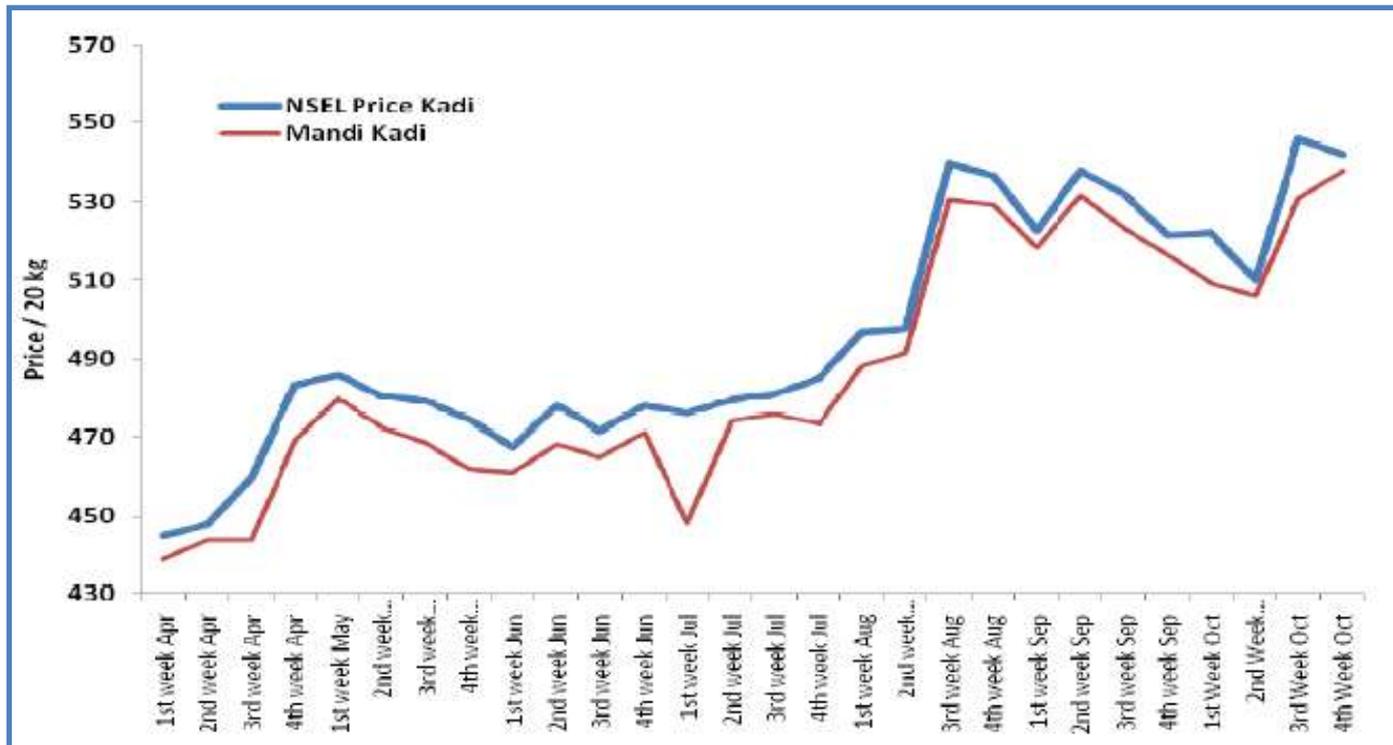
Utilizing ICTs while improving quality determination: a case study of castor seeds from India
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- Unlike the mandi, the new center utilizes ICTs:
  - Farmers get daily prices updates on their mobile phones (both mandi as well as center prices)
  - All trades are done through an electronic exchange

Utilizing ICTs while improving quality determination: a case study of castor seeds from India
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- What about quality determination?
  - Quality determination at mandi: visual, non-scientific; starting auction price based on auctioneer's discretion
  - Quality determination at center: scientific; buyer sets daily price for one specific high quality configuration; transparent discount scheme of price based on quality.
  - Farmer incentives to improve quality of produce: low at the mandi; higher at the center
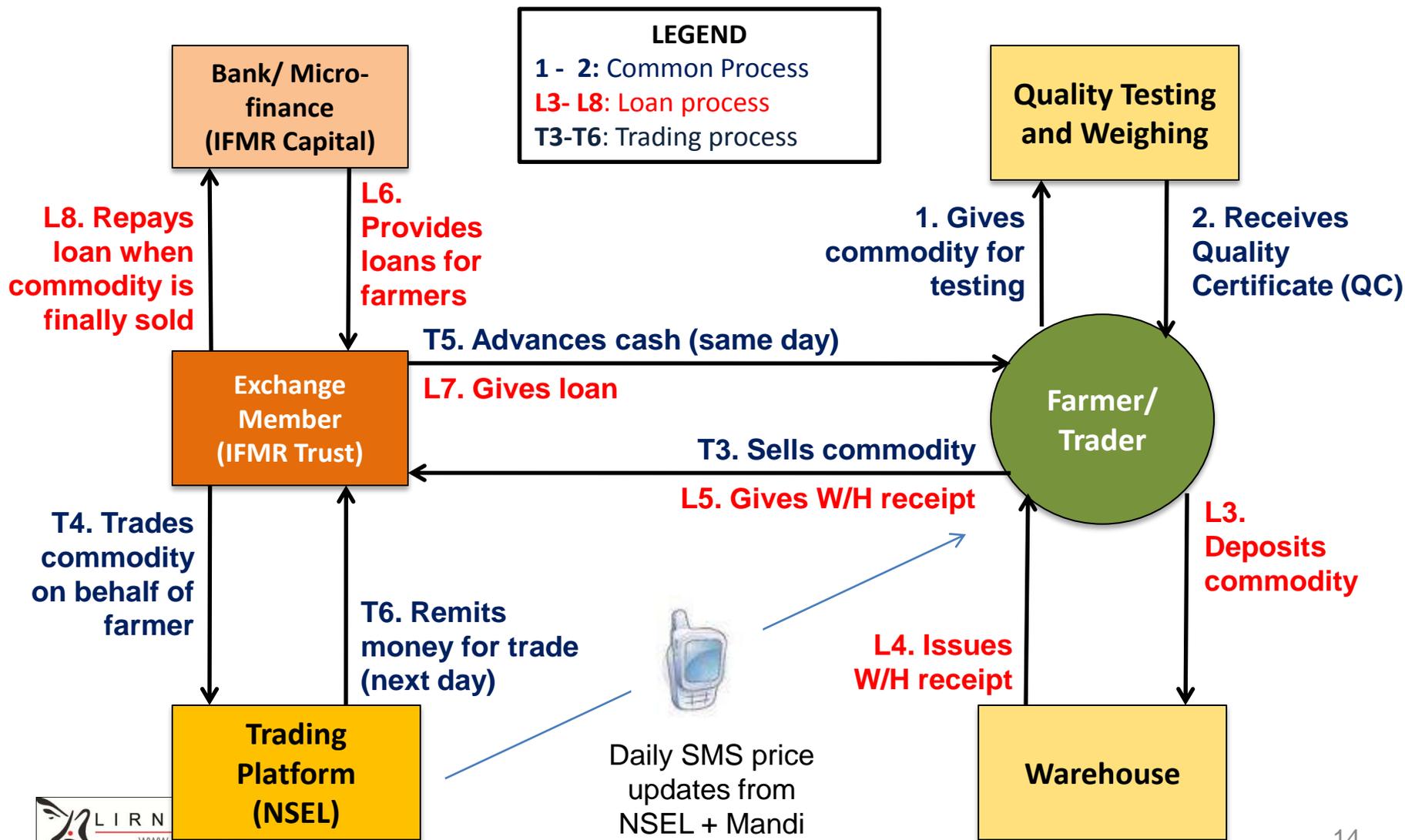

The sieve (left) and the 4.2litre container (right) used to check the foreign matter content and weight

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Utilizing ICTs while improving quality determination: a case study of castor seeds from India
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- Value of price information: low at the market ("market price" is noisy); High at the center (market price is for specific quality configuration)

Now add commodity backed financing to the mix

Bank/ Micro-finance (IFMR Capital)

LEGEND
1 - 2: Common Process
L3- L8: Loan process
T3-T6: Trading process

Quality Testing and Weighing

L8. Repays loan when commodity is finally sold

L6. Provides loans for farmers

1. Gives commodity for testing

2. Receives Quality Certificate (QC)

Exchange Member (IFMR Trust)

T5. Advances cash (same day)

L7. Gives loan

Farmer/ Trader

T3. Sells commodity

L5. Gives W/H receipt

T4. Trades commodity on behalf of farmer

L3. Deposits commodity

T6. Remits money for trade (next day)

L4. Issues W/H receipt

Trading Platform (NSEL)

Daily SMS price updates from NSEL + Mandi

Warehouse

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Warehousing for less perishable produce. Cold storage for more perishable produce

- Case of potatoes in Bangladesh:
  - 2nd most important crop after rice
  - Cold storage operators play an important role in the value chain
    - Allows farmer to avoid the market gluts during harvest season
    - Some operators even provide financing for farmers during storage.
  - Overall capacity is low (340 facilitates can store only about 25-30% of total production)
  - Yet there are inefficiencies in access with an average of 10% of storage capacity never being used.
    - Very amenable to an ICT solution whereby farmers look for and book storage before hand.

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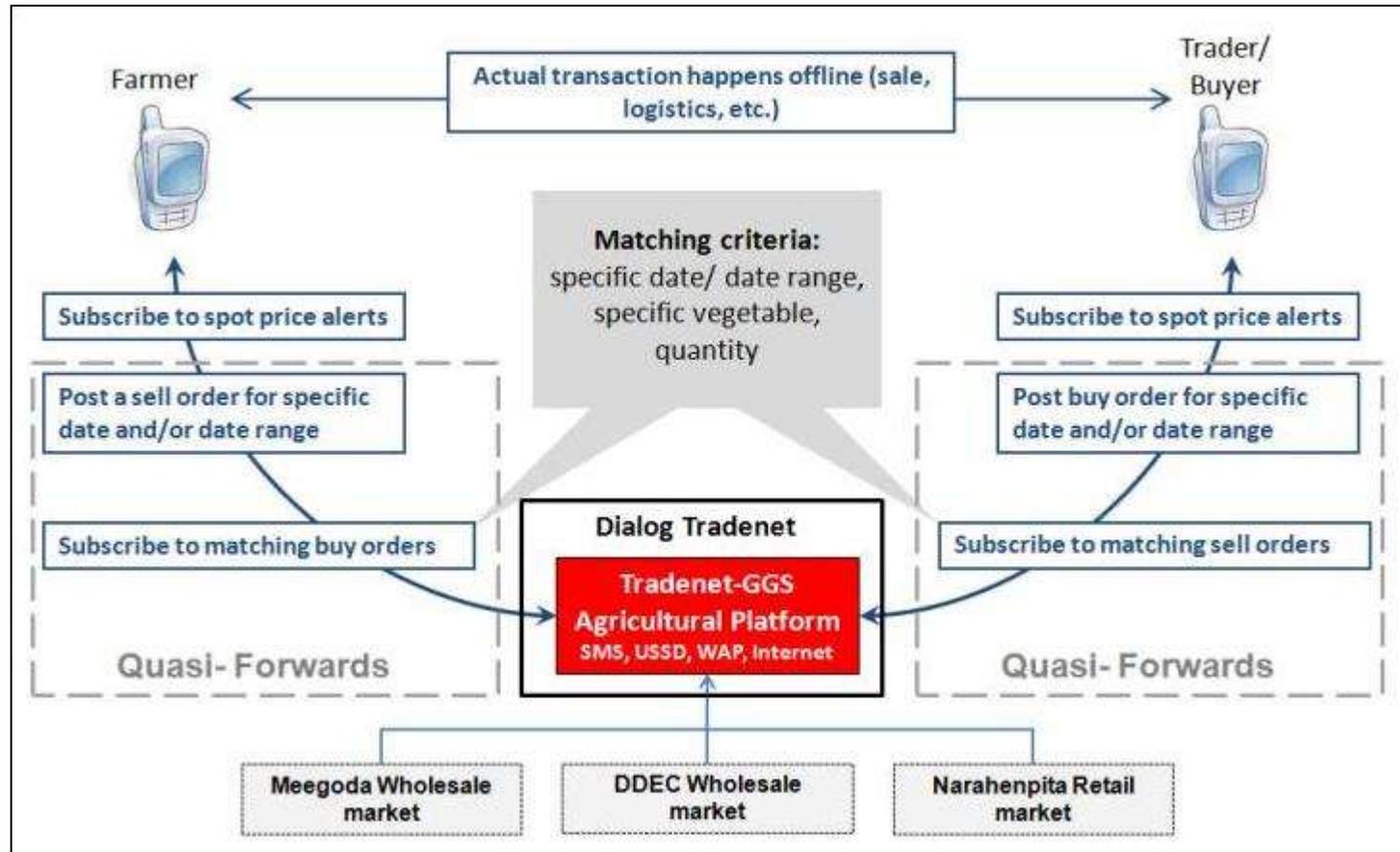# A possible ICT solution to address some of the needs in Sri Lanka
Tradenet (tradenet.dialog.lk)

Tradenet:
Partnership between a not-for-profit company called Govi Gnana Seva (GGS) and Sri Lanka's largest mobile operator (Dialog Axiata PLC)

Launched Dec 2009

GGS: main source of wholesale agricultural price information in the country

What can Tradenet do for you?

- Help find new suppliers

- Provide a private channel to communicate with your existing suppliers

- Soon will be able to make payments through the platform (might be viable for suppliers who are known i.e. whose quality you can be relatively sure of)

THANK YOU

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