

ICT Policy for Agriculture in LK an **economics** perspective

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Founder Director GGS; Govi Gnana Seva

Reality

- Farmers are poor
- Food is expensive



Fundamental problem

- Farmers stuck in small-scale subsistence agriculture and **unable** to move towards commercial agriculture
 - Household needs vs. market needs

Focus is on what ICT can do. Land ownership etc. are not discussed as only the State can address such.



Basic economics

- For commercial agriculture to succeed **efficient markets** are a pre-requisite
- Information is critical for efficient functioning of markets
- But,
 - Costly information → High transaction costs → inefficient markets
- Farmers stuck in subsistence agriculture



Challenge

- Move farmers from subsistence agriculture to commercial agriculture
 - Not all may want to
 - Others may do both...



Specific role of ICT

- Reduce information search costs → lower transaction costs → increase efficiencies in agricultural markets → increase welfare both for farmers and consumers
 - It is possible that ICT is used to improve subsistence farming, but this is of very little use



Many attempts to reduce information search costs

- Focus on information related to the Selling stage of the value chain [VC]
 - Reduce search cost of market prices [particularly for perishables]
- Printed material, radio etc.
 - HARTI; for a long time



The ICT example

GGIS pilot as hypothesis



[Back](#)



Before: Costly information search inside the market



Price capture at trader stalls



At the trader stall



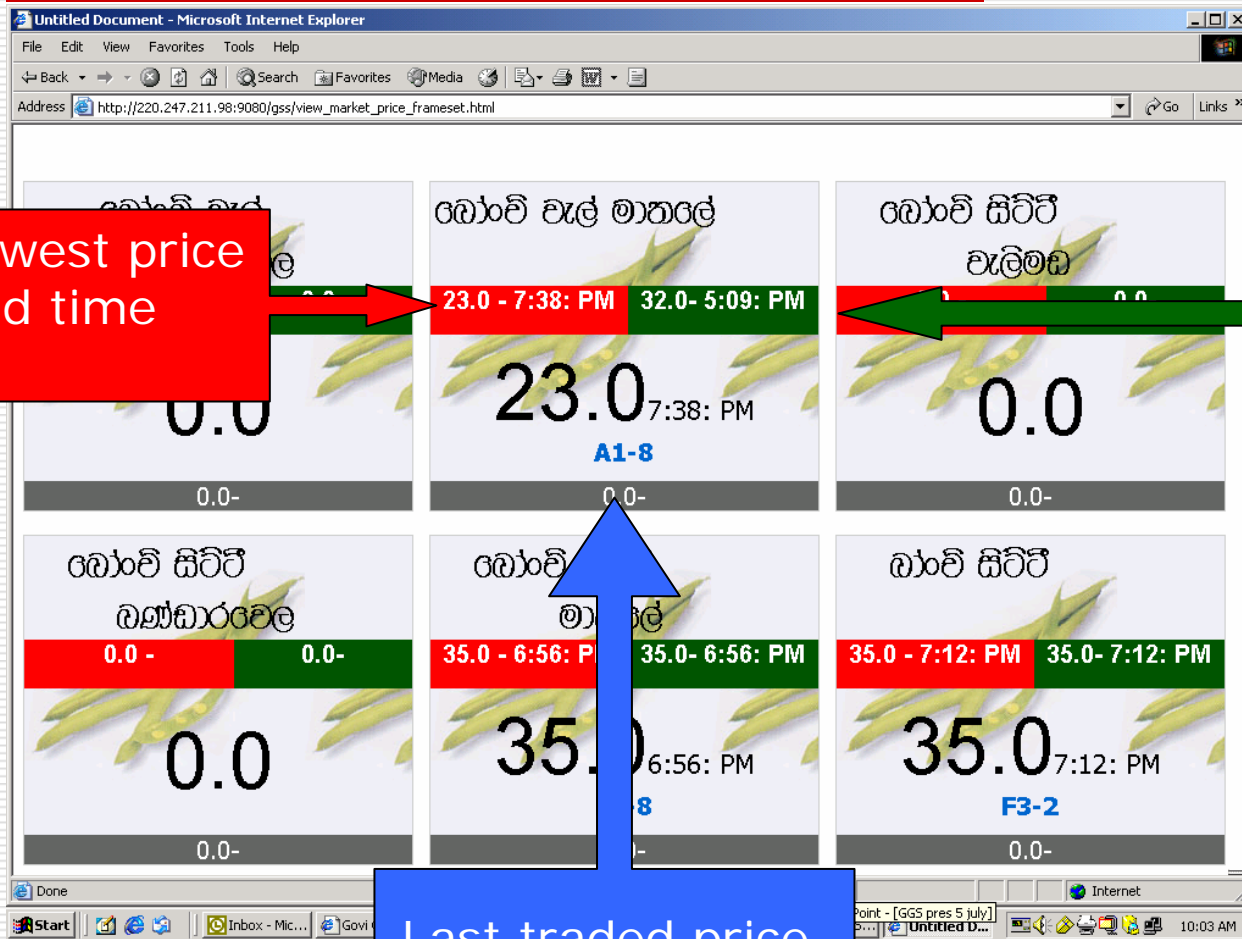
Walking data collectors



After: Spot price information disseminated at DDEC



GGs Price Boards at DDEC



Lowest price and time

Highest price and time

Last traded price, time and stall number

Privately funded collection and dissemination

Govi Gnana Seva

DDEC, Dambulla, Sri Lanka



Price List of 2009-07-15 at the Dambulla wholesale market

Next Last

Records 1 to 25 of 54

| Item | Low | | High | | Close | |
|--------------------|--------|----------|--------|----------|--------|----------|
| | Price | Time | Price | Time | Price | Time |
| Ala pakisthan | 78.00 | 16:04:00 | 78.00 | 16:04:00 | 78.00 | 19:30:36 |
| Ala-NuwaraEliya | 100.00 | 14:57:19 | 105.00 | 14:51:27 | 100.00 | 19:28:53 |
| Alu Kesel | 30.00 | 16:10:47 | 35.00 | 14:55:59 | 30.00 | 19:26:52 |
| AmuMiris | 70.00 | 19:50:21 | 75.00 | 19:50:14 | 70.00 | 19:50:21 |
| Annasi | 65.00 | 14:53:08 | 100.00 | 14:53:02 | 65.00 | 19:22:51 |
| Badairingu | 5.00 | 17:16:58 | 6.00 | 16:02:05 | 5.00 | 19:25:15 |
| Bandakka-Haritha | 28.00 | 16:04:51 | 30.00 | 14:55:48 | 28.00 | 19:24:57 |
| Bathala-Rathu | 28.00 | 19:50:36 | 32.00 | 19:50:31 | 28.00 | 19:50:36 |
| Bonchi-Melesiyan | 75.00 | 16:05:22 | 85.00 | 16:06:08 | 85.00 | 18:26:45 |
| Carrot-Nuwaraeliya | 65.00 | 14:52:00 | 70.00 | 14:51:56 | 70.00 | 19:30:48 |



h



Privately funded collection and dissemination 2

The screenshot shows a Mozilla Firefox browser window with the address bar displaying <http://www.lirneasia.org/asianict/ggs/viewprices.php>. The main content area features a table of prices for various commodities, organized into two rows. Each row contains three columns representing different locations. The prices are displayed in large font, with smaller text indicating the time of the last update. A sidebar on the right lists market news items with their respective prices and times.

| Commodity | Location | Price 1 | Time 1 | Price 2 | Time 2 | |
|-----------|----------------------------|---------|----------|---------|----------|-------|
| Del | Gowa-Dambulla, Melsiripura | 15.00 | 14:52:29 | 14.00 | 16:12:56 | |
| | | 40.00 | 16:01:46 | 38.00 | 17:17:21 | |
| | Gowa-Nuwaraeliya | 100.00 | 17:20:24 | 50.00 | 14:58:15 | |
| | | 14.00 | 19:34:33 | 38.00 | 19:31:00 | 55.00 |
| | | E2-8 | F1-8 | F2-7 | | |
| | | 34-25 | 34-25 | 34-25 | | |
| Inguru | Karavila-Daara Meleshiyan | 250.00 | 14:51:43 | 240.00 | 19:25:28 | |
| | | 55.00 | 17:20:50 | 50.00 | 16:07:51 | |
| | Karavila-Katu Meleshiyan | 42.00 | 16:05:51 | 40.00 | 17:19:00 | |
| | | 240.00 | 19:25:28 | 50.00 | 19:23:13 | 40.00 |
| | | E2-8 | E2-4 | E1-2 | | |
| | | 34-25 | 34-25 | 34-25 | | |

Market News (Sidebar):

- කොළ හීටි තුවරළිග 48.00 19:25:43
- මැ 40.00 19:25:51
- පැණි කොමඩු 14.00 19:26:05
- රාමු මොල් රාමු තුවරළිග 20.00 19:26:15
- තලන හිටු 30.00 19:26:24
- වට්ටකක මැලේසියන් 20.00 19:26:36
- අළු කෙරෙහල් 30.00 19:26:52
- මුරුගා මහියාගතය 55.00 19:27:34
- පැපාල් මැලේසියන් 40.00 19:27:45

Provided free to the Department of Agriculture RAKC at DDEC*



Crop Price List

| Crop | Unit | Price (Rs.) | Date and Time | Market |
|--|------|-------------|------------------|----------|
| Thibbatu සීබ්බටු THI | kg | 110.00 | 2009-07-14 08:10 | Dambulla |
| Tomato තක්කාලි TOM | kg | 50.00 | 2009-07-14 08:09 | Dambulla |
| Thibbatu සීබ්බටු THI | kg | 100.00 | 2009-07-14 08:09 | Dambulla |
| Red Onion Imp: රතුළඟු - ආනයනික ROI | kg | 60.00 | 2009-07-14 08:08 | Dambulla |
| Red Onion Lo: රතුළඟු - දේශීය ROL | kg | 58.00 | 2009-07-14 08:08 | Dambulla |
| Red Onion Lo: රතුළඟු - දේශීය ROL | kg | 60.00 | 2009-07-14 08:08 | Dambulla |

1 2 3 4 5 6 7 8 9 10 .. 905 Next

The prices are from the Dedicated Economic Centers, Cyber Units of the Department of Agriculture



So, the question is...

- Has all this helped reduce information search costs → lower transaction costs → increase efficiencies in agricultural markets → increase welfare both for farmers and consumers
- Well...
 - Some benefit
 - But farmers are still poor and food is expensive



Despair!

THE SUNDAY
TIMES

Sunday April 05, 2009

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VIDEOS

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NEWS

Farmers strike veggie mafia

With a ruthless mudalali mafia, virtually strangling the life out of vegetable growers around Dambulla and authorities doing little to intervene, farmers are allowing their crops to go to waste rather than sell them at absurdly low prices

By Leon Berenger in Dambulla, Pix by Sanka Vidanagama & Kanchana Kumara Ariyadasa

Grow your own food and be self-sufficient they were told, and those who followed this advice are facing desperate times, while a ruthless mudalali mafia makes a killing with the prices as the authorities appear to be turning a blind eye to the happenings.

THE SUNDAY
TIMES INSIGHT

This is Dambulla, bordering the North Central Province (NCP) described as the country's food basin where agriculture is the mainstay and the farmer is supposed to be king. But that was in the past. Now many of the farmers live a hand to mouth existence on the brink of beggary.

Every farmer, big or small is desperate as the price for their produce continues to take a free fall in the local wholesale market forcing some of the cultivators to allow their yield to rot in the fields rather than sell it at absurdly low prices.

This was the sad tale of many a farmer The Sunday Times spoke to. T.G. Nandasena is a father of three from the farming village of Unapanduruwewa some four kilometres north of the main Dambulla town and his main concern now is how to raise the money to pay off a loan he borrowed to invest in a tomato crop that ended in failure owing to the poor market prices.

"The yield was excellent but that was the only good thing that came out of my efforts because the price offered for it was far below expectations and now I am in debt to a local mudalali who is already breathing down my neck for the money," Mr. Nandasena said.



"After dumping something like Rs. 25,000 the crop was able to fetch only Rs. 5,000 for 800 kilograms of tomatoes. Each kilogram fetched just Rs. 5. The price continues to remain the same even today, so I have decided to let the remaining crop rot out in the field.

"It is counterproductive to even think of sending the produce to the Dambulla market, because of the high costs of transport and packaging. A wooden box that holds 20 kilograms of tomatoes costs Rs. 50 while transport for 17 boxes in an auto rickshaw is another Rs 425. So at the end of the day it is a futile exercise," Mr. Nandasena said.

T.G. Nandasena: No money to pay off loan

Other News Articles

- ▶ New Year bolt: Food prices soar
- ▶ Mervyn behind school admission row
- ▶ Rupee tumbles ahead of mega IMF deal
- ▶ Compulsory buffer stocks as 'food security'
- ▶ Govt. MP evades arrest in abduction case
- ▶ Suicide crisis at Eastern University
- ▶ Farmers strike veggie mafia - The Sunday Times INSIGHT
- ▶ Bank closes 26 branches; depositors lose millions
- ▶ Sirasa man out of hospital
- ▶ Bus crashes into tree, killing one
- ▶ Traffic cops sprout in Jaffna
- ▶ Kohona knocks out Kuwait DPL company
- ▶ Indian oil to seep to Jaffna?
- ▶ No show
- ▶ No house deed yet to call his own
- ▶ Newspaper owner vows to resume publishing when he gets out of hospital
- ▶ Kotelawala should be in jail, not in hospital - CJ
- ▶ Hillary calls for media freedom in SL
- ▶ Another Ceylinco entity under scrutiny
- ▶ Tigers caught in a noose
- ▶ STF beefs up security in Ampara villages
- ▶ No kiss-and-tell for 'Junggie' after retirement
- ▶ Protests mount over Colombo garbage going to Peliyagoda
- ▶ Demerit point system with driving licences
- ▶ Sinhala Buddhist philosophy can solve today's problems
- ▶ 'JVP should be credited for the war victories'
- ▶ PCs won't solve ethnic conflict
- ▶ Finishing touches



Like several other farmers Karunaratne also wonders why the state cannot step in with a programme where their produce could be purchased at reasonable prices. "All these politicians boast of a country with a rich agricultural history, but at the same time they cannot even bail out small farmers like me. "We are a proud and hard working people asking nothing for free. The State must work out a mechanism so that our interests could be looked into at times such as this. After all they call us the kings of the land but in reality we are more like beggars," he lamented.

He added that not only tomatoes but other produce such as pumpkin, brinjals, snake gourd, wetakolu etc., were all fetching a price below Rs. 10 with only green chillies and corn fetching some reasonable rates.



Gone to the cows: This picture taken last morning shows a mound of brinjals being thrown away by disheartened farmers.

"The vegetable growers were further hit because they are not entitled to the fertilizer subsidy which is only available for paddy cultivators. As a result we pay around Rs. 130 for a kilogram of fertilizer," Mr. Karunaratne lamented.

"What is the difference between the paddy cultivator and vegetable growers. At the end of the day we are all farmers making equal contribution towards the food line. So why is this double standard?" he asked.





With despair written all over his face, this farmer throws away a bucketful of tomatoes

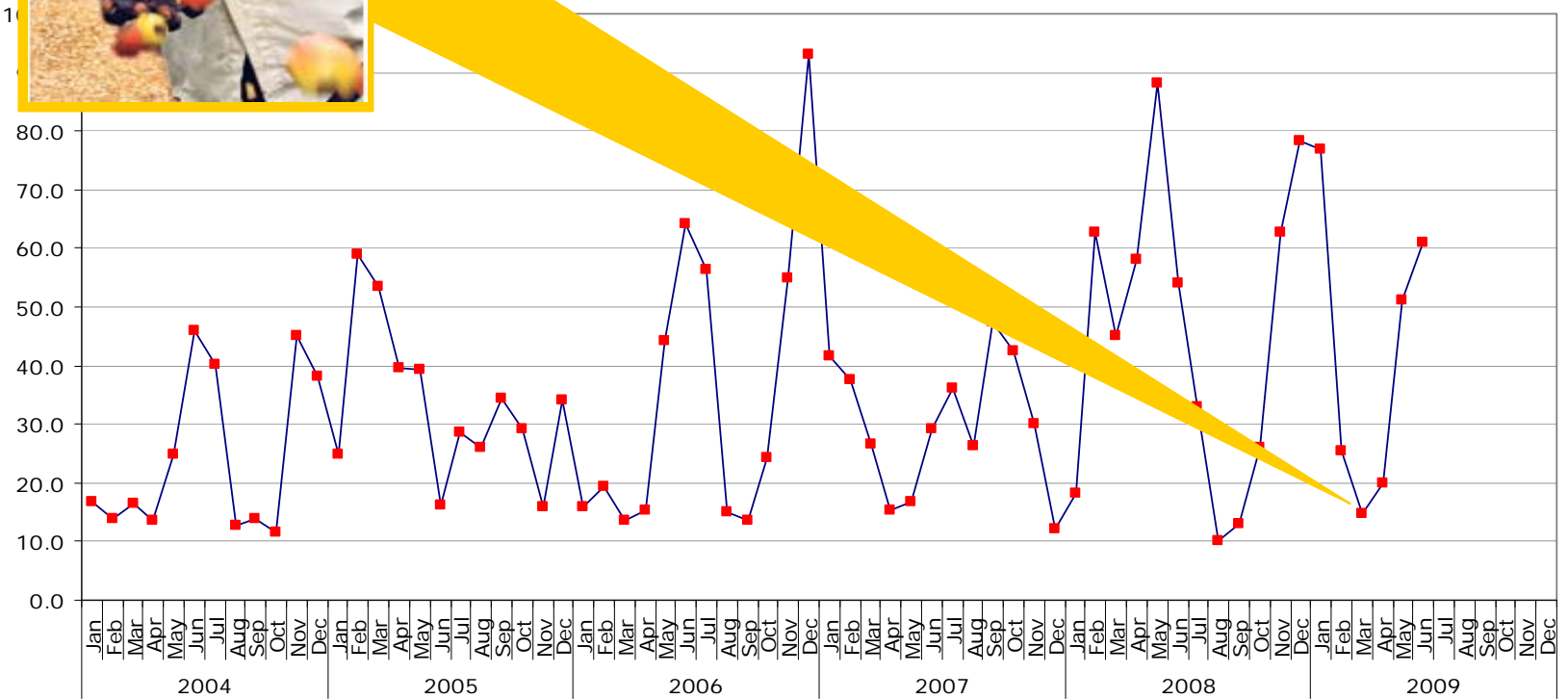
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Prices at DDEC

– June 2009



Tomato Prices at DDEC
Monthly LKR/Kg 2004 Jan to Jun 2009 [Courtesy GGS]



Another way to look at the
problem

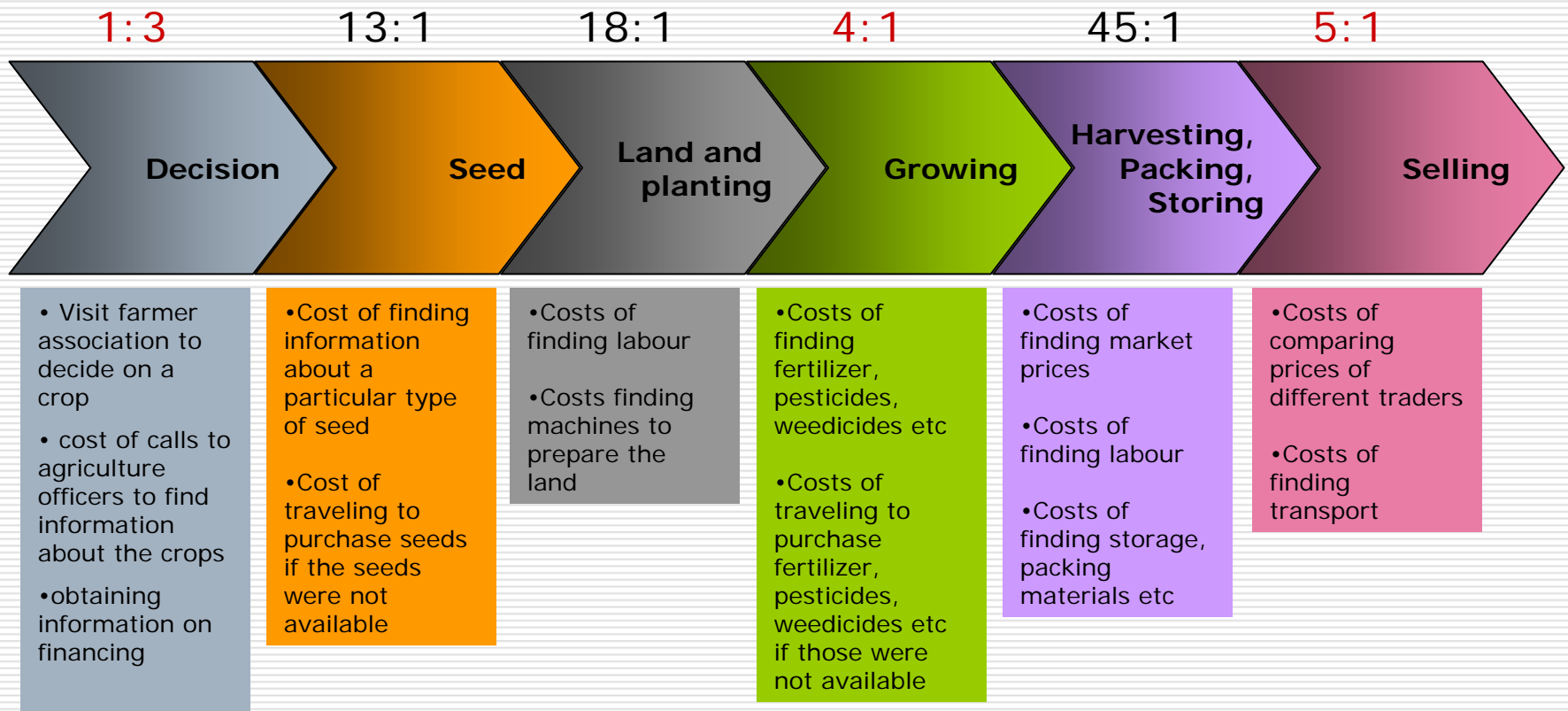
A value-chain approach*

- ICT not being leveraged properly
 - Information not sufficient?
 - Information not relevant?
 - Information not available?
- Starting point is to understand the **demand for information**
 - By disaggregating the farmer activity in to a series of sub-activities → 'Limited' Value Chain



Demand for information [small scale vegetable farmers around DDEC]

market driven; not centrally planned



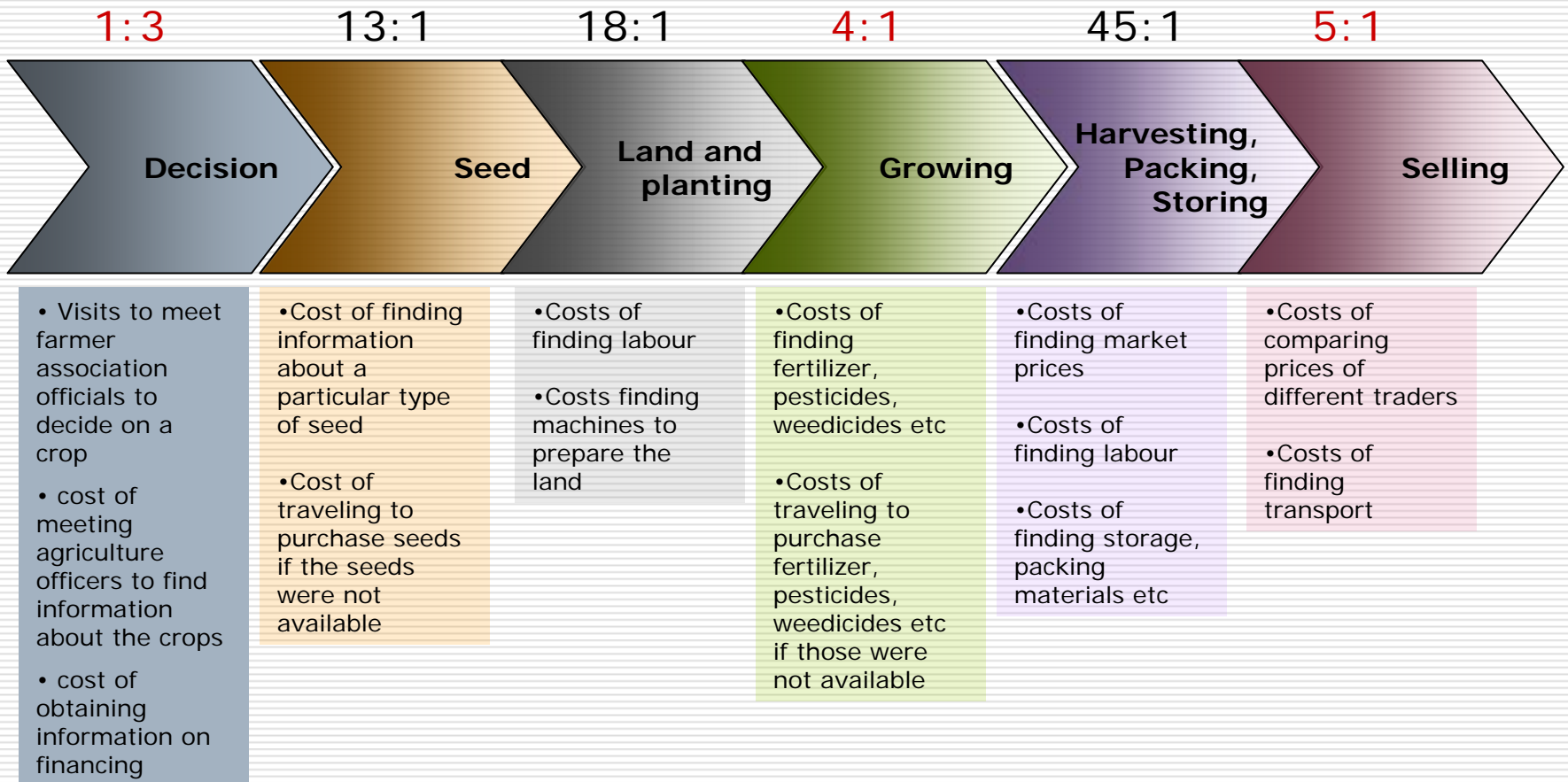
De Silva, H., and Ratnadiwakara, D. (2008).

Using ICT to Reduce Transaction Costs in Agriculture through Better Communication, Working Paper, LIRNEasia



Decision

5% cost of production; **75%** relative information cost



Decision 2*



GGs pilot objectives

If produce already brought to DDEC market
→ Help farmer get best possible price

If produce harvested, but not brought to DDEC
→ Help farmer decide whether to bring to DDEC or not

If produce just about to be harvested
→ Help farmer decide whether to harvest today or tomorrow or day after

If not planted, or many days to harvest
→ Help farmer enter into FSC

Source: Central Bank of Sri Lanka Forward Sales Contract Brochure



Decision 3

Attempted in 2003-04

View Info. - Microsoft Internet Explorer

සිරිසේන - දේශීය >> [Dropdown]

22 July 2004 22 August 2004

ගැනුම්කරු

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| ☞ පී පී සේ කො-දේශීය | 200.0 | 35.0 | 2004-08-15 |
| ☞ පී පී සේ කො-දේශීය | 50.0 | 40.0 | 2004-08-15 |
| ☞ පී පී සේ කො-දේශීය | 50.0 | 35.0 | 2004-08-16 |
| ☞ පීපීසේනා ආයෝජනය | 80.0 | 38.0 | 2004-08-16 |
| ☞ පීපීසේනා ආයෝජනය | 100.0 | 36.0 | 2004-08-16 |
| ☞ පී පී සේ කො-දේශීය | 100.0 | 35.0 | 2004-08-15 |

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| පී පී සේ කො-දේශීය | 50.0 | 35.0 | 2004-08-16 |

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නම : T.M Kapila
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22 July 2004 22 July 2004

විකුණුම්කරු

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|--------------------|----------|----------------------|------------------|
| | 0.0 | 0.0 | null |

විස්තරය

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Crop Availability Within Farmers

Crop Availability Within Farmers

Farmer Database

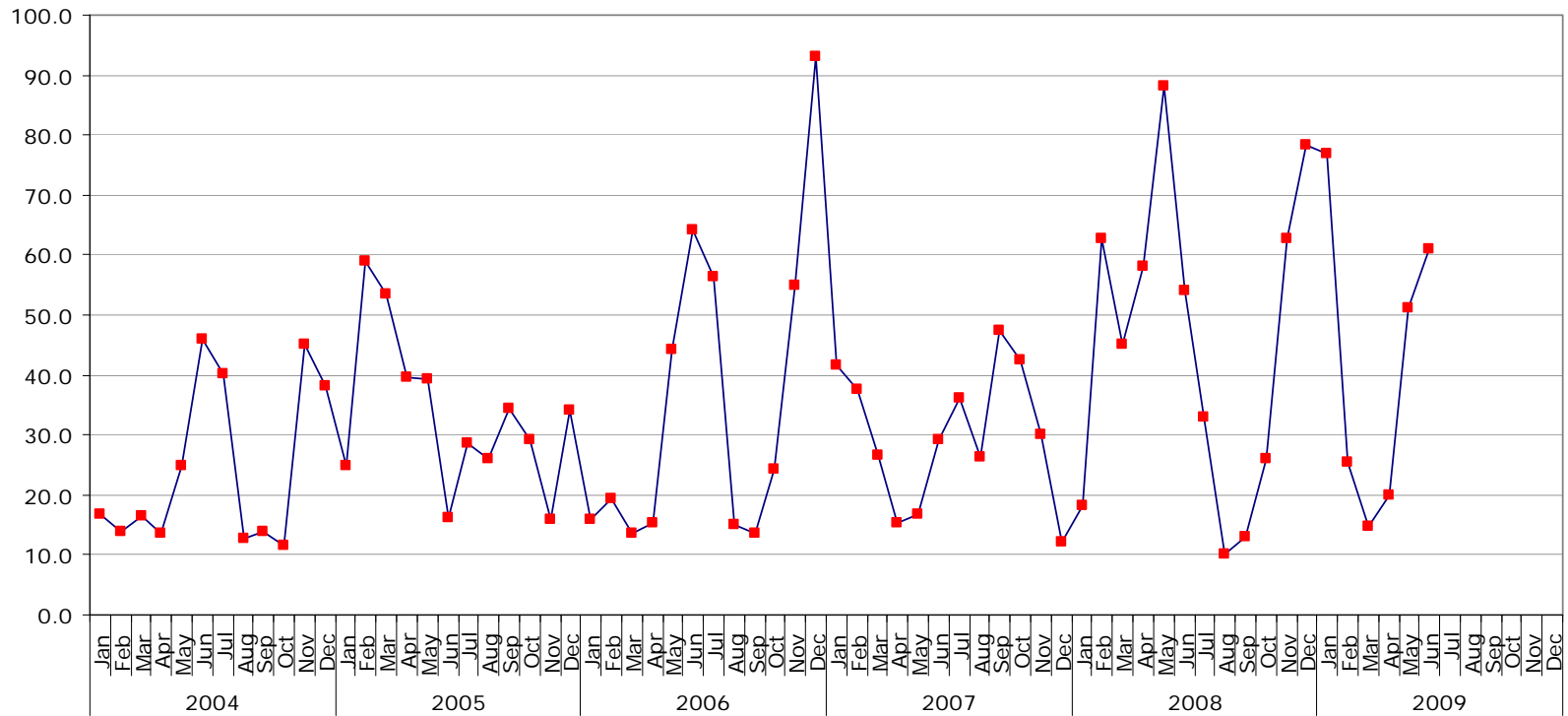
Banana

| Farmer Name | Address | ARPA (Contact person) | Tpno | Quantity (kg) | Expected Harvesting Date |
|-------------|-------------------|--------------------------|------------|------------------|-----------------------------|
| Ranjith | No. 28, Aluthwewa | AA Theertha Wimalaratne | 0814921822 | 3000 | 02-10-2009 |

Only 5 had any information: Banana 1;
Guava 1; Paddy 2; Papaw 1; Tomato 17
43 had no entries

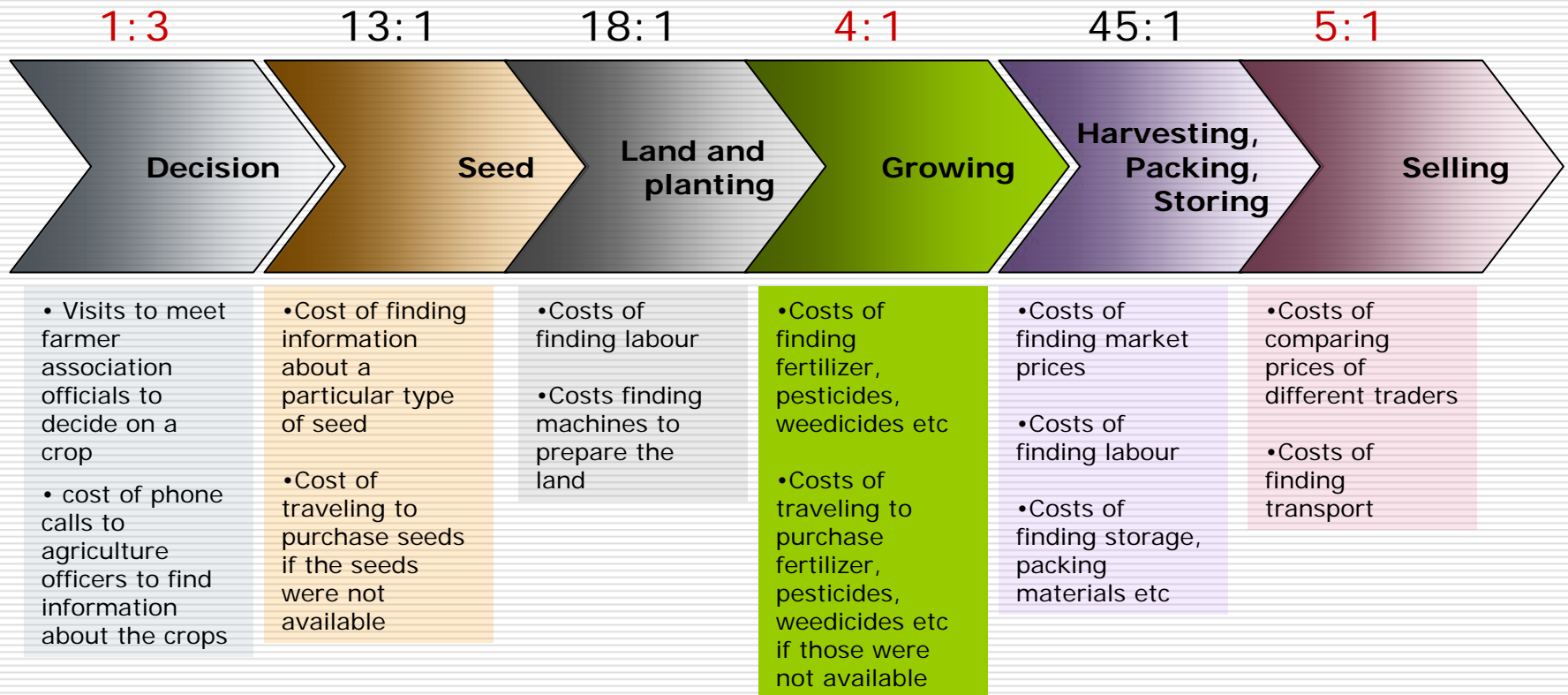
But...

Tomato Prices at DDEC
Average Monthly LKR/Kg 2004 Jan to Jun 2009 [Courtesy GGS]



Growing

45% cost of production; 20% relative information cost



Growing 2*

- Main cost is on information search on (ineligible) fertilizer subsidy

THE SUNDAY
TIMES

Sunday April 05, 2009

HOME

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Gone to the cows: This picture taken last morning shows a mound of brinjals being thrown away by disheartened farmers.

"The vegetable growers were further hit because they are not entitled to the fertilizer subsidy which is only available for paddy cultivators. As a result we pay around Rs. 130 for a kilogram of fertilizer," Mr. Karunaratne lamented.

"What is the difference between the paddy cultivator and vegetable growers. At the end of the day we are all farmers making equal contribution towards the food line. So why is this double standard?" he asked.



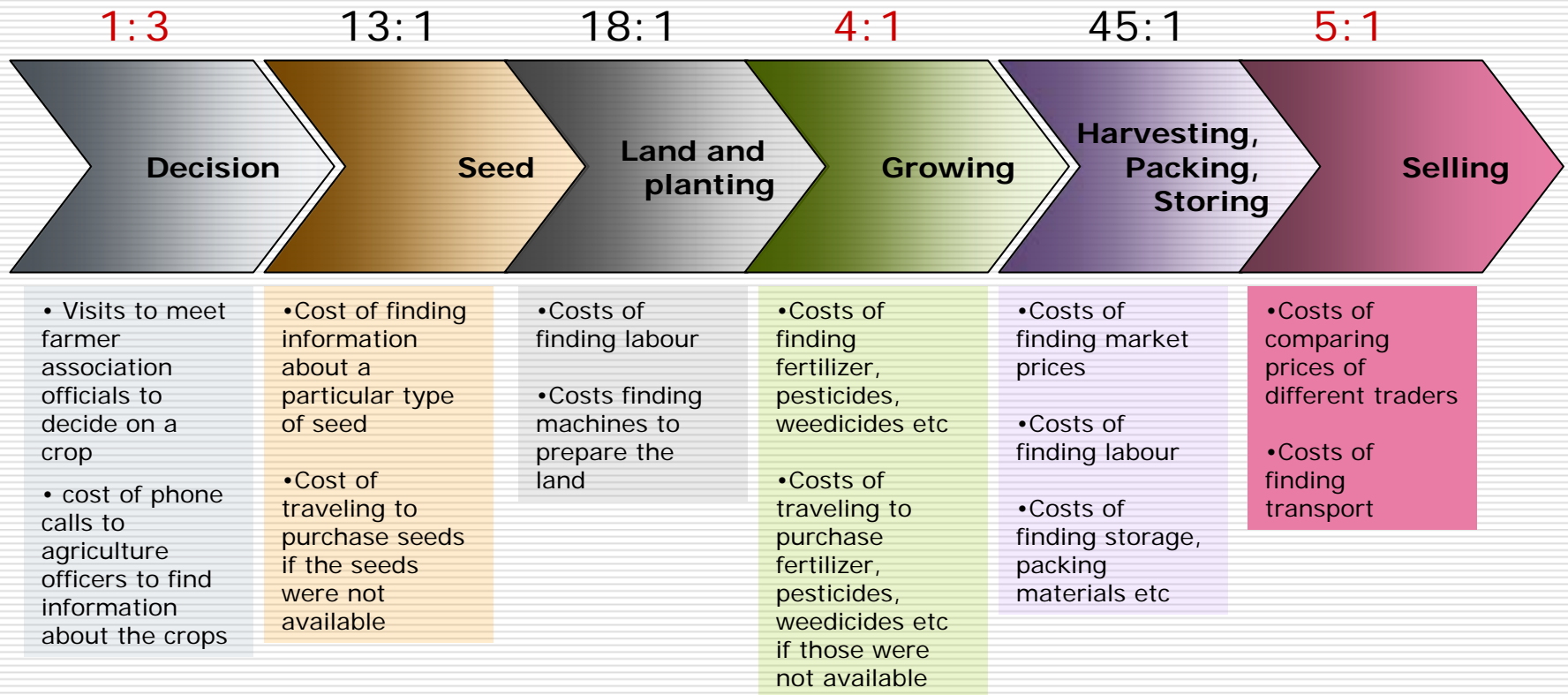
Growing 3*

- Department of Agriculture Audio Visual Centre
 - 30 Interactive Multimedia CD-ROMs (also helpful in other stages of the VC)
 - Toll-free (3 min) 1920 Govi Sarana
 - Demand-driven agriculture extension



Selling

8% cost of production; **17%** relative information cost



Selling 2

If at market price boards, word of mouth

If not a

■ Telep

GG



GGS pilot objectives

If produce already brought to DDEC market

→ Help farmer get best possible price

If produce harvested, but not brought to DDEC

→ Help farmer decide whether to bring to DDEC or not

If produce just about to be harvested

→ Help farmer decide whether to harvest today or tomorrow or day after

If not planted, or many days to harvest

→ Help farmer enter into FSC



Selling 3

Farmers and spot prices



Selling 4

Expe



Where from here?

Vision for Agriculture in Sri Lanka

Mahinda Chintana

- The 10 year policy framework
 - To transform subsistence agriculture to a commercially oriented and highly productive sector
 - Improve competitiveness
 - Increase exports



Role of ICT in agriculture*

sufficient and relevant information

- Reduce information search costs → increase efficiencies in agricultural markets
 - Move from subsistence to commercial agriculture
 - Household demand → market demand
- Integrated systems that address individual information needs from Decision to Selling
 - **Closing the loop**: Decision ↔ Selling
 - Forward sales contracts (FSC)



A start was made...

GGs pilot objectives

If produce already brought to DDEC market

→ **Help farmer get best possible price**

If produce harvested, but not brought to DDEC

→ **Help farmer decide whether to bring to DDEC or not**

If produce just about to be harvested

→ **Help farmer decide whether to harvest today or tomorrow or day after**

If not planted, or many days to harvest

→ **Help farmer enter into FSC**



But ICT policy makers could not understand the solution!

did **not** support the GGS initiative



The summary of the findings of the evaluation are as follows (Ernst & Young; Outcome Evaluation of Pilot Projects):

| Pilot project | Implementing partner | Outcome | Impact on target audience |
|-----------------------------------|---|----------------|---------------------------|
| e-Money order | University of Colombo | Unsatisfactory | Modest |
| Empowering the workplace | Informatics Information (Pvt) Ltd | Satisfactory | Substantial |
| GGS | e-Development Labs / Interblocks | Satisfactory | Substantial |
| National Operations Room | Pricewaterhouse Coopers | Satisfactory | Substantial |
| SME Portal | National Chamber of Commerce of Sri Lanka | Unsatisfactory | Negligible |
| Vishwa Gnana Kendra (three units) | Three different institutes | Satisfactory | Modest |



Role of ICT in agriculture 2**

accessible (and affordable) information

- Internet PC vs. mobile phone focus
- LIRNEasia 6-country study T@BOP3; Sri Lanka, September-October 2008
 - 77% used a phone in the 'previous week'
 - 73% had access to a phone in the home
 - Up from 41% in September 2006
 - 53% used sms regularly
 - But, **only 3% had access to the internet**
- Where is the ICTA focus?



Future of ICT for agriculture will be mobile-centric

- PC as central interface was old paradigm
- New paradigm will have mobile or emerging 3G enabled devices
- Agriculture information on ubiquitous mobile devices
 - When and where user wants it at very low cost of use; no opening and closing hours



And that future will be here soon

GGG dialog partnership



Dialog eZmart

HOME PROFILE SIGN OUT

Welcome randinee

சென்னை தமிழ் ENGLISH

Home
Inquire
Buy
Sell
My Trades

Price Search

Through this page you can search for prices of products and services which are currently available on the catalogue

Beans, Flat

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|-------------------|------------------|--------------------|--------------|-------------------|-------------------|---------------------|
| GGG | Dambulla | Daily | 64.00 | 69.00 | 61.00 | 14/07/2009 14:48:36 |
| ggnemprathas | Maduraiya Weekly | | 90.00 | 90.00 | 90.00 | 11/06/2009 04:11:02 |

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SPOT & FORWARD MARKET PRICES

Together with Govi Gnana Seva (GGG),
Dialog eZmart will provide market prices
Mobile users can receive market prices through SMS



No need of special ICT policy for agriculture

- Better to have no policy than to have a bad policy
 - No need to 'rush in' to formulate an ICT for agriculture policy
- 'Computerizing' a failed supply-driven agriculture extension is not the answer
 - DOA through its AVC is making very steady progress in transforming extension in to a demand-driven program



End ICT objective

a joint **private-public-academic** partnership

- Use mobile-centric, demand-driven, value-chain based, accurate and timely information to
 - lower transaction costs
 - Which will increase efficiencies in agricultural markets
- So that farmers will move from subsistence to commercial agriculture, that will
- Increase welfare both for farmers and consumers



ICT Policy for Agriculture in LK an **economics** perspective

end

thank you

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