

ICT for GAP

an economic development perspective



Harsha de Silva

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ICT in economic development*

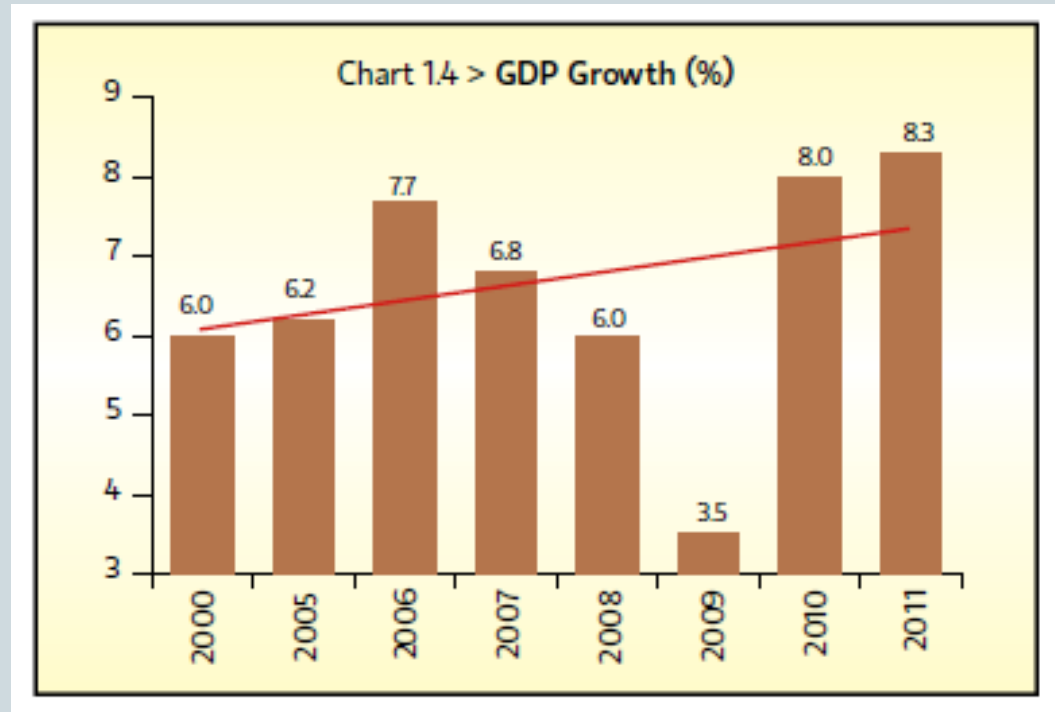
2

- **Growth**
 - Within **'Good Governance'**
 - Real GDP
 - Short run cycles → Long run trend
- **Equitable distribution of dividends of growth**
 - **All and Peace**
 - Also, taxes and subsidies

Growth; Sri Lanka Perspective

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- GDP: short run cycle → long run trend
 - Agriculture, industry, services
 - Investments
 - Net-Exports



Ministry of Finance Annual Report, 2011

Equitable distribution; Sri Lanka Perspective

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- Poverty and income inequality
 - HCR
 - Gini coefficient

Trends in Poverty Indicators

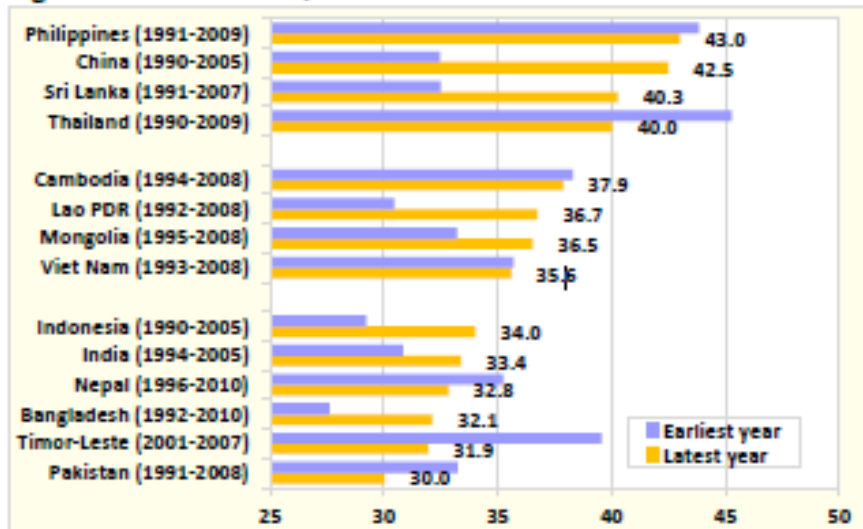
Province	Poverty HCR(%)		Gini Coefficient	
	2006/07	2009/10	2006/07	2009/10
National	15.2	8.9	0.40	0.36
Western	8.2	4.2	0.41	0.38
Central	22.3	9.7	0.38	0.35
Southern	13.8	9.8	0.37	0.33
Northern	NA	12.8	NA	0.28
Eastern	10.8	14.8	0.33	0.30
North Western	14.6	11.3	0.36	0.34
North Central	14.2	5.7	0.40	0.33
Uva	27.0	13.7	0.35	0.32
Sabaragamuwa	24.2	10.6	0.34	0.32

Equitable distribution; Sri Lanka Perspective

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- Poverty and income inequality
 - HCR
 - Gini coefficient

Figure 6: Gini coefficient, 1990-2010



Note: Gini coefficient between the earliest and latest years available during the period from 1990 to 2010. Higher Gini coefficient indicates higher inequality.

Source: World Bank: PovcalNet.

Theory: growth and technology*

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- **Neoclassical growth theory; Solow (N: 1987)**
 - Countries catch up and grow at a steady state due to diminishing returns to capital (new capital better than old capital)
 - No growth beyond SS unless;
 - ✦ **exogenous → technological progress**
- **Endogenous growth theory; Romer, Lucas (N 1995)**
 - Countries can continue to grow because of increasing returns to human capital by **endogenising technology**; never reaching a steady state
 - Depends on type of capital countries invest in
 - ✦ education and innovation (research and development)

Role of ICT in growth

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- **Technological progress**

- Whether exogenous or endogenous ICT is a key driver in technological progress in the 21st century
 - ✦ ICT → smarter technology → efficient machines
 - Mobility: mobile phone is ubiquitous. Mobile broadband
 - T@BOP studies at LIRNEasia
 - Video: 60% of all Internet traffic is video → 80%-90% soon
 - Cloud: reducing cost of operation
 - ✦ ICT → smarter workforce → efficient people; endowed with greater human capital

- **Centerpiece**

- “Transformative economic catalyst”
- “Platform for development”

Supported by macroeconomic data*

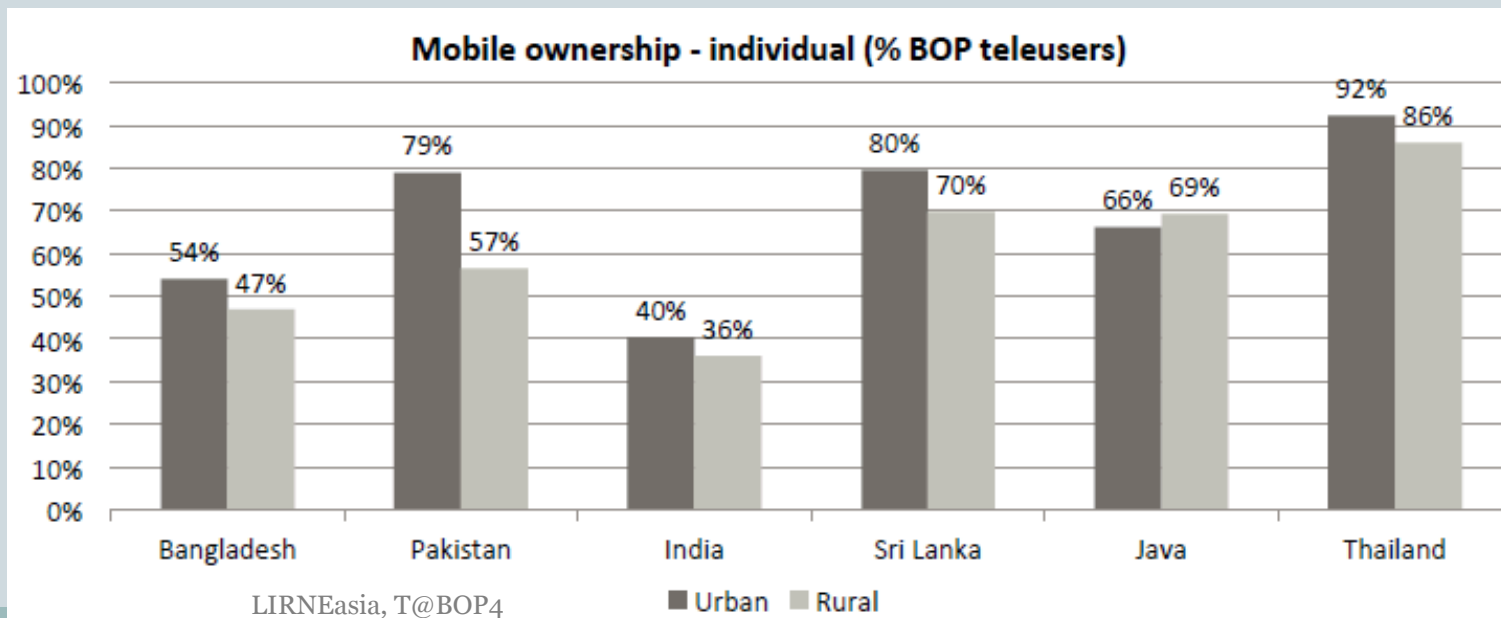
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- ICT penetration → high growth
 - “Every 10 **mobile phones** added per 100 population, GDP growth rate can be boosted by 0.6 per annum”
 - ✦ Fuss, Meschi and Waverman (2005)
 - “When **Internet** penetration increases by 10 percent in emerging economies it correlates with an incremental GDP increase of 1 to 2 percent”
 - ✦ BCG and Telenor (2009)
- How much hype?
 - No silver bullet, but certainly important component to create ‘smart machines’ and ‘smart workforce’

Adoption of ICTs

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- Phones everywhere
 - Almost universal access: 19m mobile phones (3.6m fixed lines)
 - At the BOP significant ownership (LIRNEasia, 2010)
 - ✦ “Social Influence in mobile phone adoption: Evidence from the BOP”, ITID (2011)



Adoption of ICTs

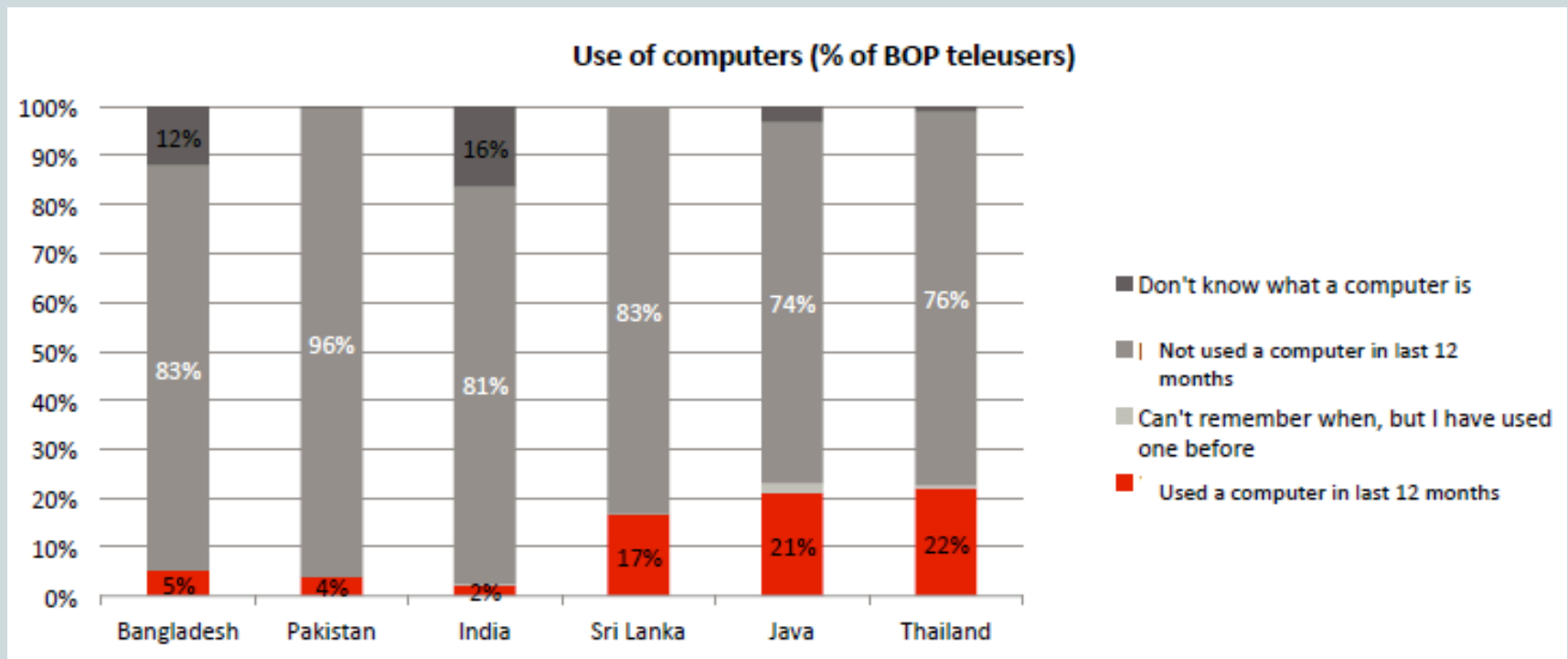
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- **At the BOP in Sri Lanka**
 - Make and receive calls, 100%
 - 'Missed calls', 65%
 - SMS, 55%
 - Listen to radio, 17%; take photos, 14%; play games, 11%

Adoption of ICT 2

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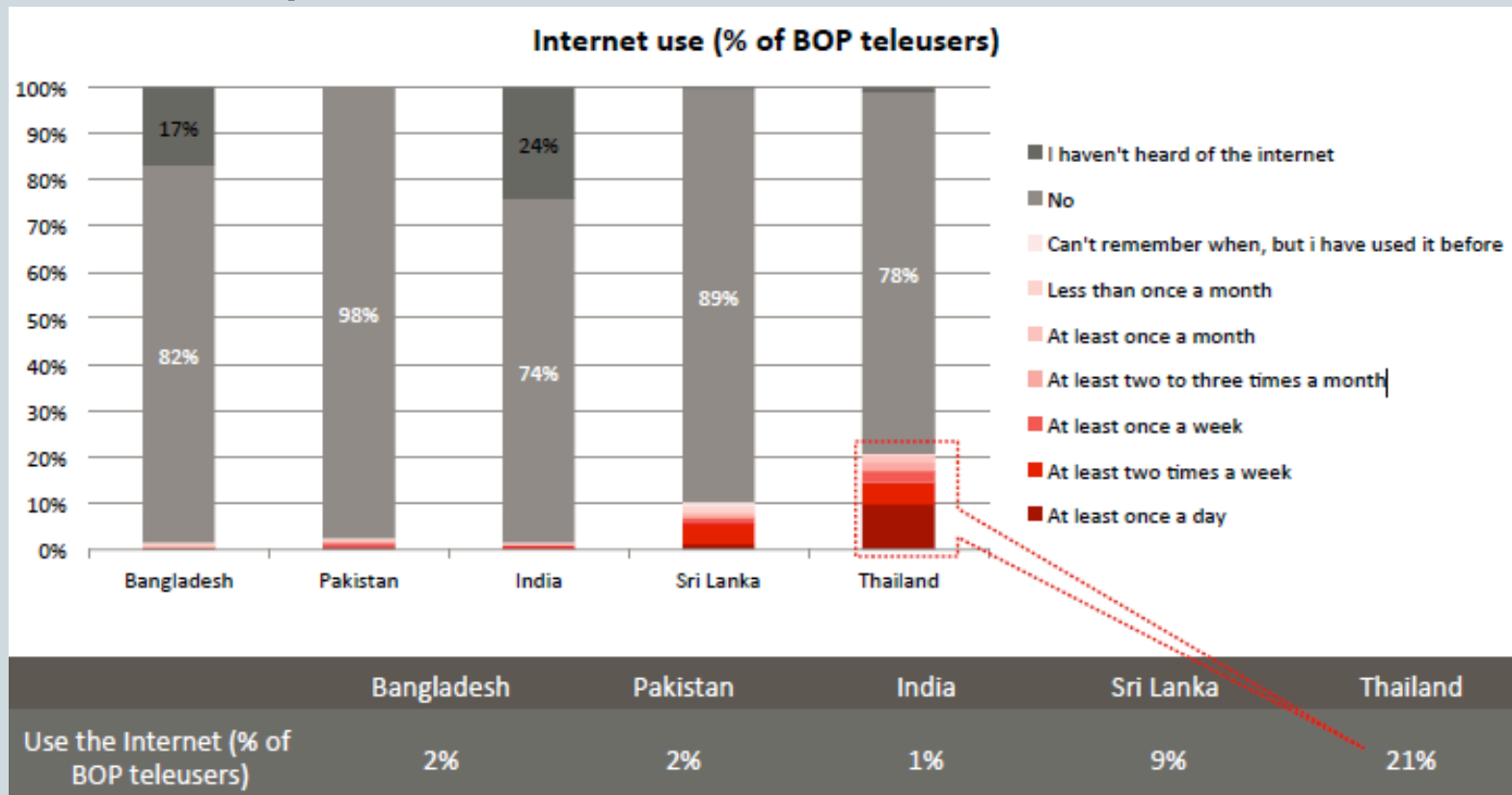
- Computer and Internet use very low; Lirneasia T@BOP4



Adoption of ICT 2

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- Computer and Internet use very low; Lirneasia T@BOP4



Micro data is more realistic

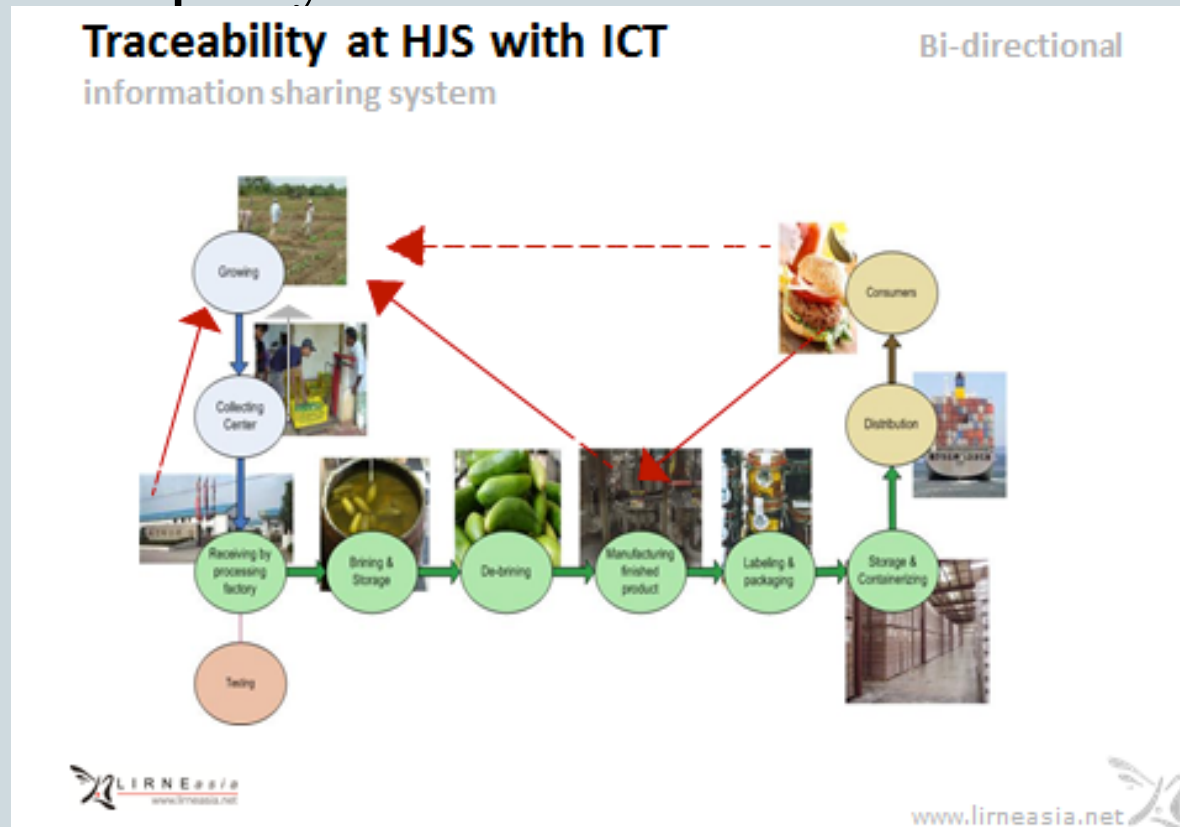
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- The story of the HJS Condiments gherkin farmer and McDonalds query
 - Traceability Report in 45min
 - ✦ Old → one-way paper trail; no benefit to farmer, cost to HJS
 - ✦ New → two-way mobile phone trail; major benefit to farmer, no longer cost to HJS
 - Smarter farmer
 - ✦ Less wastage, better income → improved growth

Micro data is more realistic

14

- The story of the HJS Condiments gherkin farmer and McDonalds query



And has stories you can 'feel' development

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- The story of Mr HMMD Disanayake Banda from Dambulla
 - <http://www.youtube.com/watch?v=JAsvP2avdc8>

Dialog Tradenet-GGS the big screen version; has its own positives, and also negatives

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SimpleTap

http://tradenet.dialog.lk/search_results.aspx?itemid=34&type=0

Inbox (24,772) - hars... endogenous growth ... treasury.gov.lk adoption mobile pho... Knowledge-based Ec... lirneasia.net Livelihood benefits f... dialog tradenet - Go... Welcome to Dialo...

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Sri Lanka's Award Winning Tri - Lingual Trading Portal

Refine Agriculture Search

Dambulla (112)
Meegoda (53)
Narahenpita (33)

Refine Search

Vegetables, Fruits & Live Stock (1)
Mushroom-Local (Mushroom) (1)

All Items

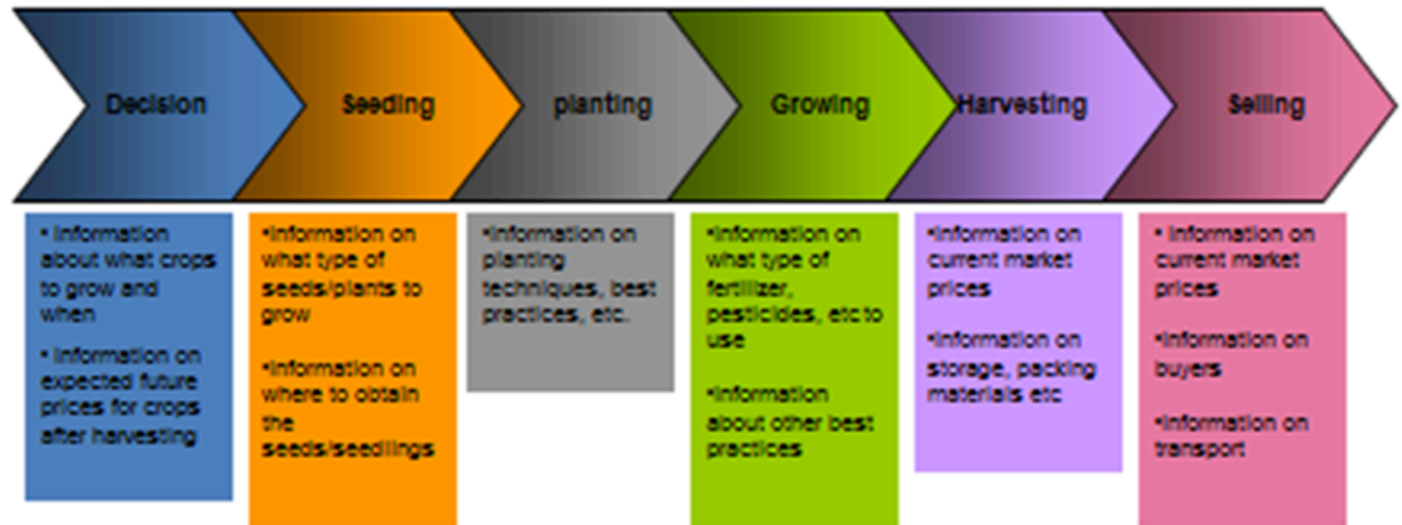
Agriculture Prices In association with Govi Gnana Seva (GGS)

Item	Content provider	Location	Update frequency	Last traded price	Max price for the day	Min price for the day	Last updated
Cut beet - Nuwara Eliya	Dambulla	Dambulla	Hourly	80.00	80.00	80.00	09/07/2012 16:00
Bitter Gourd - Katu Thinnaweli	Dambulla	Dambulla	Hourly	80.00	90.00	80.00	09/07/2012 15:39
Long Luffa - Local	Dambulla	Dambulla	Hourly	80.00	80.00	80.00	20/06/2012 21:37
Lettuce	Dambulla	Dambulla	Hourly	80.00	80.00	80.00	09/07/2012 16:01
Carrot - Ragala	Dambulla	Dambulla	Hourly	85.00	85.00	85.00	30/06/2012 15:29
Potato - Nuwara Eliya	Dambulla	Dambulla	Hourly	90.00	90.00	90.00	09/07/2012 16:01
Cauliflower	Dambulla	Dambulla	Hourly	90.00	90.00	80.00	09/07/2012 19:43
Wing Beans - Long red	Dambulla	Dambulla	Hourly	90.00	90.00	90.00	23/06/2012 18:15
Carrot -	Dambulla	Dambulla	Hourly	90.00	90.00	90.00	09/07/2012

IC Technology can make the farmer smarter

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- Bridging the information asymmetry along the crop cycle to reduce volatility in vegetable prices



De Silva & Ratnadiwakara (2008) found that a 300 sample of farmers in Sri Lanka spent as much as 11% of their total production cost on information search

IC Technology can make the farmer smarter

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- Bridging the information asymmetry along the crop cycle to reduce volatility in vegetable prices



Destination garbage bins: Excess vegetables being thrown away at the Narahenpita Economic Centre. Sunday Times March 11, 2012

Governance; the act of governing

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- Need not only smart technology and smart workforce but also smart government
 - Role of GOSL agencies involved in agriculture
 - ✦ Policy issues
 - ✦ ICT enabled agriculture information
 - Beyond 1920; what else?
 - ✦ Fertilizer distribution schedules?
 - ✦ Water release plans?
 - ✦ Paddy purchase schedules?

Governance; the act of governing

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අමතන්න
1920

- ඕනෑම දුරකතනයකින්
- ඕනෑම ප්‍රදේශයක සිට
- කාර්යාලයේ වේලාවන් තුළදී

ගොවි සහන සරණ
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 කෘෂිකර්ම දෙපාර්තමේන්තුව

එළවළු පලතුරු මිල ගණන් සැණෙකින්...

977 අමතන්න

විද්‍යාගාර වෙබ්සයිට් ආයතනය හෝ ආයතන වෙබ්සයිට් සහන දැක්වෙන විටම අන්තර්ජාල මධ්‍යස්ථාන වලින් වෙළඳ පොළ මිල ගණන් ජනාකීර්ණව ලබා දීම සඳහාම සේවාවක් වශයෙන් වෙබ්සයිට් සහන දැක්වෙන විටම ආරම්භ කර ඇත.

දුරකථන, ජාල සේවාව, මිගොඩ

වෙළඳ පොළ මිල ගණන් ආයතන සහන සේවාව, කෙටි පණිවුඩ (SMS) හිමිකරු සහන සේවාව වලට වෙබ් මගින් මිල ගණන් දැනගැනීම සඳහාම, මිල ගණන් වල විශේෂිත වෙනස් වීම් කෙටි පණිවුඩ හිමිකරු සහන සේවාව සිදුකරන බවට විශ්වාස දැක්වීම සඳහාම ඉහත ආයතන අමතන්න

Dialog tradenet
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Department of Agriculture
 Government of Sri Lanka

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'Govi Sahana Sarana'
 1920 Agriculture Advisory Service

skype **Call to 1920**
Agriculture Advisory Service

A call centre solution known as Agriculture Advisory Service is one of the major programmes to assist farmers in solving their various problems such as agriculture related technical matters, inputs and marketing problems.

As per the suggestion made by the former Minister of Agricultural Development, Hon. Mr. Chamal Rajapaksha, this service was established at the Audio Visual Centre of the Department of Agriculture, Peradeniya on 23rd

Equitable distribution of dividends of growth*

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- ICT in agriculture → smallholder farmers
- Recent work on what we have coined ‘Smallholder Quality Penalty’
 - Mango farmers in India: “Whether or not we follow good post harvest methods like de-sapping, washing and drying they manipulate grades and deduct for wastage”.
 - Jute farmers in Bangladesh: “They take 2- 4kg from 40kg bundle to makeup for possible loss in selling down the chain...”.
 - Rubber smallholders in Sri Lanka: “Even though we have produced RSS 3 grade sheets, they categorize as RSS 5”.
- Use ICT solutions to communicate ‘quality’ downstream
 - Adherence to standards and build trust

ICT for bridging the GAP in economic development **

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- Development → Growth and equitable distribution of the dividends of growth
- Growth via **good governance**
 - ICT for smart technology
 - ICT for smart workforce
 - ICT for smart government
- Equitable distribution for **all**
 - Use ICT to target groups that need support; provide information and adjust taxes and subsidies
- To ensure sustainable **peace**

Harsha de Silva
Member of Parliament
The Parliament, Sri Jayawardenepura, Sri Lanka
Harsha.lirne@gmail.com
www.harshadesilva.lk (soon)