

SDGs: What role for ICTs

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SUSTAINABLE DEVELOPMENT GOALS



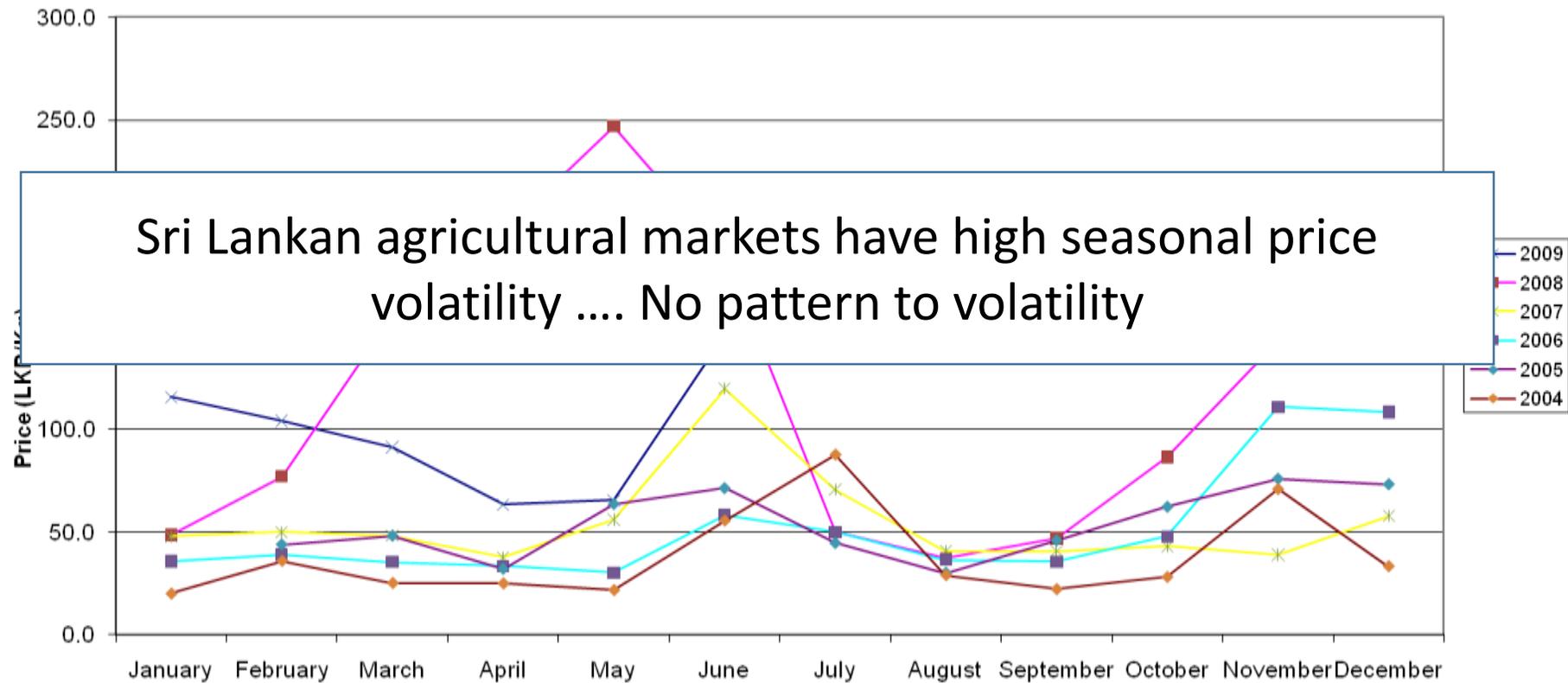
Sri Lanka priorities

- The President of Sri Lanka has prioritized six goals:
 - SDG 1 (no poverty)
 - SDG 2 (food security)
 - SDG 7 (energy)
 - SDG 4 (education)
 - SDG 10 (reducing income disparity) and
 - SDG 11 (infrastructure and industry).
- Of these, particular attention will be placed on SDG 1, with the Sri Lankan government declaring 2017 as the year of alleviating poverty.
- The government has also stated their goals of higher levels of benchmarking than the SDG requirement for some targets (for example, \$1.25 for poverty eradication) in order to achieve national objectives for wellbeing.

Example: SDG 2 Food security

- Irrigation release is 50% of normal because of drought
- What to do with 50% of uncultivated land?
- Farmers hesitant to grow crops other than paddy; government trying to encourage
- Why are farmers not keen to grow crops that yield higher profits?

Price determined by interaction of supply and demand



Average monthly price for Cabbage at the DDEC (Jan 2004-June 2009)

Two approaches, both reliant on ICTs

Central planning

- Collect information on what crops farmers plan to grow
- Estimate yields
- Estimate demand at time of harvest
- Prevent farmers from growing more than needed quantity

Market

- Make market-price information widely available
- Encourage growth of forward markets
- Also encourage futures markets to help balance out forward markets

Why both approaches do not work

Central planning

- Farmers have no incentive to give accurate information on what crops they intend to grow
- Government estimate of yields and demand at time of harvest likely to be flawed
- Unlikely government can prevent farmers from growing what they want

Market

- Market price information is available
 - 200,000 farmers obtaining market information on mobiles through Govi Mithuru
 - Other media also
- Forward and futures markets have not emerged
- Is it because contracts cannot be enforced?

Other major role for ICTs

- 17 SDGs → 169 targets
- The targets will be measured/monitored by 241 proposed indicators; more to come
- Some data not available at required level of detail/frequency
- Some data not available

- The answer Big Data

Example: SDG 1 No poverty

- Engstrom, Hersh and Newhouse (2016) conducted a World Bank funded study in Sri Lanka using very high-resolution satellite images (VHRSI) to estimate variation in poverty across small local areas
- They analyzed features such as density of paved and unpaved roads, building density, roof types, farmland types as shadow pixels (as a proxy for building height) as well as numerous spectral and texture features among others
- The study covered 1,250 of the 13,000 Grama Niladhari divisions – the average size of division was ~ 2.15 sq. km and contained around 10,000 persons
- Results were matched with poverty data based on the 2011 census and the researchers found that around 40%-70% of small area poverty variations could be explained using features derived from VRHSI