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Collecting producer prices at point of sale: rationale, challenges and proposed solutions. The Uganda Experience

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Collecting producer prices at point of sale: rationale, challenges and proposed solutions. The Uganda Experience

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DEFINING THE CONTEXT AND ROLE OF AGRICULTURE: UGANDA

Agriculture value-added accounted for 26.0 % of GDP in 2008/9 , 23.1 % in 2013/14 and 22.6% in 2014/15 (current prices).

1. The sector is also the major employer of the rural population and employs a large share of the total population; about 72% of the working population are engaged in agriculture.
2. Decomposition of Agriculture contributions to GDP in 2014/15:
 - Food crops (11.5%)
 - Cash crops(1.7%), Fishing 1.8 percent and;
 - Food crops production was highlighted as the main driver of growth in 2014/15 (apart from manufacturing and financial services)
4. Producer Price Indexes for Agriculture (PPI-A) are a vital economic indicator to show average change in prices received by farmers for their agricultural output.



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THE UGANDA CONTEXT: UGANDA BUREAU OF STATISTICS

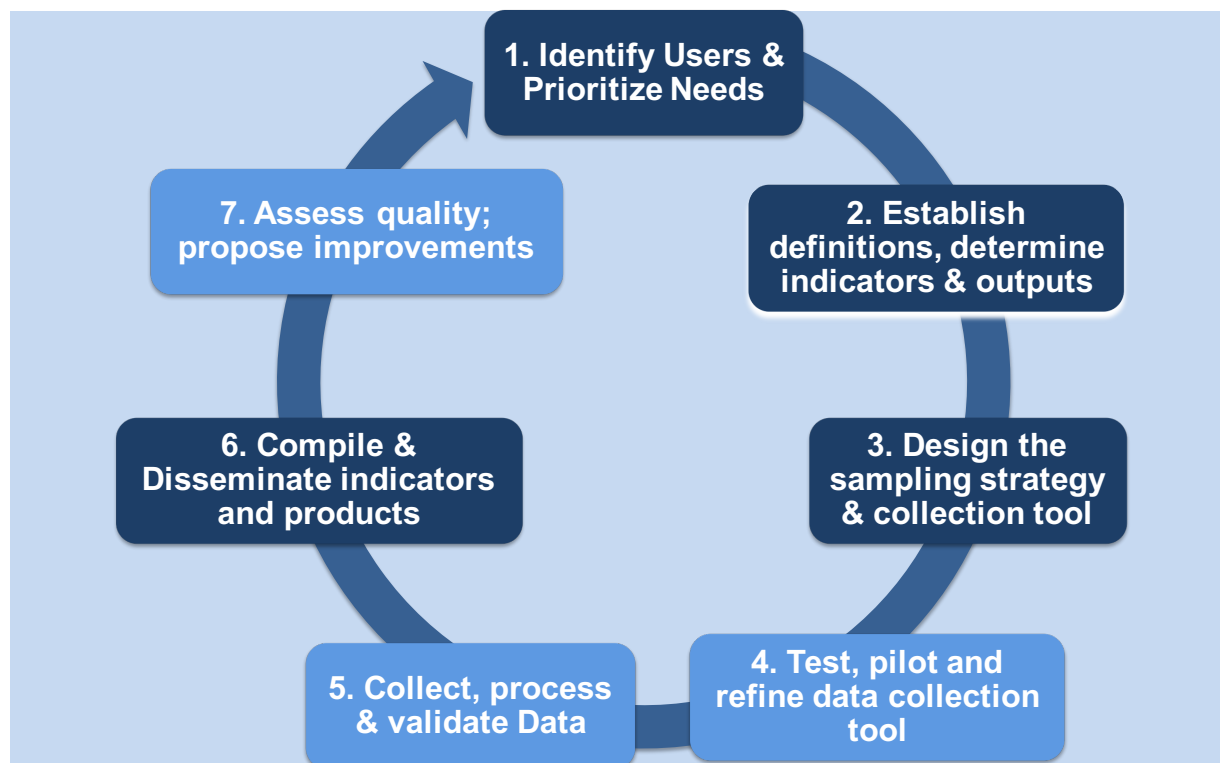
1. Uganda Bureau of Statistics (UBOS) established by *Uganda Bureau of Statistics Act, 1998*
 - Semi-autonomous body responsible for coordinating, monitoring and supervising the National Statistics System (NSS).
 - Ensures collection, analysis and dissemination of integrated, relevant, reliable and timely statistical information.
 - Responsible for the provision of official statistics to and of the Uganda government.
2. UBOS builds trust among data users and respondents through adherence to international standards, disallowing political influence, maintaining confidentiality, and sensitizing the masses on programs that involve them.
3. In addition to the CPI, existing producer price index (PPI) statistical programs include the PPI Manufacturing, and PPI Services to Hotels and Restaurants.
 - The CPI is disseminated monthly while PPI-M & PPI-H are disseminated quarterly.
 - The Producer Price Index for Agriculture (PPI-A) is under development.
4. Others collecting agriculture price data in Uganda:
 - World Food Programme (monitor food insecurity, especially in Karamoja sub-region)
 - infoTrade (market information system)



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THE STATISTICAL PROGRAM CYCLE & THE PPI-A

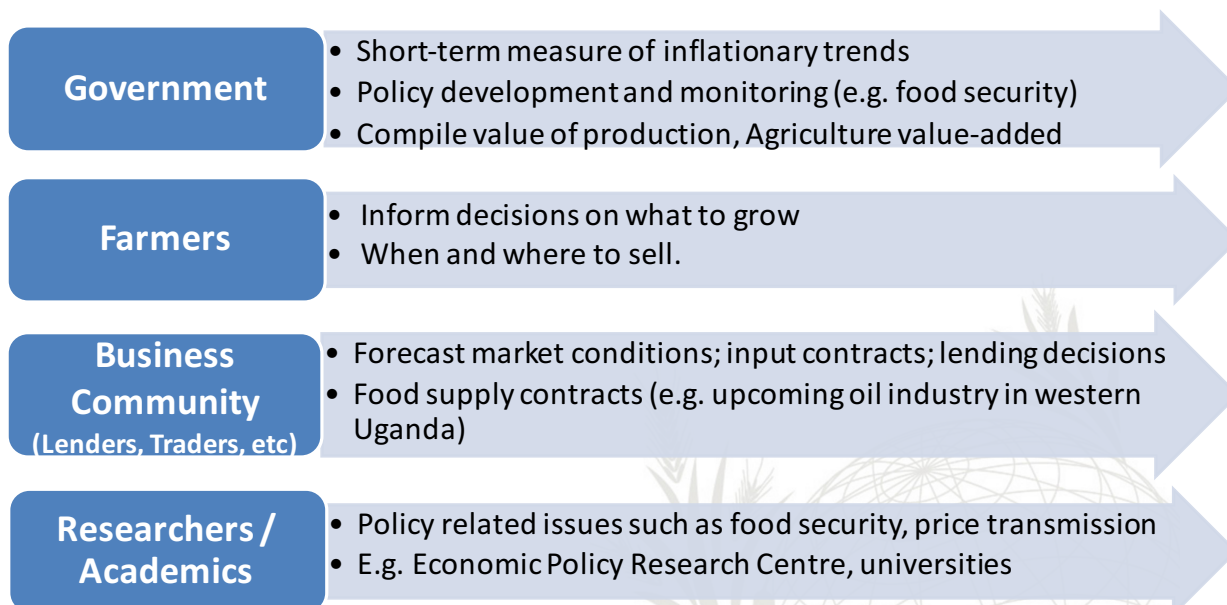


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1. IDENTIFY USERS AND PRIORITIZE NEEDS IN UGANDA



A globally comparable dataset on agriculture producer prices, absolute levels and price indexes, also enables comparisons between countries of prices, price inflation and price transmission



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1. IDENTIFY USERS AND PRIORITIZE NEEDS IN UGANDA

Prices can either be catalysts or deterrents to the food security of the country depending on the side one is looking at, from the producers' point of view or from the consumers' side. On the part of the food producers, persistent rise in prices act as motivation to produce more so as to increase the revenue thereof, while on the [part of] consumers this limits their consumption and can lead to some of them to starve.

The opposite is the case for a falling price: persistent fall in prices discourages producers to produce while this gives consumers with wide choices of commodities. This can [also] eventually lead to food insecurity. (Zakayo Msokwa, 2013).



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2. ESTABLISH DEFINITIONS, DETERMINE INDICATORS & OUTPUTS

What is an agricultural producer price (APP)?

1. It is the price received by farmers, livestock & poultry raisers for the sale of their produce at the first point of sale - *preferably a farm-gate price (FAO)*
2. It is the average price, or unit value, received by farmers in the domestic market for a specific agricultural commodity produced within a specified period. This price is measured at the farm gate — that is, at the point where the commodity leaves the farm — and therefore does not incorporate the costs of transport and processing. (*OECD Glossary of Statistical Terms*)

Considerations

- Best measured *after* a sale/transaction occurs, to get the actual price received
- Tax & subsidy treatment depends on price concept (producer versus basic prices).
- If the sale occurs *after the farm gate*, exclude the portion of price that covers post farm-gate related costs: storage, transportation, wholesale margins, market dues, etc.



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2. ESTABLISH DEFINITIONS, DETERMINE INDICATORS & OUTPUTS

What are producer prices versus basic prices?

1. A **producer price** is the amount receivable by the producer from a purchaser for a unit of a good or service produced as output, minus any VAT or similar deductible tax, usually invoiced to the purchaser. It excludes any transport charges invoiced separately by the producer, and excludes product subsidies received by the producer.
2. **Basic prices** are the amount received by the producer from a purchaser for a unit of good or service produced as output. It includes subsidies on products and other taxes on production. It excludes taxes on products, other subsidies on production, suppliers' retail and wholesale margins, and separately invoiced transport and insurance charges. Basic prices are the prices most relevant for decision making by suppliers

Considerations

- Practices vary across countries on the use of producer vs basic vs other prices
- The producer price may be simpler to collect.
- The price concept used impacts what information should be collected.



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2. ESTABLISH DEFINITIONS, DETERMINE INDICATORS & OUTPUTS

Potential key indicators and outputs:

1. National PPI-A's,
 2. PPI-A's by region and, if funding allows sufficient sample size, PPI-As for commodities
 3. Absolute price levels for commodities at national level, subject to resources
 4. PPI-A and absolute prices will be disseminated on quarterly/annual and monthly basis, respectively, through media releases and other publication
- **Indicators will be published at National and regional levels, requiring sampling at the regional level**



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3. DESIGN - SAMPLING STRATEGY & DATA COLLECTION IN UGANDA

- UBOS uses a combination of non-probability (judgmental or purposive) sampling and representative sampling based on expert knowledge to select markets within a region and items within each market - similar to the approach of most countries in CPI sampling.
- Determination of representative markets and items are obtained from expert knowledge, which is provided by commercial officers in each region.

Process:

1. The country is sub-divided 4 regions and a sub-region in North west of Uganda. For each region, UBOS samples of at least 5 producer markets, with an average of two enumerators per market.
 2. Within each selected/ sampled market
 - UBOS purposively samples/interviews at least 3 respondents per commodity who sold on the market day.
 - A visit is also made to prominent farmers of particular commodities that produce within the market area.
 - Another visit is made to wholesalers to obtain prices for major commodities that are not found in the market(maize, rice, etc).
- **This yields a sample size of 66 prices per product = (# of respondents) x (# markets) but varies according the distribution of the commodity across the country.**



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3. DESIGN THE SAMPLING STRATEGY & DATA COLLECTION TOOL

Scope and coverage

- Initial commodities cover food crop sand livestock, focusing on the 16 major national crops and 4 livestock types (Cows, goats , pigs , and chicken).
- Use the International Standard Industrial Classification (ISIC) Rev 4 for the classification of commodities (Focus on Crop and animal production)
- At regional level, commodity coverage vary depending on production volumes depicted in the UCA 2008/9
- The PPI-A questionnaire allows data collection of two sub-sectors (Crop and animal production) on farm and in markets with options of who responds farmer, trader etc)
 - Products are grouped within their major commodity group (e.g. in the crop questionnaire, pulses are an item, and beans as a pulse sub-item)
 - Qualitative information is collected on product quality in terms of comments/remarks within the questionnaire.



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3. DESIGN THE SAMPLING STRATEGY & DATA COLLECTION TOOL: WHY COLLECT PRICES AT POINT OF SALE? THE EXAMPLE OF CATTLE

- In cattle raising, subsistence farming is predominant, and most cattle sales are related to household cash needs.
- The Beef Value Chain Map, shown on the next slide, shows that most cattle are purchased first by food traders, who sell either in village markets or to rural slaughter slabs.

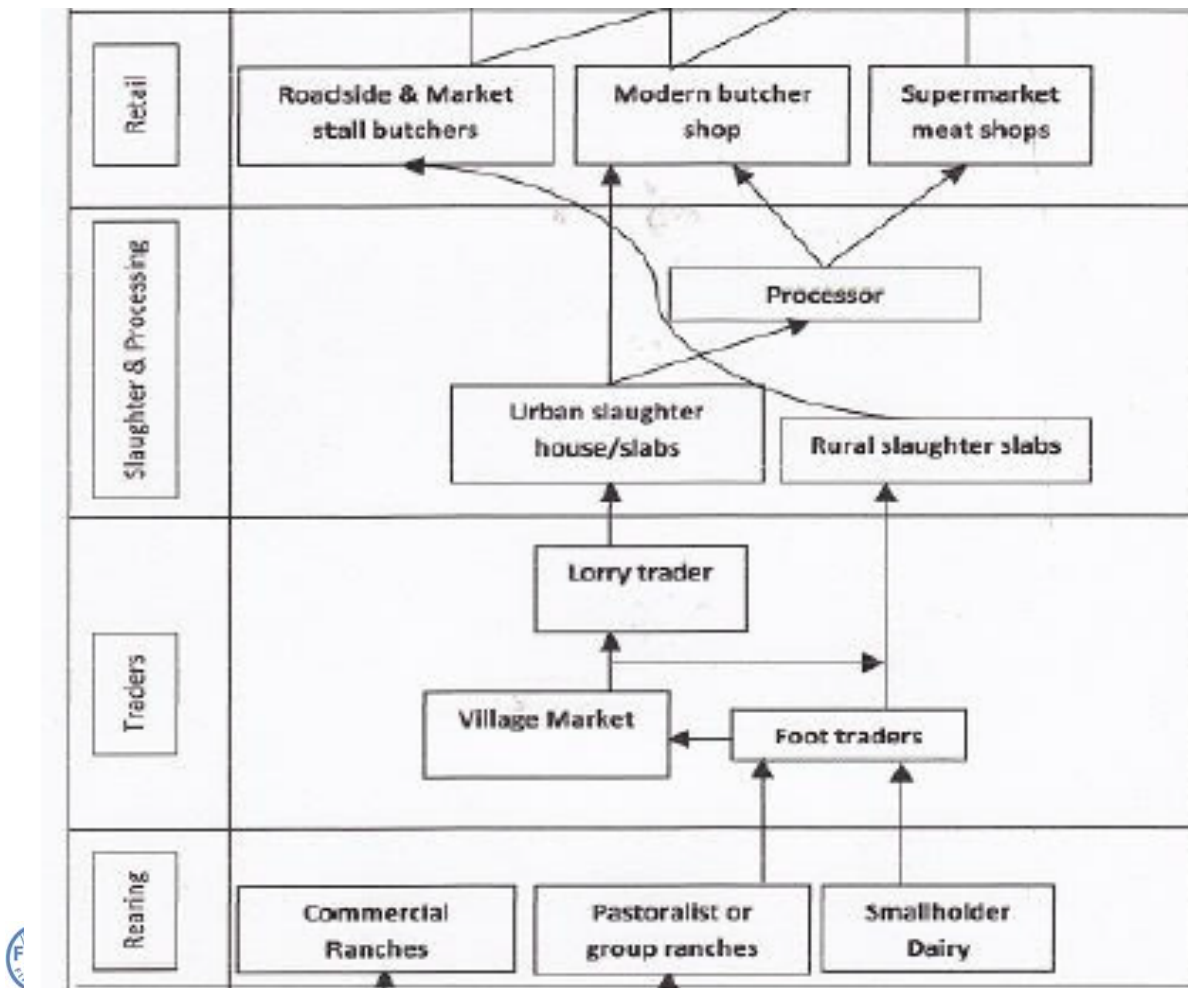


- Using the traditional PPI Manual approach of sampling a product (e.g. livestock), a very large sample of small farms in Uganda is needed to find those who sold that product (in this case a cow), resulting in high costs of data collection.
- The ideal point of sale is in the case of cattle in Uganda is the village market or the rural slaughter slab.
- This example shows the importance of the country context and its agriculture's production and sales structures, by commodity, when designing an efficient agriculture PPI program.

Source: Kingdom of the Netherlands (2012).
Identification of Livestock Investment Opportunities in
Uganda. Agriterro: Arnhem, Netherlands.



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6. COMPILE & DISSEMINATE INDICATORS AND PRODUCTS

- **Agriculture Producer Price (P):** an average or unit price received by a farmer for a commodity for a standardized unit of measure (kg, ton, etc).

1. Price (P) of a product sold *by farmer at farm-gate* - respondent =farmer

$$P = (\text{total receipts earned}) / (\text{Quantity in kg})$$

2. Price (P) of product sold *by farmer at market* - respondent =farmer

$$P = (\text{total receipts earned} - \text{freight costs} - \text{market dues}) / (\text{Quantity in kg})$$

3. Price (P) of product sold *by trader at market* - respondent =trader

$$P = (\text{total paid to farmers} - \text{freight costs} - \text{market dues}) / (\text{Quantity in kg})$$

**Total receipts paid/earned depends on the price concept – producer price or basic price.*



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6. COMPILE & DISSEMINATE INDICATORS AND PRODUCTS

Laspeyres index:

Base year's volume of production as weighting factor

$$PPI = \frac{\sum P_t Q_o}{\sum P_o Q_o} (100)$$

Paasche index:

Current year's volume of production as weighting factor

$$PPI = \frac{\sum P_t Q_1}{\sum P_o Q_1} (100)$$

Fisher index:

Geometric average of the Laspeyres and Paasche Indices

$$P^F = \sqrt{(P^L P^P)}$$



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Challenges in collecting and compiling producer prices

- I. Weighting of commodity groups
- II. Non-standard units
- III. Ensuring consistent quality across an agricultural product
- IV. Treatment of seasonality agricultural commodities
- V. Data flows
- VI. Delineating imported and locally produced products
- VII. Maintaining a large field force, particularly in the absence of a regional office: How do you ensure that enumerators are actually in the market on the market day?



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QUESTIONS FOR DISCUSSION BY APCAS MEMBERS

1. In the 1st stage of sampling, *how many markets* should be sampled from a region? How should we select them (i.e. key markets; random sampling from a frame of markets; other)?
2. In the 2nd stage: *how many traders/products* should be sampled per market?
 - a. *How to sample* (Quota/cut-off; Purposive; Random Sampling)? Implications?
 - b. *Who/when should sampling be done?* By the enumerator? Headquarters? Other?
 - c. For data from traders, *what costs should we excluded* to estimate the farmer's selling price? What are the *challenges* in getting this information?
 - d. How should we take into account *product variety, quality*?
 - e. Are there other issues we should be aware of, and solutions for them?
3. Should a country compute *producer* prices (excludes subsidies), or *basic* prices?
basic prices=producer prices + product subsidies - production taxes



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PROPOSED RECOMMENDATIONS

It is recommended that:

- In partnership with developing countries, FAO compile an updated manual on statistics pertaining to Prices Received by Farmers, and document existing challenges and good practices in the field.
- Member countries share with FAO documentation of their PPI-A programs, including questionnaires, meta-data, and challenges and solutions in the design of their PPI-A programs, and FAO provide these on a publicly accessible website.



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Thank you/ Merci!



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