



# **Quarterly GDP using production approach: Agriculture, Mining and quarrying**

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# Agriculture: Concept

## Crop output

- ▶ When growing and harvesting occur during same period, output is quantity multiplied by unit price at basic prices.
- ▶ When growing period covers more than one quarter, harvested crop is allocated to each quarter on the basis of the share of actual costs incurred during each quarter. Output during the growing period is treated as work in progress.

## Livestock output

Output is estimated in terms of number and weight, then valued at basic prices



## Issue in measurement of quarterly output for Agriculture

- ▶ The growth of crops fruits vegetables and livestock trees in plantation and fish cultivated in fish farms which is managed and controlled constitutes a process of production. Thus, the value of output in each quarter should be measured as work in progress (change in inventories).
- ▶ SNA93 prescribes that work in progress be calculated by distributing the value of harvested crops in proportion to the costs (intermediate consumption and labour) incurred in each period.



## Issue in measurement of quarterly output for Agriculture (cont'd)

- ▶ In practice, it may be difficult to adopt the recommendation of SNA93.
- ▶ Lack of reliable and comprehensive data on the quarterly distribution of costs of different products.
- ▶ Absence of data on forecasts of harvests and expected prices.
- ▶ Because of lack of data, an option is to use the “**at harvest**” approach, that is, to take the actual harvest as the measurement of output and to disregard the changes in work in progress



## Data sources: Agriculture

- ▶ **Possible quarterly indicators: values/quantities**
  - Ministry of Agriculture
    - Data on quantities of food crops and fruits harvested in each quarter
    - Forecasts of production and expected prices (to estimate work in progress for growing crops).
  - Quarterly survey of farmers (area planted, yield )
  - Marketing organizations (quantities delivered)
  - Household consumption surveys (if annually)



## Data sources: Agriculture

- ▶ **Possible quarterly indicators: values/quantities**
  - Population data (subsistence) (add trend)
  - Trend extrapolation (small components, services, forestry)
  - Exports
  
- ▶ Agricultural Producer Price Index
  
- ▶ Components of CPI
  
- ▶ Export price index



# Data sources: Mining and Quarrying

- ▶ **Possible quarterly sources/indicators: values/quantities**
  - Industrial Production index
  - Surveys:
    - Total / *by commodity*
    - Value / *quantity*
  - Royalties
  - Exports
  - VAT data
  - Employment/hours worked (+ productivity trend?) (Small components?)
  - Trend extrapolation (small components)
  
- ▶ **Producer Price Index components/specific purpose price indices**



## Some issues

### Data on Production

- ▶ Census and surveys are not carried out regularly.
- ▶ Administrative data - (Agricultural Extension officers' bias, timeliness, confidentiality for some mining products )
- ▶ Subsistence farming: estimates for own account production
- ▶ Informal activity/illegal activity .
- ▶ Operational/technical ratios (old), based on annual data , quarterly not available.
- ▶ Production account available at aggregated , not by main products
- ▶ Methodology not documented, no information on adjustment factors





## Some issues

### Data on Prices

- ▶ Market prices/ basic prices, price collection
- ▶ CPI and Retail price index as a proxy for PPI
- ▶ Calculation of average prices (Annual average prices not calculated as weighted averages).

### Specific issue

- ▶ Computation of work in progress for growing crop .



Thank You