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## Agenda Item 11

## ASIA AND PACIFIC COMMISSION ON AGRICULTURAL STATISTICS

## TWENTY-THIRD SESSION

Siem Reap, Cambodia, 26 – 30 April 2010

**Collecting and Compiling Food and Agricultural Prices in  
the APCAS Member Countries:  
Current Status and Future Directions**

**I. Introduction**

1. The main objective of this paper is to examine the state of information related to prices of food and agricultural commodities/products in APCAS member countries and to make recommendations for improving agricultural price data systems in the region. Although, the focus of the paper is on agricultural producer prices, the recommendations made can be applied to price data systems in general.

2. The paper begins by underscoring the important role of price statistics in the areas of policy and economic analysis in Section II. Section III of the paper briefly describes the main price datasets available with FAO. The status of prices data reported by countries in the APCAS group to FAO is examined in Section IV. Section V of the paper identifies some future directions that countries in the group can take to improve their price data systems. The final section highlights the useful role that FAO can play in support of enhancing price data systems for APCAS member countries.

## II. Key Roles of Food and Agricultural Price Statistics

3. Price statistics are one of the most important elements in national and international statistical systems. The significance of price statistics is reflected in their usefulness in many key areas of national interest such as policy formulation, investment decisions, etc. Some of the areas where price statistics play an important role are discussed below:

- **Formulation, monitoring and impact assessment of policies:** Price statistics are an extremely useful input in the various stages of a policy cycle viz., formulation, monitoring and impact assessment. Price statistics help indicate specific areas where policy interventions may be desired, they help to monitor implementation of policies and assist in assessing the impact of policy decisions. For example, a situation in which consumers are faced with high domestic food prices may warrant a policy of trade liberalisation in food products; the impact of this policy can be assessed by checking whether or not and to what extent price transmission has taken place between border prices and domestic prices of food products in which trade was liberalised.
- **Trade and investment decisions:** Information on prices can help influence trade and investment decisions. For instance, multinational companies wanting to invest in countries with economical sources of supply of primary commodities will seek information on prices of these commodities. Depending on the size of investments, the decisions of these large companies in turn can influence international trade flows in the respective commodities.
- **Production planning:** Prices of agricultural commodities, processed commodities and by-products serve as incentives to producers and have a significant influence on formulation of production plans, such as, switching of production from one commodity to another due to expected higher returns. The type and volume of agricultural production activity very much depend on the current market prices of various commodities or products.
- **Economic analysis:** Price statistics help to indicate the level and direction of economic growth in a country. They are helpful in determining income patterns of various economic actors in a society. A comparison of price levels at different stages of the value-chain in different countries and for different commodities helps to understand the degree of market and product competitiveness. When countries depend on specific commodities for deriving a large part of their export revenue, the movement in prices of these crops is critical in influencing economic growth of these countries.
- **Monitoring food security situation:** Information on changes in prices of food and agricultural products assume great significance from national food security and rural development standpoints. This is particularly the case in many developing and least developing countries where agriculture is a vital means of livelihood for large parts of population, and expenditure on food constitutes a large part of the consumption expenditure of poorer sections of people.
- **Compilation of national accounts:** Price statistics help to measure aggregate economic activity in a country. They help to record the value of domestic output (GDP – national and sectoral), primary and secondary income flows (GNI), value of international trade, etc.

## III. Food and Agricultural Price Datasets disseminated by FAO

4. The importance of price statistics is well recognised by FAO and this recognition is mirrored in the variety of price datasets produced by the organization. For instance, the Statistics Division of FAO disseminates annual agricultural producer prices for over 140 countries and for more than 200 commodities, making FAOSTAT<sup>1</sup> database the single largest source on producer prices in the world. The trade domain of FAOSTAT contains import /export quantities and values by country and commodity which are useful for computing trade related prices (unit values).

5. The FAO also disseminates International Commodity Prices<sup>2</sup> for major trade commodities on weekly/monthly and annual basis. In addition, the FAO also compiles national basic food prices and disseminates them via the Global Information Early Warning System – on food and agriculture (GIEWS)<sup>3</sup>. This dataset provides key price information specifically useful for food security analysis. Currently, GIEWS contains prices data for 14 countries in APCAS group. The price data are mainly sub-national (a region or town), relate to specific crops/commodities and are generally retail prices. One caveat in using this dataset however is that it is focused on specific crops for a country at the sub-national level and does not provide country level data or the ability for cross-country comparisons of prices.

#### IV. Current Status of Collecting and Compiling Producer Price Data in APCAS member countries

6. As mentioned above, the Statistics Division of FAO disseminates producer prices for food and agricultural commodities. These prices are collected mainly through questionnaires sent to national statistical offices or relevant ministries of FAO Member nations, including APCAS member countries. An examination of producer prices data in FAOSTAT reveals the following information pertaining to APCAS member countries:

- **Number of reporting countries:** Of the 26 member countries of APCAS to whom price questionnaires were sent by FAO in 2009, thirteen (13) reported data. This demonstrates a response rate of 50 percent rate by the group.
- **Coverage of data:** For the year 2008, on average, 54 percent of prices data for the APCAS group was official data i.e. the share of data reported by countries in total data requested from them was 54 percent. This is close to the average size of response from the main geographic regions (excluding Africa, which is less than 30 percent). The percentage of data reported by APCAS member countries ranged from 23 percent to 95 percent.
- **Trend of reporting:** An analysis of the trend of response to FAO prices questionnaires by the APCAS countries showed that, overall, responses have been erratic. In other words, there has been no appreciable increase in the number of responses from the region in the past six years. If 2005 is taken as a reference year, the response rate *after* 2005 has been lower than that for the period *before* 2005.

#### Response of APCAS member countries to FAO prices questionnaires

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<sup>1</sup> FAOSTAT – Prices (<http://faostat.fao.org/site/351/default.aspx> )

<sup>2</sup> International Commodity Prices (<http://www.fao.org/es/esc/prices/PricesServlet.jsp?lang=en>)

<sup>3</sup> Global Information Early Warning System – on food and agriculture (GIEWS)(<http://www.fao.org/giews/pricetool/>)

Data Year	2002	2003	2004	2006	2007	2008
No. of countries responding	18	17	17	15	16	13

Note: FAO did not collect prices in 2005.

- **Metadata:** In general, most countries do not provide information related to metadata and the methodology used for collecting and estimating prices.

7. In summary, the above analysis highlights that almost half of the member countries to whom prices questionnaires are sent by FAO do not respond. In addition, producer prices are reported for only half the number of commodities for which information is requested by FAO. Since collection of prices data is vital, given their tremendous significance, an outstanding question remains: are there agricultural price data at country level that are not being disseminated by countries to FAO? In order to seek answers to this question a short questionnaire was sent by FAO to the APCAS member countries prior to the meeting of the 23<sup>rd</sup> session of APCAS. The responses received from members (only half the membership responded) demonstrated that countries could be classified into three categories based on whether or not they collect producer prices and whether or not they report these to FAO. These categories include countries that: 1) do not collect producer prices, 2) collect producer prices but do not report to FAO regularly, and, 3) collect producer prices and report to FAO regularly.

8. This analysis highlights that there may be constraints faced by countries with respect to collection (i.e. countries that do not collect producer price data) and/or dissemination of data (i.e. countries that collect producer prices data but do not report to FAO). A part of the problem may have to do with the unique characteristics of agricultural commodity price data. For instance, in the case of price data, the frequency of collection, observation units, sampling technique, observation technique, method of aggregation, etc. can all vary from product to product and from region to region and this aspect places high demands on time and resources spent on the data collection and processing activities. Outlined below are some of the possible shortcomings with regards to collection and processing of food and agricultural price data.

- Lack of adequate resources prevents countries from conducting price data collection, which may be costly, as outlined above.
- Even where data is collected, it is not processed and/or reported in a desired form due to lack of adequately trained technical staff.
- In case of missing data, technological and methodological constraints may limit the capacity of national statistical institutions to address the issue through, for example, use of modern imputation techniques.
- There is limited coordination amongst various institutions that generate different types of price data; this hampers consolidation of various price statistics.
- There is insufficient emphasis placed on monitoring quality of data at different stages of price compilation.
- There is a general lack of timely availability of prices data. This limits their usefulness for policy formulation and analysis especially during emergencies. For instance, a general lack of timely data on prices in many countries in the region during the episode of soaring food prices in 2007/08 severely restricted monitoring of the food security situation.

## V. Future Directions for Improving Price Data Systems in APCAS member countries

9. Given the significance of price statistics for food security monitoring and agricultural policy making and considering the current state of prices data in APCAS member countries, there is an urgent need to address the price data systems in the region. This paper makes the following recommendations with regard to technical aspects of data systems:

### **Improving institutional capacities for prices data collection and dissemination**

10. Given the availability of prices at various levels and therefore the various institutions involved in management of prices data, networking amongst these institutions becomes crucial. For example, often, the Ministry of Agriculture may collect farm gate prices, government marketing agencies may be involved in collecting wholesale prices and national statistical offices or the Ministry of Commerce may collect retail prices. Often, the private sector that may possess most timely information on market prices and hence information networking between government agencies/national institutions and the private sector should be encouraged. Importantly, a plan for statistical development of price statistics should be framed and this should be dovetailed into the overall national statistical development plan. Guidelines for the framework could be drawn from the National Strategies for the Development of Statistics (NSDS) initiative. In this regard, it may be noted that several countries in the APCAS member countries have already produced NSDS??

11. Regular training that covers principles and best practices of price data collection should be conducted for data collectors. For instance, where particular levels of prices are not collected, some type of notional prices could be compiled. As an example, notional farm-gate prices could be compiled by deducting transaction costs and wholesaler margins from wholesale prices. In addition, efforts should be made to build human capacities in prices data processing. Examples of this include imputing missing data and calculating weighted averages. There is also a need to sensitize national custodians of data to comprehend user needs and produce relevant information. This will require an overall re-orientation and re-balancing of price data systems to focus on user needs, rather than a supply-driven approach.

### **Establishing data quality frameworks**

12. Whilst the significance of price statistics is clearly established, their true usefulness depends on the extent to which they fulfil requirements of data quality. Data quality can be assessed on several dimensions and hence establishing a framework to assess data quality would depend on the particular needs and objectives of the national statistical office. The Statistics Division of FAO recommends six parameters to establish quality of data. These are: i) Relevance; ii) Accuracy; iii) Timeliness; iv) Punctuality; v) Coherence; and, vi) Comparability. These quality parameters are equally relevant at national level as they are at international level and can be used as data quality benchmarks by national statistical offices in APCAS member countries.

13. Sound metadata is also an essential prerequisite of any data quality framework. It helps to ascertain coherence of data and enables users to interpret data correctly. Good quality metadata should describe various quality aspects of data, including, i) content aspects describing concepts, definitions and classifications of variables; ii) availability aspects describing which statistical data are available, where they are located, how they can be accessed, etc.; iii) methods describing how data were collected, processed, estimated, etc. As mentioned earlier, the metadata is generally missing in the responses of the APCAS member countries. However, the FAO CountrySTAT Philippines is an excellent example of good quality metadata (<http://countrystat.bas.gov.ph/>).

### **Enhancing the analytical value of prices data**

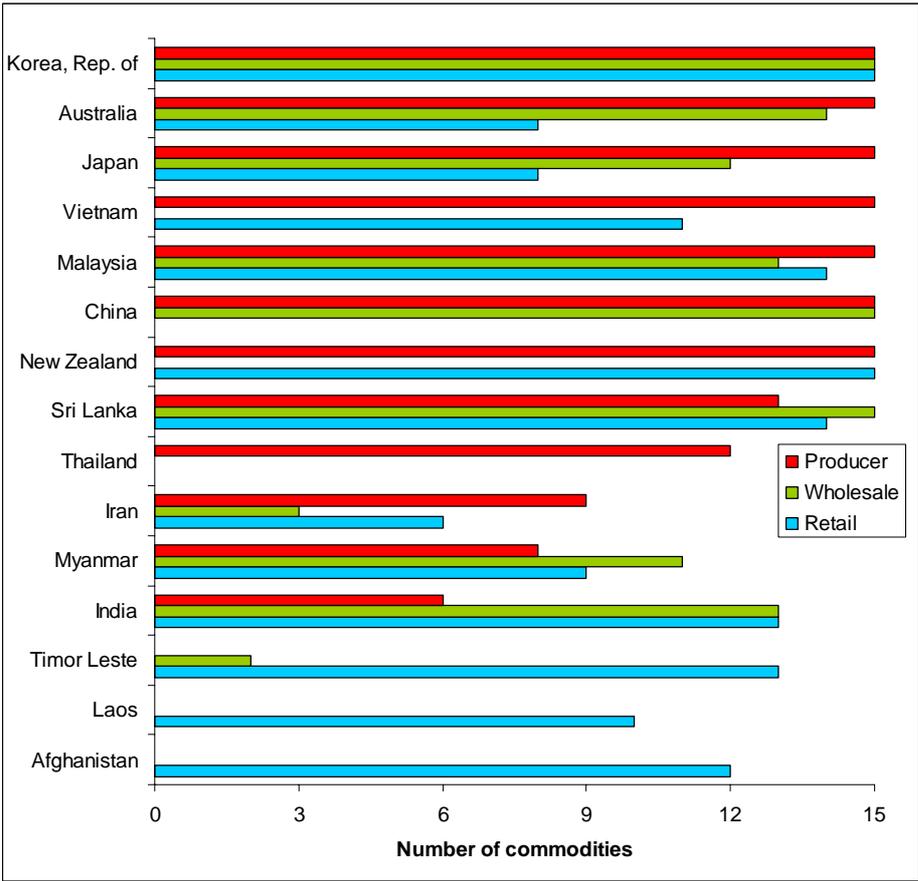
14. Increased use of data is beneficial from many perspectives, including for better policy making, for attracting government and donor resources in statistics related work, etc. In order to increase the use and scope of price statistics, it is important *inter alia* to enhance the analytical value of the data.

There are several ways in which value could be added to prices data. For instance, compiling prices data for different levels of the commodity chain (farm gate, wholesale, retail, export) and disseminating them through one source would help in value chain analysis and in understanding income patterns of different economic actors. Another advantage of this would be to provide users with an opportunity to undertake detailed price analysis at the country as well as at cross country level. Similarly, constructing price indices will help to understand history of price movement and to forecast future outlook.

**Adopting national and regional product-specific approach for compiling prices data**

15. Ideally, national statistical systems which produce price statistics for the food and agricultural sector should collect and disseminate prices for *all* products produced in and traded by the country. However, given a general lack of resources in many countries, it may not be possible to cover this scale. One way to address this issue would be to start on a smaller scale and gradually expand the commodity coverage. For instance, countries could adopt a product-specific approach and to collect and disseminate price data for selected products only, based on some criteria such as main products produced. Graph 1 illustrates that more than half of APCAS member countries regularly collect producer prices for more than 12 of their top 15 food and agricultural products produced locally.

**Graph 1: Type of prices data collected by selected APCAS member countries for their top 15 domestically produced commodities**



Source: Based on responses received from national statistical focal points.

The selection of products could also be based on the country’s goals and objectives. Thus, for instance, prices of crops grown by small holders and subsistence farmers may be important from national food security and rural development objectives, prices of cash crops may be important from national revenue perspective, and so on. In addition, countries could collect prices of products which are commonly produced in their region or their main trading group. A regional approach would

provide a basis to facilitate comparison of movements in prices in different countries for these products and thus considerably increase the analytical value of data. For instance, Table 1 shows products commonly produced by the APCAS group and this could form a basis for collecting and disseminating prices by member countries.

**Table 1: List of food and agricultural products commonly produced by 20 or more APCAS countries**

<b>Product</b>	<b>No. of countries producing the product</b>
Cattle meat	26
Chicken meat	26
Hen eggs, in shell	26
Cow milk, whole, fresh	25
Goat meat	24
Pig meat	23
Sheep meat	23
Maize	26
Rice, paddy	25
Potatoes	24
Oranges	23
Soybeans	22
Beans, dry	21
Cabbages and other brassicas	21
Sugar cane	21
Tomatoes	20
Bananas	20
Groundnuts, with shell	20
Mangoes, mangosteens, guavas	20
Sweet potatoes	20

Source: FAOSTAT at [faostat.fao.org](http://faostat.fao.org) (data downloaded in April 2010)

## **VI. FAO support for Improving Price Data Systems in APCAS member countries**

16. The Statistics Division of FAO has many years of experience in building human and institutional capacities related to national statistical systems and this could be leveraged to develop and strengthen price data systems in APCAS member countries. FAO support could be enlisted in the areas for improvement outlined above. Specifically, FAO could help APCAS member countries in developing the following:

- **Methodological framework for data compilation and processing:** FAO could provide assistance to countries in areas of collection and processing of price statistics. In addition, assistance could be provided to harmonise prices data collected from various national sources and from various geographic locations in the country into standardised forms. Further, technical support could be provided to countries by subject matter experts from FAO for imputing missing prices data, in line with international practices. Support in these areas would be provided through training workshops, handbooks, etc.

- **Enhanced analytical capacity:** FAO assistance could be sought by countries to facilitate improvement in the analytical capacity of their price statistics. FAO experts would help countries in compiling price indices based on international practices, producing secondary indicators, etc.
- **Data quality framework:** The quality framework used by FAO for assessing quality of price statistics could be applied for assessing data quality of food and agricultural prices produced by national statistical offices to make them comparable at the international level. In addition, the FAO ABCDQ project (Agricultural Bulletin Board on Data Collection, Dissemination and Quality of Statistics) that was established to provide statistical metadata on the sources and methods of national agricultural data collection and dissemination, could be used to frame guidelines for establishment of national metadata systems.
- **Forum for partnership:** FAO, with its wide experience and networking, could provide a forum for exchange of ideas and practices related to price statistics for the development of food and agricultural statistical systems in APCAS member countries. The exchanges could take place at the regional level, involving various statistical institutions in the region, and at the country level, involving national statistical offices and users i.e. policy makers, analysts, research institutions, business sector, etc.
- **Platform for integration of national datasets:** The FAO CountrySTAT is a national statistical information system that harmonizes and integrates national data on food and agriculture coming from different sources into a national dataset using standard FAO concepts and definitions (for more information visit: <http://www.fao.org/economic/ess/countrystat/countrystathome/en/>). CountrySTAT is currently being implemented in the Philippines, Bhutan, Chile and in 21 African countries with a regional version being planned for Union Economique et Monétaire Ouest Africaine (UEMOA). CountrySTAT can provide countries in APCAS member countries with the framework to integrate all the country food and agriculture price data into one dataset for improved analysis and wider dissemination.