Country Report Sri Lanka

Introduction

Sri Lanka is an Island in South Asia, accommodating 20.7 million people on an area 65,610 Square kilo meters with 62,705 Sq Km of land area and 2,905 Sq Km of inland water. Cultivated extend is about 27 percent of the total land area and 54 percent of the cultivated extend used for paddy cultivation in year 2014. About 85 percent of country population living in rural areas. The country has achieved middle income status and per capita income is 3,625 US$ in year 2014. Agriculture is one of the most important sectors of the economy and gives employment to at least 28.5% of employed persons with a high degree of subsistence farming. As per the Gross National Products (GDP) estimation in 2014, Agriculture sector including Forestry and Fishing contribute 10 percent to the economy while 32 percent in industry and 58 percent in service sector.

Contribution to Agriculture Sector

Description	Percentage
Tea	10%
Rubber	2%
Coconut	8%
Minor export crops	3%
Paddy	11%
Livestock	7%
Other food crops (Vegetables, Fruits etc.)	31%
Plantation development	2%
Firewood and forestry	6%
Other Agricultural crops	3%
Marine and Inland fishing	18%

Excluding fisheries sector Paddy, Tea and other food crops gives higher contribution for the Agricultural sector in the country.

Department of Census and Statistics (DCS) in Sri Lanka is the main authorized institute for data collection compilation and dissemination of all type of social and economic statistics in the country and it has Island wide network for data collection integrated with administrative setup. For the Agricultural data collection process DCS always collaborate with other related Ministries, Department and research institutes. Agriculture and environmental statistics division of the DCS responsible for

Agricultural data. It collects relative statistics mainly through conducting censuses, sample surveys and administrative records. Providing an accurate and timely data on agriculture sector has become a great challenge for DCS as to meet the growing demand of many stakeholders in addition to the government of Sri Lanka.

According to the government administration network, Sri Lanka has 25 districts and each district has several number of Divisional Secretariat (DS) Divisions. Under the DS divisions there are some Grama Niladari (GN) divisions. These are the lowest administrative unit in the country and under the GN division it has number of villages. Statistical Officers who are appointed to the DS divisions are responsible for the field data collection in the division.

1. Crop cutting survey

Paddy is the most important food crop in Sri Lanka occupying 54 percent of the agricultural area and about 1.8 million families are engaged in paddy cultivation in Island wide. Currently produce 29 million MT. of paddy annually and satisfies about 95 percent of the domestic requirement. For estimate the average yield and the production of paddy in Sri Lanka is performed on the basis on crop cutting technique where the designated field officers visit the selected sample plots and carry out experiments as per the directives and instructions of DCS. The size of the plot where matured crop is to be harvested is 5 mts*5 mts. Harvesting and measuring activities are performed manually. About 9,500 paddy parcels (plots) use for the crop cutting survey seasonally. This survey basically based on the paddy extend under the country. Paddy extend is estimated on the basis of complete enumeration of paddy parcels in the county covering both two seasons (Maha, Yala). This survey is carried out in each season of a cultivation year to collect the paddy extent under categories namely, asweddumized extent sown extent and harvested extend. These extent classified by type of irrigation namely, Major Irrigation Schemes, Minor Irrigation Schemes and Rain fed.

"Agricultural Research and Production Assistants (ARPO) of Department of Agriculture attached to Agrarian Service Centers do play the role of "Primary Reporters" to report the extent which is parcel-wise enumeration of all paddy growing parcels. They list out the area Asweddumized, Sown and Harvested in Maha and Yala season at village in the prescribed form. Here the "paddy parcel" is defined to be piece/plot of land cultivated by one individual farmer or group of farmers jointly surrounded by another paddy parcel cultivated another individual farmer or group of farmers or any land cultivated with crops other than paddy or uncultivated land such as road, stream etc. The paddy extent enumerated in such a way is summarized by Village and transferred on to the form known as PII which gives the aggregated extent under paddy by above categories and by irrigation modes at

GN division level and by DS level. This form is prepared by the Range Statistical Officer attached to a particular DS. During the season the extent of sown and harvested are recorded while asweddumized extent is updated only, if there is a change occurrence.

- **Sampling Design:**

The sampling design adopted in the survey is a stratified multistage sampling method with treating DS divisions as strata and mode of irrigation schemes namely; Major, Minor, and Rain-fed as sub strata. Number of villages to be selected for crop cutting experiments in each scheme is decided on the basis of Acreage sown extent in the previous corresponding season.

In each selected village two crop cutting experiments are conducted. At present the sample villages and parcels are selected at random.

- **Estimation of Average yield**

Average yield of paddy per acre/hectare by mode of irrigation and by district is being estimated through an objective survey which is popularly known as crop cutting survey on paddy. In estimating the paddy production by district, (dry weight) factors ascertained in a survey some time back representing all seed varieties are being used for converting the wet grain to dry grain weights.

- **Field Operation**

Once the list of villages are transmitted to the Statistics Branch of the respective District, the head of division appoint suitable crop cutting officers including DS Statistical Officer and field officers attached to the Agrarian Development Department.

In view of the accuracy of the experimental results, a sample 1/5 of selected villages are to be supervised by executive officers including district Statistician, Divisional Secretary, Director of Agriculture etc. Spot checks are to be performed by them by visiting the sample villages.

As this crop cutting methodology has become a very laborious and time consuming task to personal who are doing experiments, in one way it leads to quality of result. On the other hand due to the modern techniques adopted by the farmers, the existing technique has an impact an operational issues. It is essential to improve this system or introduce new methodology for estimating paddy production.

Highland Crops

The crops excluding paddy are defined to be the highland crops and they are mainly grown in an environment of un-irrigated dry land. Highland crops includes various kinds of crops grown in Sri Lanka such as the crops that are in the category of Seasonal Crops viz. Coarse grains, Legumes, Vegetables, Oil seeds, Industrial crops, Root crops, etc., then the Semi-permanent crops such as

Plantain, Betel and Sugar cane, and all other crops under the category of perennial crops such as Fruit crops, Minor export crops etc. The cultural practices associated in cultivation of these crops are synonymous with very complicated nature in Sri Lanka which varies from systematically to haphazardly planting situation. Complicated nature of the cultural practices leads to many difficulties in adopting a proper procedure to report the extent and production. The crop extent is collected twice a year pertaining to the seasonal and semi-permanent crops on the basis of the reported extent provided by the primary reporters.

As there is no procedure to estimate the average yields like paddy based on crop cuttings, yields level for the particular DS/ASC are determined with consultation of respective Agricultural Officers and Divisional Officers attached to Agrarian service Centers considering factors effected on the crop during the particular season, growing pattern, climatic conditions, growing varieties, etc,. Then the production of the particular crop is computed as the product of harvested extent and the average yield provided by agricultural personnel.

Reconnaissance Surveys

Estimating Big – Onion and Potato Production

Recognizing the importance of Big-onion cultivation in Sri Lanka, with a view to estimate the probable production to be harvested by moth, a sample survey was initiated by the division. Focusing the Yala season and it is being undertaken annually hitherto. This survey is confined only to four Big-onion growing districts.

Methodology: Due to the unavailability of permanent list frame of Big onion farmers in the places where cultivation exists and many variations could be seen over the seasons, as first step is to inform respective Statistical Officers attached to division through District Heads and obtain a list of GN divisions along with the estimated extent to be cultivated during the season. This will be treated as the frame for the selection of required sample of villages and the villages are selected at random.

It is time a consuming task to list out all the farmers with in the selected village. One farmer is identified with the consultation of Agriculture Research and Production Assistant (ARPO) in the selected GN division, and then a cluster of 6 farmers who are neighboring to the firstly identified farmer are selected for enumeration. This procedure is being adopted as a measure to cut down the traveling cost and time for enumeration.

The specific questionnaire contains the set of questions on the aspects of cultivated extent, expected production depending on the current crop outlook, cost of production, source of seeds, mode of irrigation and marketing etc. Probable production according to month of harvesting is the valuable

output sought by policy planners for this crop in order to take decisions in time to restrict the flow of imports during the harvesting time as a measure of safe guarding the local farmers. In addition to the yields and production, the extent and estimated number of farmers engaged in the cultivation is also being disseminated through this reconnaissance survey.

Statistical Officers attached to the respective DS divisions are deployed to interview the farmers for data collection. In order to estimate the production the estimated extent to be harvested is collected in the consultation of ARPO. Coverage for the extent is not only for the sample GNN but also for whole set of GNN cultivated Big-onion during the season.

In order to estimate the potato production for two potato growing Districts, the procedure is being adopted is very much consistent with the methodology adopted in estimating Big-onion. This survey is conducted three times a year.

2. Livestock Statistics

Livestock statistics collected by the DCS is comprised of livestock number by type, livestock products and numbers legally slaughtered. In the Census of Agriculture, livestock numbers by species are collected through house to house enumeration basis. It has no proper sampling system for calculate livestock statistics. However, annual estimates are being prepared based on the reports provided by primary reporters, obviously the accuracy of them is depending on the knowledge of enumerators in their area of jurisdiction.

3. Horticulture

Vegetable, Leafy Vegetable and Fruits are the famous horticulture crops in Sri Lanka and it gives highest contribution to horticulture sector. Research on horticulture crops has been mainly undertaken by the Horticulture Crop Research and Development Institute (HORDI) of the Department of Agriculture. They conduct the various type of horticulture research for crop developing and promoting purpose.

Department of Agriculture also conduct the sample surveys for selected horticulture crop to especially for forecast production and estimate cost of production. There was no proper methodology to estimate average yield for horticulture crops and crop forecasting is depend on eye estimation.

4. Fishing and Aquaculture Statistics

Fisheries is one of the most important industry of the country as well as the agriculture sector in terms of its contribution to the Gross Domestic Production (GDP), export income earnings, providing of livelihoods and source of animal nutrition. Around 221,350 fishermen actively engage in marine

fishing activities while 50,790 engage in inland fishing and aquaculture activities. As well 2.6 million of the population directly and indirectly engages in fishery related activities. Therefore it is an important as a source of income of rural poor.

Fisheries can be divided in to three main sub sectors; such as offshore, coastal and inland and aquaculture. With the expansion of fisheries industry and enforcement of international conservation measures the fisheries data collection has become most important activity. Therefore it has been taken efforts to streamline the existing catch and effort data collection.

Fisheries data collection

Sri Lanka is divided into 15 Fisheries Administrative Districts in the marine fisheries sector. A number of Fisheries Inspectors collect information for each district, including fish production by major commercial groups, fish prices at the landing sites, number of fishing craft in operation and dry fish production. Initially the system is intended to achieve total enumeration of catches and vessels activities.

Recently the system has been improved to a sample survey for offshore fishery; samples are collected during the unloading of vessels, with all specimens unloaded from the vessel selected for sampling monitored. This includes details on the numbers of fish unloaded, sample weights, where possible, and lengths of individual fish, measured with a tape measure. Lengths and weights might be measured whole or processed, depending on the condition of the fish.

As well a logbook system has been introduced for multiday vessels since 2012 and completion of logbooks has been made compulsory for all multiday vessels.

Question List

Crop cutting Survey

1. The existing system on paddy is very laborious and time consuming task.
2. Due to the modern techniques adopted by the farmers, the existing technique has an impact an operational issues.
3. There are lot of non-sampling errors because of lack of field supervision.
4. Due to complicated growing patterns it is difficult to make sample frame and conduct crop cutting surveys for highland crops.

Livestock Statistics

1. It has no proper sample frame to design sample survey to livestock sector.

2. Lack of technical knowledge about how to calculate livestock production.

3. Livestock number in country is always changing.

Horticulture Survey

1. There was no proper methodology to estimate average yield for horticulture crops and crop forecasting is depend on eye estimation.
2. No crop cutting surveys for horticulture sector.
3. In Sri Lanka horticulture farmers cultivate these crops as mixed crops so it is difficult to measure extent for each crops.
4. No proper methodology to estimate crop damages.

Fishing and Aquaculture Statistics

1. Since lack of trained samplers for data collection, difficult to complete all sample landing sites on offshore fishery.

2. There was no proper sample frame for coastal sector and coastal fish production based on eye estimation.