

An Appraisal of the Agricultural Statistics of Nepal

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Abstract

The estimation of GDP related indicators is carried out by the CBS over the last fifty years. The agricultural sector has been an important part of GDP. The current agricultural statistics are very useful for planning and policy formulation in agriculture and estimating GDP. These statistics should be reliable, valid, and accurate in terms of time and quality and there must also be a system to produce these statistics in time with a high quality. In order to achieve this, scientific tools must be used in crop modeling and monitoring and authority should be given to concerned agencies for the production of statistical data including current agricultural statistics.

1. Introduction

Although Statistics Act 2015BS, recognizes the Central Bureau of Statistics (CBS) as the sole authority in producing economic and social statistics, various managerial and other constraints hinder the agency in generating the statistics necessary for planners and policymakers in detail and in time. Therefore other Government Ministries, Departments, Central Bank and even non-government institutions like the Federation of Nepalese Chamber of Commerce and Industry, and the Family Planning Association of Nepal are engaged in the production of statistics. Considering the situation, the Ministry of Agriculture Development (MOAD) of Nepal Government now brings out agricultural statistics for planning and policymaking in the agriculture sector to monitor the Millennium Development Goal (MDG), i.e. 'Eradicating Extreme Poverty and Hunger' and help in forecasting the Nation's Gross Domestic Product (GDP) and assess the food security situation.

About 67 % of Nepal total economically active population is engaged in agriculture as the main occupation. The current share of agriculture in GDP is about 35% (CBS, 2013). The above figures show that Nepal is an agrarian society and most of its inhabitants are engaged in subsistent agriculture. Considering these facts; National Agricultural Policy 2004 has initiated transformation of the subsistent farmers toward commercialization to contribute in the national economy as its main priority. But the system needs some modification. The present paper is one step in that direction.

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2. Situation Review

The estimation of GDP - related indicators of the nation is being done by the CBS over the last fifty years. The most important part of GDP has been agricultural sector so far. Though the share of agriculture in GDP is decreasing year by year, two - thirds of the country's economically active people are engaged in agriculture (CBS, 2004).

The agriculture statistics has two major components: a. basic and b. current statistics. The basic one includes information which is slowly changing in nature, for example, land tenure, parcel size, area under temporary crop or permanent crop, farming practices, soil type, irrigation facilities, cropping intensity etc. The current statistics are highly affected by weather related phenomena, such as temperature, rainfall, and disasters. Examples are the production and yield of different crops as well as the numbers of livestock and products.

The basic agricultural statistics are collected by the CBS through decennial censuses while the current, particularly those related to area and production of various crops and number as well as production of various livestock and others, have been produced by the MOAD with the help of its departments, directorates, and district offices.

In 1991, the authority of producing current agricultural statistics was given to the CBS. In the beginning, there was an understanding between the CBS and the MOAD that current agricultural statistics should be produced by both organizations for some years and then the CBS would take over, but that did not happen.

Due to the large organizational structure of the MOAD about 350 offices in the 75 districts and 10 to 20 agricultural and livestock service, and sub - service centers in all the districts and an extensive technical staff of more than 10,000 are now at work it was easy for the MOAD to produce the current statistics rather than CBS, which has only 33 field offices with only about 500 field staff.

These factors, apart from other managerial and financial constraints, prevented the CBS from producing fresh agriculture statistics. The CBS is still doing some crop and livestock surveys, but the MOAD now brings out data regularly on the semiannual and annual production of cereal crops (rice, wheat, maize, millet, buckwheat, and barley), cash crops (jute, sugarcane, tobacco, tea, and coffee), pulses, horticultural crops (fruits, vegetables, and potato), spice crops (cardamom, ginger, chilly, turmeric, garlic etc.), special crops (mushroom, honeybee, and silkworms), livestock (cattle, buffaloes, goat, sheep, pig, fowl, and ducks) and their production (milk, meat, wool, eggs), fisheries and many other agriculture - related variables at the district level. These are the only estimates currently available in the country for analyzing the food security

situation and estimation of GDP as well as for planning and policymaking in agriculture and other sectors. Thus the only source of current agriculture statistics in the country is MOAD.

3. Methodology

The methodology currently being applied by the Ministry for the production of current agriculture statistics of the nation consists of the following parts.

Interview with Selected Farmers

A two-stage sample design is being applied for the selection of farmer households. Data obtained from periodical agricultural censuses are taken as a frame for this survey. In the first stage, selection of wards is done as PSU (primary sampling units) by probability proportional to size (PPS) sampling technique. The number of PSUs ranges between 30 or 5 percent of the total number of wards in the district, depending upon the size of holdings (agricultural households) in the district. For the second stage sampling, all holdings of the selected wards are first listed. Five percent of the holdings among the listed ones are selected for interview by the systematic sampling technique. These selected holdings are interviewed two times a year for the estimation/adjustment of area/production of crops and number/production of various livestock.

Crop Cutting

Crop cutting experiment for the major crops paddy, maize, wheat, millet, potato, oilseed, lentil, and others is done by the respective agricultural service centers and sub-centers of the district and is closely monitored by the district, regional, and central offices. Generally, a 2 by 5 square meter plot is taken for this experiment but in the case of unavailability in some areas (mountain region) the size is lowered. The experiment is done for irrigated and non-irrigated lands and also for the improved or local seeds used. The crop cutting experiment is done mostly to estimate the yield rates of crops. The production is estimated by data obtained through interview with farmers and productivity obtained by crop cutting surveys. The area of the respective crops in the district is compared with the area obtained through the Agricultural Census with the necessary adjustment made.

Crop Situation Report and Effect of Natural Disaster

The adjustment necessary is made from the information obtained through field observation of crops and the effect of natural disasters such as flood, drought, hailstone, cold wave etc. The Ministry has set up a system of weekly monitoring

and reporting on the situation of crops and livestock as well as agricultural input, diseases, and weather conditions. The service centers, and sub centers report the situation weekly to the district offices and reports are compiled in the district and forwarded to the Ministry. The Ministry compiles all these reports and publishes them in a bi - monthly bulletin. The reports on crop situations, weather, input, and disaster are used to adjust the area/production and number/production of crops and livestock.

Estimation of Fishery and Other Special Crops

For estimating fishery - related statistics, captive ponds are listed. A random selection of these ponds and monthly interview with owners gives estimation of the fishery statistics of the nation. In a similar fashion a measure applying fixed productivity (kg/ha), of the fish production from natural ponds, streams, and rivers is obtained.

For minor crops like mushroom, honey, chilly, turmeric etc the reporting from the district offices and the concerned technical directorates is taken into consideration.

4. Data Dissemination

Data are disseminated in the following three steps.

- First estimate of the summer crops in the month of October /November;
- Second estimate of winter and all other crops of May/June;
- Final data publication in the form of a Statistical Yearbook in December.

5. Recommendations

The system is not working properly due to the conflicts underway priority and the denied to agriculture statistics. The staff could not reach the to sampled households in some places and in many others they were not allowed to collect the data properly.

Considering the importance of current agriculture statistics in planning and policymaking and its critical contribution in national economy the current approach to producing current agriculture statistics needs revision.

Many different crop modeling and seasonal forecast softwares like DSSAT and toolkits like CRAFTS developed by CCAFS and the remote sensing technology exist to help of agricultural statistics and the time is up to use them for the benefit of this sector.

By and large, the implementing agency is not involved in the process of indicator measurement. The MOAD and its department's main job is to implement agricultural plans and programs to raise the living standard of farmers and modernize farming practice rather than collection of statistics. But the use of timely indicators during the planning and monitoring phases is crucial. Thus the overall system of production of statistics, particularly economic statistics, needs to be revised or authority has to be given to organizations like the CBS, or the MOAD system may be provided with better equipment and trained human resources.

6. Conclusion

The current agricultural statistics are very important for planning and policy making in agriculture in estimating the nation's GDP. These statistics should be reliable, valid, and accurate in terms of time and quality and there must also be a system to produce these statistics in time with a high quality. If the implementing agencies are given the authority to measure outputs, this can lead to biased outcomes. To overcome these problems scientific tools must be used in crop modeling and monitoring; remote sensing has to be used in; and authority should be given to independent agencies such as the CBS for the production of statistical data including current agricultural statistics.

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