

## **Chapter 2**

### **Census of Manufacturing Establishments 2006/2007**

#### **Introduction:**

The Census of Manufacturing Establishments (CME) is a regular exercise to collect, manage and disseminate data on the manufacturing sector of Nepal. The CME is carried out every five years. The CME-2006/07 was the ninth in the series of CMEs carried out in Nepal. The census covers all manufacturing establishments located within the geographic boundary of Nepal engaging 10 or more persons. The CME is carried out by the establishment census and survey section of the Central Bureau of Statistics, the national apex body responsible for collection management and dissemination of statistical information in the country.

Although the CME has become a regular feature in the work of the CBS, but each CME is a massive exercise for the section and the bureau with numerous challenges. The unique challenge in executing the ninth CME was that it was carried out at the time of great turmoil especially in the Terai region where bulk of the industrial units of the country are located. The frequent strikes and closures called by the various Terai groups after the end of the decade long insurgency created nightmarish situation for the enumerators and the supervisors working in the field.

The reference period for the census was the fiscal year 2006/2007, (2063/2064) or from mid July 2006 to mid July 2007. The actual enumeration work for the census was carried out during the period from October 2007 to May 2008 . But the census work started much earlier. Various works carried out in the course of the ninth CME are described this chapter .

#### **Objectives:**

The overall objective of any census is to bridge the data gap and reveal the changes taking place in the specific sector. The specific objective put before the CME 2006/07 were as follows:

- a) Collect statistics on structure of the existing manufacturing establishments and produce them by NSIC classification;
- b) Produce information on structure of the output and input of manufacturing under the CPC classification
- c) Produce statistics on manufacturing sector at different territorial levels
- d) Collect and produce statistics on employment in the manufacturing establishments
- e) Produce statistics on legal status, ownership, raw materials, energy use, other costs incurred, sales, stock of raw materials and finished products etc
- f) Derive and publish information on input and output of the manufacturing establishments
- g) Obtain information on efforts by establishments on mitigation of adverse environmental impacts
- h) Identify problems faced by the manufacturing establishments from raw material procurement to marketing of finished products

### **Plan and Budget**

In order to meet the above mentioned objectives the bureau started the preparatory works for the CME more than 2 years before the actual enumeration. As a first step the section prepared a detailed plan and budget for the survey which was then discussed in the bureau as well as in the planning commission Secretariat. After due approval from the authorities it was included in the national budget. The census was carried out as a project of the government of Nepal.

### **Technical committee:**

Keeping with the tradition of the earlier censuses, a technical committee was formed. The committee headed by the Director General of the CBS included representatives of National planning Commission, the Department of Industry, Department of Cottage and Small Industry, Federation of Nepalese Chambers of commerce and Industry as well as chiefs of other sections of the CBS. The Technical committee was meant to provide the overall guidance to the section in implementing the census work. The committee was consulted in all phase of implementation of the census works. The committee members provided valuable suggestions in finalizing the questionnaire, manual for the enumerators the training program, the data collection procedures, data quality control. . The questionnaire, census procedures

and the results were discussed in great length at the occasional meetings of the committee. The section chief acted as the member secretary of the committee. The technical committee extended significant help not only in deciding the technical aspects but also helped in managing the census. The involvement of the technical committee also helped disseminating the information about the census among the potential informants or providers of information.

**Personnel Involved:**

The entire census work, including planning, questionnaire design, manual preparation, enumeration, data entry and processing, publication and dissemination of results were carried out by the staff members of the bureau. The data collection or enumeration work was done by the personnel from the branch statistical offices located in 33 districts with support from personnel from the bureau. The supervision and quality control work was carried out by the staff members of the Establishment census and survey section. They were helped by officers and others staff members of other section. The data entry work was carried out by the employees of the section itself. The sole involvement of personnel from the bureau helped to execute or implement the census without much hiccups. It also helped to ensure quality as the personnel involved had considerable experience in conducting similar exercises in the past.

**Census frame:**

The directory of the previous census served the base frame of the census. The enumerators were asked to visit these enterprises along with other potential enterprise. In order to update the frame, the branch statistical offices were asked to update the frame by contacting the local government offices. When the enumerators visited the concerned enterprises, they were asked to collect the actual name, address, the contact telephone number, name of the contact person (who would be instrumental in providing the required information). The staff members of the branch statistical offices and those from the bureau visited all possible organizations and agencies which would have and could have the information about the enterprises. They initially contacted district cottage and small industry offices, offices of local governments (district development committee and municipalities, ward offices of municipalities, Village development committees etc.

**Questionnaire and manual:**

As the census is sort of a continual exercise and has to be internationally comparative, the items of data collection remain more or less same. The questionnaire for the census was based mostly on the questionnaire of the previous census. Special care was taken to modify or change the words which had created some misunderstanding in the previous censuses. Special care was taken to keep the language simple and understandable to everyone. The challenge in developing the questionnaire is to avoid terms which could have different meanings to different people. After discussion in the technical committee, a new item of enquiry on environment was included in the questionnaire. The environment related enquiry included information on recycling being made by the establishment concerned and other expenses and investment being made on protection of environment. The ownership information also included a new option for cooperative owned establishments. Similarly a few other questions were modified. The modification was for ensuring conformity in understanding by others. Along with the questionnaire, a manual was also prepared. The manual meant to help the enumerators and supervisors to correctly understand the questionnaire and execute the process of the census. The manual explains the questions and provides the understanding on what exactly is being sought on each point in the questionnaire.

Questionnaire was designed for collection of data from manufacturing establishments. The schedule was organized into 17 blocks. The format of the schedule is placed as Appendix of the report. The items of information collected through different blocks of the schedule included the following:

1. Introduction of manufacturing establishment
2. Legal status
3. Type of ownership
4. Main Products Major manufacturing activities
5. Employment particulars
6. Purchase of fuel, water and electricity
7. Receipts from sale of and cost of industrial services.
8. Cost of raw materials purchased
9. Details of production and sale of goods
10. Value of stock (inventories)

11. cost of non-industrial service purchased
12. Indirect tax
13. Receipts from non-industrial service
14. Details of fixed assets
15. Capacity utilization
16. Investment and cost of environment protection
17. Problems faced by manufacturing establishments.

### **Training:**

In order to ensure the consistency and quality, effort was made to train all personnel to be involved in the census procedures. Care was taken to train the supervisors and the enumerators. Special training programs were organized in the place namely Nepalgunj, Banke; Bharatpur, Chitwan and Itahari, Sunsari. in West, Central and Eastern Nepal. The officers and enumerators from the region joined the training program. The personnel from the section were involved as trainers. The officers, supervisors and enumerators from the branch statistical offices were the trainee of the programs. The training of the officers who were meant to supervise and control the process and the enumerators were trained separately. In order to minimize costs, the training programs were conducted in the same venue one after another.

### **Pilot survey:**

Prior to the actual census a pilot survey was carried out. In the pilot survey, the questionnaires were pre-tested. The pilot survey of the manufacturing establishments was essentially a test of questionnaires to be used in the Census of Manufacturing Establishments (CME) to be held next year (later part of 2006 and early part of 2007). The most important aspect of pilot survey was that it provides a bundle of information about the key variables in the field of industrial statistics prior to the census, which allows the CBS to prepare itself to face the problems which could be encountered during the census. It also provides the basis for estimating non-response. But this type of pilot survey is the first one. This pilot survey was conducted in three districts located in the three ecological regions of the country. From mountain region Rasuwa, from hilly region, Surkhet and from Terai region, Jhapa were covered in the survey. These three districts are located in the east, west and central Nepal. The pilot survey helped the personnel from the section to gain experience and feel the pulse

of the potential problems that may be encountered during the census. The pilot survey was a very intensive exercise for the section in preparation for the census.

### **Awareness and Publicity:**

The census is not merely an exercise conducted by statisticians. The success of the census depends on the understanding and active cooperation from the key informants managers and owners of the establishment and the public at large. So awareness creation and dissemination of information has been the key part of the census. Realizing that the informants need to clearly understand the importance of the exercise the bureau has been working with the industry organizations. The inclusion of the representative of the Federation of Nepalese Chambers of Commerce and Industry and its member organization were part of the awareness creation exercise. The personnel from the section visited industry organizations and chambers whenever possible to seek the cooperation in establishing the direct linkage with the establishments. A number of advertisements were designed and brought out before the public. were prepared. The ads were brought out using the print media as well as the electronic media. The reason behind such ads was to create awareness and also prepare the establishments for visit by the enumerators. While choosing the media extra care was taken to select those which would go to the potential informants. Electronic (Radio) as well as print media were used to urge the entrepreneurs and managers to provide the required information.

### **Data Collection:**

The actual data collection exercise was the most important phase in the census. The reference period (the period for which the data was collected) was the Nepali fiscal year 2006/07 which starts and ends in mid July. The actual enumeration work for the census was carried out during the period from October 2007 to May 2008. It was a massive exercise involving the visits of enumerators to the concerned establishments. A single visit was always insufficient. At the best, if the procedure went as per the ideal plan, at the first visit, the enumerators established contact with the concerned individual, handed over the questionnaire and explained it. At a mutually agreed date, the enumerators once again visited the concerned establishment and collected the filled questionnaire or filled it themselves in presence of the concerned informants. In reality, data collection is much more difficult. It almost always involved a number of telephonic contacts and more than two visits by the enumerators. The most obvious difficulty was to meet the concerned individual who had the information and

was authorized to provide so. In most cases with family owned establishments, nobody apart from the owner himself or herself were not ready to give the information. To establish direct contact with the owner were difficult. The repeated calls not only from enumerators but also from supervisors and even **head of the section (project manager)** were required. In case the location of the establishment and the head office of the owner were different, it was found the accounts were maintained at the head office. So visit to both places were required. In many cases, continued persuasion from the bureau was required. The attitude at the first encounters were often hostile. The owners often looked at the personnel from the bureau as nuisance for their operation and lashed out their grievances perceived shortcomings of the government on the enumerators. The data collection exercise was going on when the terai movement was on its peak. The enumerators and supervisors faced various difficulties in visiting the establishments on the planned date. It was the experience of persuasion that the enumerators and supervisors had had that helped to complete the data collection exercise in time.

The items of information were collected either from oral response on questions put by the enumerators from the persons concerned from books of accounts of the establishments. In most cases the providers of the information referred to the book while responding to the questions. In many cases, the establishment themselves filled the form handed it over to the enumerators.

### **Data entry and processing.**

The filled questionnaire collected by the branch statistical offices was brought to the bureau in Kathmandu. The coding and processing work was done by the staff members of the section itself. The coding involved putting the code of the district (where the establishment is located, putting the NSIC code (the industrial activity, the establishment was involved in) and the CPC code. The coding of inputs and outputs using the central product code (CPC) was done for the first time in this census. Data entry was done using a special program developed for this purpose using the software package “CS Pro”. The data checking, tabulation and summarization was done using the statistical software package “STATA”. The section tried its best to assure the accuracy of data. The filled questionnaire brought by the enumerators was initially checked by the supervisors in the district itself. When some doubt

occurred the supervisors contacted the concerned establishment and ascertained the true information. The use of the statistical package “STATA” helped to find the stray figures and ascertain the correctness of the information collected. In case of doubt, telephonic enquiries were made from the section itself.

### **Quality control:**

In the census the quality control was taken not as a one stop effort but as a continuous exercise carried out during the entire process of the census. The process employed in the planning, training, data collection, supervision, data entry and processing were geared towards producing the quality /actual data. The checking was done in many phases. In ensuring the quality, the main challenges were : design the questions so that the enumerators and the respondents understand it properly, ensure that the respondents provide the correct or true answer to the questions posed in the questionnaire, no mistake is made while making the data entry and coding, the data are properly tabulated and summarized. The training, the manual and language of the questionnaire itself were the tools applied in getting the proper understanding of the questionnaire. The checks by the supervisors and data consistency check at the time of entry and tabulation were used to assure the quality in response. The checking by the supervisors and the section chief as well as the discussion of the summary findings in the technical committee was employed to assure quality processing.

### **Main Results**

The CME-2006/07 reveals that there has been 7.2 percentage increase in total number of operating establishments in comparison to the previous census. The number of manufacturing establishments involved in grain milling, making of carpets & rugs, bakery, sugar, articles of cement, lime & plaster saw milling & planing of wood, pharmaceutical & medicinal chemicals, structural metal products and furniture, cutting, shaping & finishing of stones, publishing of books & other publications, have increased.

At the same time, number of manufacturing establishments making garments, knitted & crocheted fabrics & articles, clay and ceramic products (brick kilns), footwear and plastic products have decreased in comparison to last census.

Although the number of operating establishments has increased, the number of persons engaged has declined by 7.5 percentages. This is mostly due to decline in the garment and brick kiln establishments witnessed in the last few years. However, the census output and



value-added has increased during the period. In this CME, the information on the investment made by the manufacturing establishments on environmental protection was collected for the first time.

The main indicator table (table No. 1) has also been made internationally comparative. . Earlier the cost incurred for non Industrial services and the receipts from non industrial services were not included in the output table. Only census input, census output and census value addition were given. The value of Non Industrial services both receipts and expenses were given only in separate table. But from this census total value of input (Census Input plus costs of Non Industrial services ) and total value of output (Census output plus receipts from non industrial services) are given in the main table. So the total value addition in the table reflects the value addition by the establishments covered by the census where as the earlier figure of value addition was the value addition made by them from the industrial or manufacturing activity alone. The receipts from non industrial services includes receipts from services like rent, transportation, communication, agent commission, legal service advice, rebate, subsidy etc. Similarly the expenses include expenses on items like rent, advertisement, transportation, communication, insurance, cost of use of intellectual property, legal services, per diem allowances etc.

The summary findings of the CME-2006/07 are:

Average number of employees per establishment	49.3
Average output input ratio	1.45
Total number of establishments	3445
Total number of person engaged	177496
Total number of employees	169840
Total wages, salaries and facilities provided to employees ('000 Rs)	8035672
Value of fixed assets at the end of the reference period ('000 Rs.)	72315054
Census input during the reference period ('000 Rs.)	107630760
Census output during the reference period ('000 Rs.)	155699242
Census value added of the reference period in ('000 Rs.)	48068482

Lesson learnt

In the CME 2006/07, the report presented the major indicators at national and district levels by four digit and two digit industry groups respectively. Some of the breakdown of major indicators were presented at both the national and district levels whereas others were presented only at the national level.