

Government of Pakistan  
Statistics Division

**MANAGING STATISTICAL DEVELOPMENT  
AND  
INFORMATION TECHNOLOGY  
FOR  
NATIONAL STATISTICAL OFFICES**

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## **Introduction**

Pakistan inherited a weak statistical system on the eve of its independence in 1947. The situation was so fluid that one had little idea of total population, size of Labour Force, national income and other essential statistics for effective planning. There was need to put in place a sound statistical system to collect, compile and disseminate reliable statistics for future planning. With this background, Central Statistical Office (CSO) was set up as an attached Department of Economic Affairs Division in 1950.

Since then, statistical system in Pakistan has been reviewed from time to time both by local and foreign consultants. In 1972, on the recommendations of World Bank Mission, CSO was upgraded to a full-fledged Statistics Division. In 1978, Population Census Organization (PCO) part of Ministry of Interior and Agricultural Census Organization (ACO) part of Ministry of Food & Agriculture were also brought under Statistics Division. In 1981 Statistics Division was re-organized and its Technical Wing (the then CSO) was converted into Federal Bureau of Statistics (FBS) as its attached department. Later on Pakistan Institute of Statistical Training and Research was also merged with FBS as its Training Wing

## **Structure of Statistical System in Pakistan**

A sound statistical base is imperative for formulation of national policies, development plans, promotion of public welfare schemes, lay down infrastructure for economic growth and taking appropriate decisions. As such, the responsibility to create a sound statistical base lies with the national statistical organizations.

The present statistical system of Pakistan is a combination of both centralized and decentralized systems. At Federal level, this set-up comprises Statistics Division and its three attached departments viz; FBS, ACO and PCO. At provincial level, Bureaus of Statistics are functioning as attached departments of respective Planning and Development Departments. On the decentralized side, statistical cells, both at federal and provincial levels are also functioning in different ministries/ departments to cope with their specific statistical needs. The Secretary, Statistics Division being the federal statistical authority implements statistical policies and plans in the country through its three attached departments and Provincial Bureaus of Statistics.

## **Federal Bureau of Statistics**

FBS is the main department under statistics Division responsible to collect, compile and disseminate data on all socio-economic sectors of the country except Population / Housing and Agricultural Censuses. For collection of data field organization of FBS consists of 34 Regional and Field Offices, which are spread all over the country. The Training Institute, located at Islamabad, is responsible to impart on the job training to statistical professionals of Statistics Division and its attached departments and other federal / provincial departments. Three Data Processing (DP) Centers of FBS are also functioning at Islamabad, Karachi and Lahore to meet the data processing requirements of FBS and two sister organizations i.e. PCO and ACO.

### **Population Census Organization**

PCO is responsible to conduct decennial population / housing Census in the country and to release results in the form of census reports at national, provincial, districts and village levels. During intercensal period, detailed analysis of data is undertaken to assess its limitations, problems, constraints and accuracy. The analysis of data is presented in the shape of supplementary / special reports / monographs. At present PCO is planning to conduct next population / housing census in 2008.

### **Agricultural Census Organization**

ACO is mainly responsible for conducting decennial Censuses on Agriculture, Livestock & Agricultural Machinery and quinquennial Mouza Census. Following are the main jobs undertaken by the ACO.

### **Use of Information Technology (IT)**

For accomplishment of the tasks assigned to FBS, it was felt from the very beginning to have a sound data processing facility within the department. For this purpose, electro mechanical equipment was used for data processing till the installation of mainframe Computer System IBM-360/30 at Karachi in 1969. Since then, FBS has been using different type of Computer Systems for data processing. At present, FBS is actively engaged in modernization of its computing facilities both in-terms of hardware / software and human resource development.

FBS has three DP Centers located at Islamabad, Karachi and Lahore. These Centres have Local Area Networks for data entry and processing of data on various censuses, surveys and time series. These are connected through Internet facilities for exchange of data, e-mail messages, etc. FBS has developed in-house expertise in software development in MS SQL Server system and Visual Basic under Windows Operating System for data entry and Oracle, COBOL on UNIX based RISC Servers for data validation, cleaning, tabulation and databases.

Initially, computers were located within DP Centres. But with the introduction of Personal Computers (PCs), statistical sections and administration have also become the significant users of PCs. Now al-most every section of the organization has PCs on their desks. PCs have also been provided to Regional / Field offices to enhance the use of IT at the lowest level. Moreover, National Accounts Section has its own computer network for computation of National Accounts of the country. Besides Training Wing has computer lab for imparting training to in-service employees on various fields of Statistics and IT. Foreign Trade Statistics section is using IT equipment for on-line downloading of data of imports / exports from CBR system. Price Statistics Section is also using IT equipment for computation of price statistics.

The data of population / housing census 1998 was transferred from source documents (OMR Forms) to computer readable format using OMR machines. The CONCOR (Consistency Checking & Correction) Package was used for data validation / cleaning and CENTS (Census Tabulation System) Package for tabulation of data of Population / Housing census, 1998. The brief history of computer systems used for data processing over the years is as under:

| <b>Name of Computer</b> | <b>Year of Installation</b> | <b>Status</b>  |
|-------------------------|-----------------------------|----------------|
| IBM 360/30              | 1969                        | Decommissioned |
| IBM 370/148             | 1981                        | Decommissioned |
| IBM 36                  | 1984                        | Decommissioned |
| Digital VAX 6310        | 1990                        | Decommissioned |
| RISC Servers            | 2000/2002/2003              | Operational    |

## **Existing Data Processing System**

Enumerators collect data from field on paper based questionnaires. After preliminary checking / verification of filled in information, questionnaires are dispatched by Regional / Field offices to respective subject matter sections located at Islamabad, Lahore and Karachi. The questionnaires are edited and coded in statistical sections by their work force. After thorough checking, editing and coding, questionnaires are sent to DP Centers for data processing. DP Centers key-enter data from questionnaires and prepare error listing as per given instructions of statistical sections. The error listing along with questionnaires is sent to concerned statistical section for checking of errors marked through Application Software developed by computer personnel. After necessary corrections, error list is returned to DP Center, where errors are updated. This process continues till such time the whole data set becomes error free. As soon as data becomes error free, tables / reports are produced and supplied to concerned statistical sections for report writing. The data of population / housing census 1998 was validated / cleaned without producing any error lists. However, imputation / correction percentage was produced at Block level for each variable to review that it is within permitted limits. The processed data is saved for future use in the form of files / databases.

## **Use of IT by Regional / Field Offices**

Prices of various items are collected on weekly and monthly basis. The main areas of price collection are SPI, CPI, WPI, Prices of Construction Material, House Rent and Producer Price Index. FBS has now provided PCs and related computer equipment to its 34 Regional / Field offices. The data entry of Price statistics (SPI, CPI, and WPI) has been started in Regional / Field offices. The prices key-entered at Regional / Field offices are being e-mailed to Prices Statistics Section at Karachi for further processing.

## **Dissemination of Data**

Statistics Division in collaboration with its attached departments is disseminating statistical data to various users and national / international agencies such as UN Statistics Division, UNESCAP, IMF, ILO, Asian Development Bank, the Islamic Development Bank, etc in the form of survey reports, electronic media / website [www.statpak.gov.pk](http://www.statpak.gov.pk), press briefings, etc. Besides publications are also made available at Sales Counters. Following are the main areas on which frequent demands

for supply of micro data and other information are received from national / international data users:

- ◆ Household Income & Expenditure Survey
- ◆ Foreign Trade Statistics
- ◆ Labour Force Survey
- ◆ Pakistan Social and Living Standard Measurement Survey
- ◆ Price Statistics (SPI, CPI, WPI)
- ◆ Pakistan Demographic Survey
- ◆ Census of Manufacturing Industries
- ◆ National Education Census
- ◆ Social Statistics
- ◆ Agricultural Census
- ◆ Livestock Census
- ◆ Agricultural Machinery Census
- ◆ Population / Housing Census
- ◆ Economic Census

### **Plans in Action**

Training Institute has been made more effective. A large number of courses on Sampling Techniques, GIS, Statistical Methods, issues of Economic Statistics, Computer Software viz STATA, SPSS and Excel etc. are being conducted every year with the assistance of International Donors Agencies. Moreover, World Bank is funding for Capacity Building Program to enhance the skills of young statisticians. The statisticians are being sent for post graduation in top universities of the world. The German Government is also funding for Improvement of Social and Economic Data, National Accounts, Price Indices through on the job trainings and provision of computers, motorcycles, etc. to Statistical sections including 34 Regional / Field offices. Statistics Division has close coordination with international donors / institutions viz IMF, GTZ, European Union, USAID, ILO, DFID, CIDA, UNICEF etc. for their assistance in conducting courses for statisticians, holding of surveys and adoption of modern methodologies for statistical surveys / censuses.

### **Future Plans**

Although Statistics Division is meeting data needs of the government and other national / international users but need is always there to improve existing statistical system in the country to make it more responsive to meet national and international data

requirements. Thus restructuring of Statistical System is being actively persuaded in the Statistics Division to:

- ◆ acquire user-friendly software packages for development of Application Software.
- ◆ enhance use of IT in data capturing, compilation research / analysis and dissemination of information
- ◆ develop efficient Wide Area Network for on-line or otherwise quick transfer of data from Field organization to DP Centers.
- ◆ improve National Accounts Systems by computing quarterly national accounts.
- ◆ enhance role of Training Wing by converting it into Training Institute.
- ◆ adopt efficient tools for capturing data from the field in shortest possible time.
- ◆ capacity building, career planning of professional staff
- ◆ economies the resource utilization by pooling of human and material resources
- ◆ improve coordination among different data collecting agencies and users.