

Block

6

DATA BASE OF INDIAN ECONOMY

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October, 2015

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ISBN-978-81-266-

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Further information on Indira Gandhi National Open University courses may be obtained from the University's office at Maidan Garhi, New Delhi-110 068.

Printed and published on behalf of the Indira Gandhi National Open University, New Delhi by the Director, School of Social Sciences.

Laser Typeset by : Tessa Media & Computers, C-206, A.F.E.-II, Okhla, New Delhi

Printed at :

BLOCK 6 DATA BASE OF INDIAN ECONOMY

For undertaking any meaningful research in terms of situational assessment, testing of models, development of theory, evolving economic policy, assessing the impact of such policy etc., data is crucial. Data on different variables is thus an essential input for assessment and analysis of economic situations. The availability or otherwise of data, therefore, determines the scope of analysis. The reliability of the conclusions arrived at also depends on the availability and veracity of data. Hence, researcher's knowledge about the availability of data is important for conducting a meaningful research. Keeping in view that a student of economics at postgraduate level is expected to know the available databases, the present block deals with the different databases of Indian Economy.

The block comprises of 4 units. **Unit 21** deals with the data available on major macro variables relating to the economy – national income, saving and investment, etc. **Unit 22** throws light on the kind of agricultural and industrial databases. **Unit 23** deals with data on trade and finance.

Unit 24 discusses the availability of data on other social sectors like employment and unemployment, education, health, shelter and amenities, environment, quality of life etc. These four units lay particular emphasis on the different concepts used in data collection including the agencies involved in the compilation of data.



Abbreviations Used in the Block

ADR	- American Deposit Receipt
AHSD	- Animal Husbandry Statistics Division
AIES	- All India Educational Survey
ANM	- Auxiliary Nurse-Midwife
ASI	- Annual Survey of Industries
ASDR	- Age – Specific Death Rate
ASG	- Agricultural Statistics at a Glance
BAHS	- Basic Animal Husbandry Statistics
BC	- Backward Classes
BD	- Budgetary Deficit
BMI	- Body Mass Index
BOD	- Biological Oxygen Demand
BoP	- Balance of Payments
BR	- Birth Rate
CACP	- Commission on Agricultural Costs and Prices
CAD	- Current Account Deficit
CAS	- Current Account Surplus
CB	- Commodity Boards
CBHI	- Central Bureau of Health Intelligence
CCPS	- Cumulative Convertible Preference Shares
cfc	- Consumption of Fixed Capital (depreciation)
CGHS	- Central Government Health Scheme
CGWB	- Central Ground Water Board
CHC	- Community Health Centre
CIF	- Cost, Insurance and Freight
CIS	- Commonwealth of Independent States
CMI	- Census of Manufacturing Industries
CMIE (EIS)	- Centre for Monitoring Indian Economy (Economic Intelligence Services)
CPI-AL	- Consumer Price Index – Agricultural labour
CPI-IW	- Consumer Price Index – Industrial Workers
CPI-UNME	- Consumer Price Index – Urban Non-Manual Employees
CSO	- Central Statistical Organisation
CWC	- Central Water Commission
CWS	- Central Weekly Status
DCI	- Dental Council of India
DDP	- District Domestic Product
DE	- Directory Establishments
DEs	- Directorates of Employment
DESMOA	- Directorate of Economics & Statistics, Ministry of Agriculture

DES(s)	- Directorate(s) of Economics & Statistics
DGE&T	- Directorate General of Employment & Training
DIPP	- Department of Industrial Policy and Promotion
DR	- Death Rate
EBs	- Electricity Boards
EMI	- Employment Market Information
EPC	- Export Promotion Council
EPFO	- Employees Provident Fund Organisation
EPW	- Economic and Political Weekly
EPWRF	- Economic and Political Weekly Research Foundation
ESI Act	- Employees' State Insurance Act
ESIC	- Employees State Insurance Corporation
EXIM Bank	- Export Import Bank
FDI	- Foreign Direct Investment
FIs	- Financial Institutions
FIIIs	- Foreign Institutions Investors
FIPB	- Foreign Investments Promotion Board
FISIM	- Financial Intermediation Services Indirectly Measured
f.o.b.	- free on board
FRG	- Federal Republic of Germany
FSI	- Forest Survey of India
FSS	- Farmers' Service Societies
GDI	- Gender Development Index
GDCF	- Gross Domestic Capital Formation
GDFCF	- Gross Domestic Fixed Capital Formation
GDI	- Gender Development Index
GDP	- Gross Domestic Product
GDR	- Global Deposit Receipt
GDS	- Gross Domestic Saving
GFCE	- Government Final Consumption Expenditure
GFD	- Gross Fiscal Deficit
GNP	- Gross Primary Deficit
GPD	- Gross Primary Deficit
GSDP	- Gross State Domestic Product
GTT	- Gross Terms of Trade
HA	- Health Assistant
HDFC	- Housing Development Finance Corporation
HDI	- Human Development Index
IAMR	- Institute of Applied Manpower Research
IBM	- Indian Bureau of Mines
ICICI	- Industrial Credit and Investment Bank of India
ICSSR	- Indian Council of Social Science Research

IDBI	- Industrial Development Bank of India
IIP	- Index of Industrial Production
IIPS	- International Institute for Population Sciences
IMF	- International Monetary Fund
IMR	- Infant Mortality Rate
I-O TT	- Input Output Transaction Table
IPO	- Initial Public Offering
IPP	- Index of Prices Paid
IPR	- Index of Prices Received
ISCED	- International Standard Classification of Education
ISCO	- International Standard Classification of Occupations
ISIC	- International Standard Industrial Classification
ISIC – Rev. 3	- International Standard Industrial Classification – Revision 3
ISM	- Indian Systems of Medicine
ITC (HS)	- Indian Trade Classification (based on Harmonised Commodity Description and Coding System)
ITC – Rev. 2	- Indian Trade Classification – Revision 2
ITES	- Information Technology Enabled Services
ITT	- Income Terms of Trade
KVIC	- <i>Khadi</i> and Village Industries Commission
LAMPS	- Large – sized <i>Adivasi</i> Multi-Purpose Societies
LHV	- Lady Health Visitor
LIC	- Life Insurance Corporation of India
MCI	- Medical Council of India
MF	- Mutual Fund
MHA	- Male Health Assistant
MHRD	- Ministry of Human Resource Development
MI	- Minor Irrigation
MMR	- Maternal Mortality Rate
MOEF	- Ministry of Environment and Forests
MoLE	- Ministry of Labour & Employment
MoSPI	- Ministry of Statistics & Programme Implementation
MPCE	- Monthly Percapita Consumption Expenditure
MSP	- Minimum Support Price
NABARD	- National Bank for Agricultural and Rural Development
NABS	- National Advisory Board on Statistics
NAS	- National Accounts Statistics
NBFC	- Non-Banking Finance Companies
NBNFC	- Non-Banking Non-Finance Companies
NCERT	- National Council for Educational Research and Training

NCO	- National Classification of Occupations
NCI	- Nursing Council of India
NCS	- Net Capital Stock
NDC	- National Development Council
NDE	- Non-Directory Establishments
NDCF	- Net Domestic Capital Formation
NDFCF	- Net Domestic Fixed Capital Formation
NDP	- Net Domestic Product
NDS	- Net Domestic Saving
NEER	- Nominal Effective Exchange Rate
NFCS	- Net Fixed Capital Stock
NFD	- Net Fiscal Deficit
NFHS	- National Family Health Survey
NFE	- Non-Formal Education
NHB	- National Housing Bank
NIC	- National Industrial Classification
NNP	- Net National Product
NNR	- Nano-Natal Rate
NPA	- Non-Performing Assets
NPD	- Net Primary Deficit
NPISH	- Non-Profit Institutions Serving Households
NRI	- Non-Resident Indian
NSDP	- Net State Domestic Product
NSE	- National Stock Exchange
NSRC	- National Statistical Commission Report
NSSO	- National Sample Survey Organisation
NTMIS	- National Technical Manpower Information System
NTT	- Net Terms of Trade
OAE	- Own Account Enterprises
OECD	- Organisation for Economic Co-operation and Development
OPEC	- Oil and Petroleum Exporting Countries
PACS	- Primary Agricultural Credit Society
PCI	- Pharmacy Council of India
PFCE	- Private Final Consumption Expenditure
PHC	- Public Health Centre
PHSC	- Public Health Sub-Centre
PISS	- Priced Information Service Systems
PLR	- Prime Lending Rate
PNR	- Post – Natal Rate
PPF	- Public Provident Fund
PRD	- Primary Revenue Deficit

QI	- Quantum Index
RAS	- Regional Accounts Statistics
RBI	- Reserve Bank of India
REC	- Rural Electrification Corporation
REER	- Real Effective Exchange Rate
RD	- Revenue Deficit
RGI	- Registrar General of India
RRBs	- Regional Rural Banks
RS	- Remote Sensing
SAS	- State Accounts Statistics
SCBs	- Scheduled Commercial Banks
SBR	- Still Birth Rate
SC & ST	- Scheduled Casts & Scheduled Tribes
SDDS	- Special Data Dissemination Standards
SDP	- State Domestic Product
SDR	- Special Drawing Rights
SEBI	- Securities Exchange Board of India
SIA	- Secretariat for Industrial Approvals
SIC	- Standard Industrial Classification
SIDBI	- Small Industries Development Bank of India
SITC – Rev. 2	- Standard International Trade Classification – Revision 2
SLR	- Statutory Liquidity Ratio
SNA	- System of National Accounts
SPM	- Solid Particulate Matter
SRS	- Sample Registration Scheme
SSMI	- Sample Survey of Manufacturing Industries
UGC	- University Grants Commission
UN	- United Nations
UPS	- Usual Principal Status
UPSS	- Usual Principal and Subsidiary Status
UTI	- Unit Trust of India
UVI	- Unit Value Index
VRC	- Vocational Rehabilitation Centre
WC Act	- Workmen’s Compensation Act
WPI	- Wholesale Price Index
WPR	- Worker-Population Ratio
WTO	- World Trade Organisation

UNIT 21 MACRO-VARIABLE DATA: NATIONAL INCOME SAVING AND INVESTMENT

Structure

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- 21.1 Introduction
- 21.2 The Indian Statistical System
- 21.3 National Income and Related Macro Economic Aggregates
 - 21.3.1 System of National Accounts (SNA)
 - 21.3.2 Estimates of National Income and Related Macroeconomic Aggregates
 - 21.3.3 The Input-Output Table
 - 21.3.4 Regional Accounts – Estimates of State Income and Related Aggregates
 - 21.3.5 Regional Accounts – Estimates of District Income
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- 21.4 Saving
- 21.5 Investment
- 21.6 Let Us Sum Up
- 21.7 Exercises
- 21.8 Some Useful Books
- 21.9 Answers or Hints to Check Your Progress Exercises

21.0 OBJECTIVES

After going through this Unit, you will be able to:

- know the various approaches followed by the Indian statistical system in generating data on various economic and social phenomena;
- explain the SNA (System of National Accounts) methodology of data compilation;
- identify the various aggregates on which estimates are made by the National Accounts System;
- compare the interrelationship among different sectors of the economy through input-output transaction table (I-OTT) compiled by CSO; and
- describe the data on National Income, Saving, Investment and other related macro economic variable and the estimates of the state income which enable analysis of various aspects of economy.

21.1 INTRODUCTION

You would soon be a professional economist and would possibly be engaged in research or would function as an economic analyst or adviser in a Government or non-Government organization. As a professional economist, you will have to analyse situations and arrive at conclusions about them or develop solutions

for further action to tackle such situations. You will, for this purpose, identify the variables that, in your opinion, shape or affect the problem at hand, incorporate these in a suitably chosen model, test the efficacy of the model in reflecting the situation under examination and proceed further with the analysis. A basic input for such activity is data on the variables incorporated in the model. The availability of data *relevant* to the proposed analysis enhances or restricts the scope of your analysis and the reliability of the conclusions arrived at on the basis of the analysis. Indeed, it might even restrict the kind of variables and model you would like to use in your analysis, unless you want to conduct a survey yourself to collect the data that are not available. Your technical and professional equipment as an economist is, therefore, incomplete without knowledge of where data on the variables in question are available and how good they are for the purpose of the analysis at hand. This knowledge should naturally cover the entire data base of the Indian economy since an economist's work can cover any part or the whole of the Indian economy.

We shall look at the data base of the Indian economy in this Block. This Unit deals with data available on National Income, Saving and Investment – the major macro variables relating to the economy and associated macroeconomic aggregates. Agricultural and Industrial data, data relating to the Social Sector, Trade and Finance will be discussed in the subsequent units of this block.

Let us begin by taking a look at the Indian statistical system.

21.2 THE INDIAN STATISTICAL SYSTEM

The Indian Statistical System generates data on a variety of economic and social phenomena, essentially through six approaches. First, Central Acts like the Census Act, 1948; and the Collection of Statistics Act, 2008, etc. enable the Government agencies to conduct large-scale sample surveys for collection of data at regular intervals. Second, statutory returns prescribed under several other Acts like the Factories Act, 1948 the Companies Act, 1956, the Reserve Bank of India Act, 1953; the Registration of Births and Deaths Act, 1969 and the implementation of these Acts generate data on matters not covered by the surveys. Third, data collected by individual Ministries, Departments and organizations of the Central and State Governments as part of their specific functions reflect the emerging situation in different sectors and sub-sectors of the economy and administrative divisions of the country. Fourth, the administrative reports of these organizations supplement such data. Next, information derived from the data flows mentioned above, like the **National Accounts Statistics (NAS)**, index numbers of prices and production and indices like the Human Development Index and Gender Development Index provide readily usable inputs for research and policy and evaluation of the impact of policies and programmes of development in terms of the health of the economy and the well-being of the society. Lastly, a large number of surveys and research studies conducted by various institutions, public and private, on a variety of subjects constitute another flow of data and information.

The Ministry of Statistics and Programme Implementation of the Government of India is the apex body in the official statistical system of the country. The Ministry is headed by the Chief Statistician of the country. The Ministry consists of the Central Statistics Office (CSO), the National Sample Survey Office (NSSO) and the Computer Centre (CC). The Directorates of Economics and Statistics function at the level of the State/UT Governments. The CSO

coordinates the statistical activities in the country, lays down and maintains statistical norms and standards and provides liaison with Central, State and International statistical agencies. There is also a National Statistical Commission (NSC), comprising of Chairman and Members, who are eminent economists and statisticians from research institutions, representatives of Central Ministries and Departments and the State Directorates of Economics and Statistics, to provide (i) guidance for an overall perspective for statistical development in the country, (ii) guidance to Government on policy issues, and (iii) ensure effective coordination of all statistical activities of the Government of India. CSO is the Secretariat of the NSC.

The CSO, as the Central Statistical Authority, is responsible for coordination of statistical activities in the country and for evolving and maintaining statistical standards. Mention should be made in this connection of three publications of CSO, namely, the Sources and Methods of National Accounts Statistics, the National Industrial Classification and the Consumer Price Index. The first two are *ad hoc* while the third a monthly one. The first one covers the methods and classification principles to be followed for preparation of the macro economic aggregates, the second one gives the classification principle to be followed for national and international comparability and the third one provides State/UT wise price indices.

Certain other agencies concerned with economic development also bring out publications that cover data relating to most of all the sectors of the economy at one place. These are **the Reserve Bank of India (RBI) Bulletin (monthly), the Financial Stability Report (including Trend and Progress of Banking in India), RBI's Handbook of Statistics on the Indian Economy and the website of the RBI, the pre-Budget Economic Survey and the Budget presented to Parliament** by the Finance Minister every year. **The Five-Year Plan documents of the Planning Commission of the Government of India used to make up yet another set of data sources that provides important data across sectors. The Human Development Report** was prepared by the Planning Commission **for the first time in the year 2001. This and similar reports prepared subsequently by many of the State Governments** for individual States and for district constituted another set of sources for data across sectors at the national, State, district and even sub-district levels. The **District Census Handbooks** published after successive population censuses by the Office of the **Registrar General of India (ORGI) and the Directorates of Census of different States and Union Territories** provide comprehensive information across sectors on individual districts, sub-districts, towns and villages. The ORGI, in the year 2014 has also launched a digital library of all census tables published since Census 1991 in their website www.censusindia.gov.in. These tables together provide a very useful time series data on demographic characteristics of the country and its States/ UTs. Most of the data and reports published by Government agencies are available in electronic format, that is, in DVDs/CDs and are accessible at the websites of the agencies concerned. In the year 2013, the Planning Commission has also set up a central web-based repository, namely, www.data.gov.in to bring published data of different Government agencies under one roof.

The Indian statistical system has also recently been reviewed so as to bring about improvements in it. A National Statistical Commission was appointed by the Government of India to examine critically the deficiencies of the existing statistical system from the point of view of timely availability, reliability and adequacy of data and to recommend measures to correct these deficiencies and

revamp the statistical system to generate reliable statistics for the purpose of policy and planning at different levels of Government. The Commission submitted its report to Government in September, 2001. **The Report of National Statistical Commission (2001)**, published by the **Ministry of Statistics and Programme Implementation (MoSPI)**, is itself a useful reference book on the database of the Indian economy. This can be viewed or downloaded from the website www.mospi.nic.in/nscr/hp.htm. Most of data available in Government websites can be downloaded free of cost, either directly or as a registered user. In most cases, this registration is free of charge. For example, one can make a free registration in the website of the MoSPI and with the username, freely download all the reports and tables published by different offices under the MoSPI. For the Office of the RGI, one can simply visit its website www.censusindia.gov.in click on the link digital library and download all the census tables published from 1991 census onwards.

There are also non-Government sources that publish these for the use of researchers and other data users (Certain private websites like www.indiastat.com provide India centric, sector specific and state specific data for the research fraternity, usually for a fee). The **Centre for Monitoring Indian Economy (CMIE), Mumbai** and its **Economic Intelligence Services (EIS)** provide detailed and up-to-date information on the Indian economy through a **Monthly Review of Indian Economy** and annual documents each covering a specific sector or subject in great detail. These publications bring together at one place not only data available with Government statistical agencies but also data collected by CMIE itself. The **Economic and Political Weekly Research Foundation (EPWRF), Mumbai** is another organization that publishes detailed time series data on a variety of subjects along with a description of related conceptual and methodological issues and quality of data, besides presenting statistics on specific areas in **subject-specific Special Issues of the Economic and Political Weekly**. The search for data by an analyst like you can well start from one or more of the comprehensive sources enumerated above and move on, as necessary, to the primary agency concerned with the specific area of your interest.

Data on any variable have to be classified suitably for facilitating analysis. And the classification system needs to be standardized when data on any variable are collected by several agencies and utilized by many in order to ensure meaningful collection of data and comparability of data across space and time. At the international level, different agencies of the United Nations, like, the United Nations Statistics Division (UNSD), the OECD, the International Labour Office (ILO), etc. prepares these classifications for cross-country comparison. For individual countries, these classification systems are recommended. The countries are advised to maintain full compatibility up to a certain level and then make additions/ alterations to suit the country specific needs. In India, usually, such classifications are expanded to suit the need of the country, while maintaining international comparability. Two important classificatory systems developed for use may be referred to here, as its utility cuts across sectors. One is the National Industrial Classification (NIC), developed by the Central Statistics Office (CSO) in consultation with all concerned. It groups the entire spectrum of economic activities by means of a five-digit code structure. NIC has been revised from time to time in keeping with changes in the structure and variety of economic activities over the years. A Standard Industrial Classification, 1962 (SIC 62) developed by CSO was being used in the Sixties until NIC 70 was introduced. This was replaced by NIC 1987, which in turn was replaced by NIC 98 in December 1998. The most

recent revision of the NIC series is NIC 2008. All the NIC classifications are based on the relevant UN International Standard Industrial Classification (ISIC). NIC 2008 was, for instance, based on ISIC- Revision 4. NIC 2008 has been developed and released for use in the place of NIC 04 in September, 2008. NIC 2008 classifies the whole range of economic activity into 21 Sections, 88 Divisions, 238 Groups, 403 Classes and 1,304 Sub-classes. NIC 2008 is comparable completely with ISIC-Rev.4 up to the four-digit level. The fifth digit (sub-class) inside each of the class (4th digit) takes care of the special features of the Indian economy. NIC is used for classifying data on variables like output, employment and income by economic activity. In each release of the NIC, concordance tables are made available to facilitate recasting of past data as per the new classification, to the extent possible.

The other classificatory system is the **National Classification of Occupations (NCO)**, developed by the **Directorate General of Employment & Training (DGE&T) of the Ministry of Labour & Employment**. **NCO 1958**, a five-digit code structure, was developed in the Fifties. This was revised to **NCO 1968**. This was in use till recently. This has now been replaced by **NCO 2004 (NCO04)**. The Indian NCOs have been based on the international occupational classification system developed by the International Labour Organisation (ILO) and revised from time to time. NCO 1968 was patterned on the **International Standard Classification of Occupations 1966 – ISCO 66 – of the ILO**. While revising ISCO 66 to prepare **ISCO 88**, ILO incorporated the concept of skill for effective performance in the relevant occupation, utilizing for the purpose the **International Standard Classification of Education (ISCED)**. **NCO 04 has followed the approach adopted in ISCO 88**. It takes note of the skill required for satisfactory performance in the relevant occupations and has a six-digit code structure. NCO 04 has 8 occupational divisions (the first digit of the code), 95 occupational groups (the second digit), 462 occupational families (the third digit) and 2484 occupations (the fifth and the sixth digits). NCO is useful for classification of the job seekers, the jobs and employment, thereby facilitating analysis of trends in the labour market and in the employment potential of the economy. Past data can be recast as per NCO 04 with the help of **concordance tables provided in NCO 04**.

A word of caution is necessary while using data assembled from sources other than one's own. Data extracted from printed publications or websites have to be checked for printing errors/errors that occur while data are being posted on the websites. A check of the row and column totals of the tables and other identity relations relevant to the data under reference in the tables should take care of such errors. More importantly, you should also look into aspects of the data, like the concepts, definitions and methodology adopted by the source-agency for collecting and compiling the data, coverage of data (like, whether data was collected from entire country or some specific areas, whether the sample drawn was based on a statistically reliable random sample or it was a purposive sample of a few selected locations, etc.), the methods used for collecting data, reliability and so on periodicity and timeliness in the availability of data, integrity (confidentiality), the data are firmly moored to what the data are actually supposed to reflect. These aspects are collectively referred to as "**metadata**". All these details are generally available in the publication containing the data or in a related publication of the agency publishing the data or in the relevant website of the agency.

It would sometimes be useful and instructive to judge the Indian situation in an international setting. Publications of the United Nations and its agencies as also

agencies like the International Monetary Fund (IMF) and the World Bank and regional agencies such as the Organisation for Economic Cooperation and Development (OECD)¹ provide data on different facets of the economies of the member countries including India along with information regarding comparability of country-wise data. The IMF has formulated a “**Special Data Dissemination Standards**” (SDDS) covering the real sector (national accounts, production index, price indices, etc.), Fiscal Sector, Financial Sector, External Sector and Socio-demographic data for different countries to facilitate transparency in the compilation and dissemination of data on important aspects of the economy of individual countries and cross-country comparison of such data. Countries like India who have accepted the SDDS provide to **IMF a National Summary Data Page** in respect of each of the areas and sub-areas listed in SDDS and metadata relating to such data, as per a Dissemination Format prescribed in SDDS. In addition, individual country agencies concerned disseminate an advance release calendar, which gives notice of the precise dates of release of data three months ahead of the date of release of the data, on the internet of the IMF’s Data Dissemination Bulletin Board (DSBB). Such information, as provided by any country covered by SDDS, can be accessed on the internet with the help of the Google search engine using the search parameter Special Data Dissemination Standards IMF. You can also visit the site of the United Nation’s Statistical Division databases at <http://unstats.un.org/unsd/databases.htm> to access data compiled by different UN agencies on a host of economic and social parameters.

Your capacity to utilize the vast amount of data available in the Indian Statistical System and examine critically the state of the society can be enhanced considerably by an intelligent combination of data across data domains. You have already come across some examples of such efforts – poverty ratios, concentration ratios for measuring the level of inequality, employment elasticity, labour productivity and capital productivity. (Unit 4 on Poverty and Inequality – Policy Implications and Unit 5 on Employment and Unemployment – Policy Implications in Block 1 of MEC-005 on Indian Economic Policy in your first year Course). Other examples are the Human Development Index and Gender Development Index (Units 3 and 4 in the same Block of MEC-005).

Check Your Progress 1

- 1) State the major functions of CSO.

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¹ India is not a member of OECD, which is an organization in which several countries in Europe are members.

- 2) Name any three web sources where you can get data for your research, free of cost.

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- 3) Which precautions should be taken care of while using data assembled from various sources?

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- 4) What do you understand by the term Special Data Dissemination Standard?

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Let us now turn our attention to data on macroeconomic variables like national income, saving and investment.

21.3 NATIONAL INCOME AND RELATED MACRO ECONOMIC AGGREGATES

21.3.1 System of National Accounts (SNA)

How do you assess the performance of an economy? You may be able to look at the trend in the production of rice or wheat to be able to say something about the performance of paddy or wheat crop. You can make a similar assessment about the production of steel. If you want to say something on agricultural production, where you find that some crops have done well and others have not, you think of making an overall assessment of agricultural performance by constructing an index of agricultural production to review the performance of agricultural production. But we should like to go beyond levels of output or production and look at performance in terms of incomes flowing from output in the form of rent, wages, interest and profit to those participating in the creation of output namely the factors of production – land, labour, capital and entrepreneurship (Since 1993, the role of the Government in influencing the economy, through various taxes and subsidies have also become an important item of analysis). Alternatively, we would like to base our judgment of

performance on value addition made by the production system namely, value of output net of the (intermediate) costs incurred in creating the output. It is (i) this overall value addition computed for all sectors/activities of the economy, that is referred to as the National Product, (ii) macro-aggregates related to it, and (iii) trends in (i) and (ii), that can help you in analyzing the performance of an economy.

As you know, National Income (NI) is the Net National Income (NNI). It is also used to refer to the group of macroeconomic aggregates like Gross National Income (GNI), Gross Domestic Product (GDP), Gross Value Added (GVA) and Net Value Added (NVA). All these of course refer to the total value (in the sense mentioned above) of the goods and services produced during a period of time, the only differences between these aggregates being depreciation and/or net factor income from abroad. There are other macroeconomic aggregates related to these that are of importance in relation to an economy. What data would you, as an analyst, like to have about the health of an economy? Besides a measure of the National Income every year or at smaller intervals of time, you would like to know how fast it is growing over time. What are the shares of the national income that flow to labour and other factors of production? How much of the national income goes to current consumption, how much to saving and how much to building up the capital needed to facilitate future economic growth? What is the role of the different sectors and economic activities – in the public and private sectors or in the organized and unorganized activities or the households in the processes that lead to economic growth? How does the level and pattern of economic growth affect or benefit different sections of society? How much money remains in the hands of the households for consumption and saving after they have paid their taxes (Personal Disposable Income) – an important indicator of the economic health of households? What is the contribution of different institutions to saving? How is capital formation financed? Such a list of requirements of data for analyzing trends in the magnitude and quality of, and also the prospects of, efforts for economic expansion being mounted by a nation can be very long. Such data, that is, estimates of national income and related macroeconomic aggregates from part of a system of National Accounts that gives a comprehensive view of the internal and external transactions of an economy over a period, say, a financial year and the interrelationships among the macroeconomic aggregates. National Accounts thus constitute an important tool of analysis for judging the performance of an economy vis-à-vis the aims of economic and development policy.

The United Nations (UN) has been recommending guidelines in the form of a System of National Accounts (SNA) in order to promote international standards for the compilation of national accounts as an analytical tool and international reporting of comparable national accounting data. The first version of SNA was recommended in 1953. This was revised in 1968 and then in 1993. The fourth version (2008 SNA) was prepared under the auspices of the Inter-Secretariat Working Group on National Accounts consisting of the Commission of the European Communities (Eurostat), International Monetary Fund (IMF), Organisation for Economic Cooperation and Development (OECD), the UN and the World Bank and adopted by the UN Statistical Commission in 2008. This system has been harmonized with other major statistical systems like the **Balance of Payments Statistics and Government Finance Statistics of the IMF**. The **2008 SNA** contains a coherent, consistent and integrated set of macroeconomic accounts based on a set of internationally agreed concepts, definitions, classifications and accounting rules. It provides a

comprehensive accounting framework within which data can be compiled and presented in a format that is designed to facilitate economic analysis, formulation of policy and decision-making. You can read the entire SNA by accessing it at <http://unstats.un.org/unsd/nationalaccount/docs/SNA2008.pdf>.

The informal sector or the unorganized sector occupies an important place in our economy, in terms of contribution to national income, employment and exports. It is necessary, therefore, to bestow adequate attention to unorganized sector in the compilation of National Accounts and in other data domains and in international efforts at promoting collection of data on informal sector activities. The 15th International Conference of Labour Statisticians (ICLS) (January, 1993) adopted a resolution on informal sector statistics with a view to helping member countries of the International Labour Organisation (ILO) in reporting comparable statistics of employment in the informal sector. The resolution was endorsed by the UN Statistical Commission and by 1993 SNA.

National Accounts are compiled in India using a mix of 1968 SNA and 1993 SNA. India is also in the process of moving towards the full implementation of SNA methodology to the extent feasible.

21.3.2 Estimates of National Income and Related Macroeconomic Aggregates

a) Estimates Released by CSO

The Central Statistics Office (CSO) in the Ministry of Statistics and Programme Implementation (MoSPI), Government of India compile and publish National Accounts, which include estimates of National Income and related macroeconomic aggregates like NNP, GNP, GDP and NDP, PFCE (private final consumption expenditure), saving, capital formation and so on for the country and for the public sector for every financial year. Quarterly estimates of GDP are also prepared and released. Estimates prepared for any year at the prices prevailing in that year are called estimates *at current prices*. Estimates of national income and other aggregates at current prices is generally not used in analyzing changes in the magnitude of these aggregates over time, as price levels over time gets affected by inflation or deflation of an economy. Suppose we need to compare the performance of the economy in terms of national income or other macroeconomic aggregates, over a period of time, say, five years. A comparison of estimates of, say, national income at *current prices* in the opening year and the final year of the five-year period will give us the increase or decrease, as the case may be, in national income at current prices. We can easily note that the quantum of change observed in national income is *the composite measure of the change in national income and the changes in the prices of goods and services between the two points of time*. How then to get at the actual change, or the change in real terms in national income (or any other macroeconomic aggregate) over the period? This is done by removing the effect of changes in prices while comparing the aggregate in question at different points of time. Estimates of the aggregate for different years are, therefore, prepared at the estimates of the aggregate at constant (base year) prices. The comparison of estimates of the aggregate at constant (base year) prices at different points of time is comparison of the magnitude of the aggregate in real terms and measures the real change over time in the magnitude of the aggregate. The base year now in use is 2011-12.

CSO changes the base year from time to time in order to take into account the structural changes that take place in the economy and depict a true picture of the economy. It was 1948-49, initially, when estimates of National Income were first prepared by CSO and published in 1956. It was shifted to 1960-61 in August, 1967, to 1970-71 in January, 1978, to 1980-81 in February, 1988, to 1993-94 in February, 1999 to 1999-2000 in January, 2006; to 2004-05 in January 2010 and to 2011-12 in January 2015. Note that, in the beginning, the base years were the years in which the decennial population census was conducted, that is, the first year of every decade from 1961 to 1981. The choice of the subsequent base years, namely, 1993-94, 1999-00 and 2004-05 were a departure from this practice. What are the reasons for this? Estimates of workforce participation rates (WPR), that is, the proportion of workers to population for the benchmark years play an important role in the compilation of estimates of national income. CSO had been making use of data on WPR available from decennial population censuses till 1981 while compiling national income estimates and for this reason the base year was the relevant decennial census year. It was, however, observed that the Employment and Unemployment Surveys of the National Sample Survey Organisation (NSSO) captured WPR better than the population censuses. The base years chosen after 1981 were thus 1993-94, 1999-2000 and 2004-05, making use of data on employment based on the NSSO 50th, 55th, 61st Round and 68th round Surveys on Employment and Unemployment² conducted during July '93 – June '94, July '99 – June 2000, July '03 – June '04 and July 2011- June 2012 respectively. After every revision of base year, the CSO publishes a set of results which provide comparable estimates of the years prior to the base year, so that a long time series data on national income aggregates can be analysed by the researchers and policy makers.

Base year revisions differ from annual revisions in National Accounts primarily because of nature of changes. In annual revisions, changes are made only on the basis of updated data becoming available without making any changes in the conceptual framework or using any new data source, to ensure strict comparison over years. In case of base year revisions, apart from a shift in the reference year for measuring the real growth, conceptual changes, as recommended by the international guidelines, are incorporated. Further, statistical changes like revisions in the methodology of compilation, adoption of latest classification systems, and, inclusion of new and recent data sources are also made. Changes are also made in the presentation of estimates to improve ease of understanding for analysis and facilitate international comparability.

Estimates of national accounts aggregates for different years are published in considerable detail in CSO's Annual Publication "National Accounts Statistics (NAS)". The latest available NAS estimates are detailed in the publication NAS 2014 and the Press Notes of MoSPI dated the 31st January, 2015³. The press note of January 2015 provides, for the first time, estimates of macro-economic aggregates using the base year 2011-12. Note that in this release, for the first time, Gross Domestic Product (GDP) "at factor cost" has been discontinued. As is the practice internationally, industry-wise estimates have been presented as Gross Value Added (GVA) at basic prices, while "GDP at market prices has been referred to as GDP. Estimates of GVA at factor cost

² Some employment data from Census 1991/2001 have also been used to supplement the data from NSSO.

³ This publication and these Press Notes can also be accessed in the **Ministry of Statistics and Programme Implementation website** www.mospi.nic.in

(earlier called “GDP at factor cost”) can be compiled by using the estimates of GVA at basic prices and production taxes less subsidies. These have been given in Statement 3.1 of this note. For the years 2011-12, 2012-13 and 2013-14, GVA at factor cost have been compiled and are presented in Statements 10.1 & 10.2 of the press release.⁴Note that GVA at basic prices = GVA at factor cost + net taxes on production and GDP at market prices = GVA at basic prices + net taxes on products.

CSO releases, every January, “first revised estimates”, earlier called the “Quick Estimates” of GDP, National Income, per capita National Income, Private Final Consumption Expenditure, Saving and Capital Formation by broad economic sectors⁵ for the financial year that ended in March of the preceding year. Quick Estimates for any financial year are thus available with a time lag of ten months. It also releases, along with Quick Estimates for any financial year, revised estimates of national accounts aggregates for earlier financial years. Further, CSO brings out **Advance Estimates of GDP, GNI, NNI and per capita NNI. The GDP, from the base year 2011-12, is published at market prices, as per the latest international norms. Previously, it was published at factor cost.** Advance estimates of the GDP for the current financial year is published in February, two months before the close of the financial year. These advance estimates are revised thereafter and the undated advance estimates are released by the end of June, three months after the close of the financial year. Meanwhile, by the end of the March, Quarterly Estimates of GDP for the quarter ending December of the preceding year are also released. Thus by the end of March every year, that is, by the end of every financial year, advance estimates of national income for the financial year that just ended, first revised estimates of national income for the preceding financial year and the quarterly estimates of national income up to the preceding quarter, that is, up to the quarter that ended in December of the financial year that just ended become available.

CSO sets before itself an advance release calendar for the release of national accounts statistics over a period of two years.⁶ For instance, the Advanced Release Calendar for the years 2015 indicates that the Quarterly Estimate of GDP for any quarter during the period January, 2015 to end of September, 2015 would be available at the end of the next quarter. It also indicates the dates on which Advance Estimates, Quick Estimates and Revised Advance Estimates pertaining to the financial years ending on the 31st March, 2006, 30th June, 2006, 29th September, 2006 and 29th December, 2006, respectively would be released. Similarly, Revised Advance Estimates for the financial year 2004-05, Quick Estimates for the financial year 2004-05, Advance Estimates for the financial year 2005-06 and Revised Advance Estimates for the financial year 2005-06 would be released on the 30th June, 2005, the 31st January, 2006, the 7th February, 2006 and the 30th June, 2006, respectively. CSO has already (30th January, 2015) released the following estimates, as proposed:

- i) First Revised Estimates for 2013-14 at current and constant (2011-12) prices,

⁴ These 2 paragraphs have been taken from the Press release of the CSO dated 30th January 2015.

⁵ 1. Agriculture, Forestry & Fishing, 2. Mining & Quarrying, 3. Manufacturing, 4. Electricity, Gas & Water Supply, 5. Construction, 6. Trade, Hotels & Restaurants, 7. Transport, Storage & Communication, 8. Financing, Insurance, Real Estate & Business Services, 9. Community, Social & Personal Services.

⁶ This also takes care of SDDS referred to earlier.

- ii) First revised Estimates of GDP, National Income, per capita National Income, Consumption Expenditure, Saving and Capital Formation for 2013-14 (along with revised estimates of the earlier two years) at current and constant (2011-12) prices,
- iii) Advance Estimates of GDP, GNP and NNP and per capita NNP for 2014-15 at current and constant (2011-12) prices (on the 9th February, 2015).

The **NAS 2014** presents estimates of GNP, NNP and the corresponding domestic products GDP and NDP at factor cost and market prices at current and constant (2004-05) prices⁷. Besides giving estimates of the components of GDP, estimates like Government Final Consumption Expenditure (GFCE), Private Final Consumption Expenditure (PFCE) in the domestic market, Gross Domestic Saving (GDS), Gross Domestic Capital Formation (GDGF), Exports, Imports, net factor income from abroad and the share of the public sector in GDP it presents⁸, estimates of the following aggregates *at current and constant prices (2011-12 prices)* for 2013-14 and the period 2011-12 to 2013-14:

- i) The contribution to GDP and NDP of different economic activities⁹.
- ii) Quarterly estimates of GDP by broad economic sectors;
- iii) GDP of sub-groups of each of the economic activities (see footnote 9) 1.1 and also separately for its livestock sub-sector¹⁰, 1.2, 1.3, 3.1, 3.2, 4, the sub-sectors of 4 namely, electricity, gas and water supply.
- iv) NDP for the sub-group 10, namely, Public Administration & Defence, by (a) Central Government and Union Territories; (b) individual State Governments; (c) local authorities; and (d) quasi government bodies.
- v) Factor incomes (compensation for employees and operating surplus/mixed income) of NDP for each economic activity (at current prices).
- vi) Factor incomes of NDP of the unorganized segment of each economic activity (at current prices).
- vii) Property incomes (rent and interest) and Financial Intermediation Services Indirectly Measured (FISIM) in the organized and unorganized segments of each economic activity (at current prices).
- viii) Net National Disposable Income, Private Income, Personal Income and Personal Disposable Income.

⁷ As mentioned earlier, the shift in the base for constant prices to 1999-00 was made in January, 2006, that is, after the publication of NAS 2005 in May, 2005. NAS 2006, due in June, 2006, would be presenting estimates at constant prices at 1999-00. Besides the press note of MoSPI referred to in the text, the **Economic Survey 2006 of the Ministry of Finance** presented by the Finance Minister to Parliament on the 27th February, 2006 also contains estimates released by CSO at current and constant (1999-00) prices for the years 2005-06 (Advanced Estimates), 2004-05 (Quick Estimates), 2003-04 and 2002-03.

⁸ Estimates of some of these macro aggregates are also published in the **Monthly Bulletin of RBI**.

⁹ 1. Agriculture and Allied Activities; 1.1. Agriculture; 1.2. Forestry & Logging; and 1.3. Fishing; 2. Mining & Quarrying; 3. Manufacturing; 4. Electricity, Gas, Water Supply and other utility services; 5. Construction; 6. Trade, Repair, Hotels & Restaurants; 7. Transport, Storage, Communication and services related to broadcasting; 8. Financial services, 9. Real Estate Ownership of dwelling & Professional Services; 10. Public administration and defence and 11 Other Services;

¹⁰ The livestock sub-sector is a sub-sector of the sub-group 'agriculture' (1.1 in the preceding footnote) and includes animal husbandry, (fuel & manure), silk worm cocoons and honey.

- ix) GDP and NDP of the Public Sector by type of public sector institutions¹¹ and economic activity.
- x) Factor incomes of Public Sector NDP for each economic activity by type of institutions (current prices).
- xi) Property incomes and FISIM in each economic activity of Public Sector by type of institutions.
- xii) Value of output, inputs and consumption of fixed capital (CFC) for a number of economic activities.
- xiii) Financial Assets and Liabilities of the Household sector.
- xiv) Economic and Purpose Classification of Current and Capital Expenditure of Administrative Departments (current prices).
- xv) Production Accounts of (a) Railways, (b) Communication, (c) Departmental Enterprises other than (a) and (b), and (d) Producers of Government Services.
- xvi) Detailed external transactions accounts.
- xvii) Depreciation as provided in the books of accounts of public sector institutional groups¹² and private corporate sector; and
- xviii) Time series of GNI, GDP NNP, NDP, Per capita NNI and other macroeconomic aggregates like CFC, net factor income from abroad, PFCE in the domestic market, GFCE exports, imports and mid-year population from 1950-51 to 2013-14¹³.

Estimates of the aggregates referred to at (i), (vii), (xiii), (xvi) and PFCE and its distribution by object and by type of goods, GFCE for the period 2004-05 to 2012-13 at current and constant (2004-05) Prices and the time series estimates referred to at (xvii) above at current and constant (2004-05) prices have been released by CSO in NAS 2014 by the end of May 2014 and posted on the **MoSPI website**.

What about separate estimates of National Income aggregates for rural and urban areas? CSO publishes estimates of NDP for rural and urban areas for each economic activity (see footnote 8) at current prices for each of the base year, namely, 1970-71, 1980-81, 1993-94, 1999-2000 and 2004-05.

b) Other Publications Giving CSO's Estimates

The Handbook of Statistics on the Indian Economy¹⁴ – 2013-14, published by the **Reserve Bank of India (RBI)** also publishes time series from 1952-53 of macro economic aggregates (that would otherwise have to be compiled from different issues of the NAS document) like GDP at factor cost, CFC, NDP at factor cost, indirect taxes less subsidies, NDP at market prices, net factor income from abroad, GNP at factor cost, NNP at factor cost, GNP at market price, NNP at market price, personal disposable income, GDP and NDP of

¹¹ Administrative Departments, Departmental Enterprises, Non-departmental Enterprises and Quasi-Government Bodies.

¹² Administrative Departments, Public Sector departmental Enterprises subdivided into (i) Railways, (ii) Communication; and (iii) others and Public Sector Non-Departmental Enterprises subdivided into (i) financial companies; and (ii) non-financial companies.

¹³ The **Pre-budget Economic survey** also presents the time series on GNP, GDP, NNP and per capita NNP and mid year population.

¹⁴ Published annually. This can be downloaded from the RBI WEBSITE <http://rbidocs.rbi.org/in/rdocs/Publications/PDFs/000HSE13120914FL.pdf>

public sector (from 1960-61), gross and net domestic capital formation, per capita GNP and NNP, at one place. The Economic and Political Weekly research Foundation (EPWRF) also presents comprehensive national income statistics in a time series format from time to time along with details of concepts, methodology and data sources for ready use by researchers. It provides data from **1950-51 to 2011-12 with 2004-05 as the base year** (<http://www.epwrfits.in/TimeSeriesDataResearch.aspx>)” is the latest. This can be obtained from EPWRF either as a subscriber or through a pay per module mode. National Accounts Statistics of most countries and areas of the world can be accessed at the UNSD website <http://unstats.un.org/unsd/nationalaccount/madt.asp>. At the time of writing the module, the latest year for which this data is available is 2013.

c) Limitations of the Estimates

The concepts and methodology used and the data sources utilized for making these estimates are set out in two publications of the CSO, namely, “**National accounts statistics : Sources and Methods**” (available for the base 2004-05 series, published by the CSO in 2012) and “**New Series on National Accounts (Base 2004-05)**” (CSO, 2010). The MoSPI Press Note dated the 31st January, 2006 releasing Quick Estimates of National Income, etc., for 2004-05 indicates briefly the changes in the new series of National Accounts Statistics with base year 2004-05. The publication NAS- Manual of estimating state and District Income, 2008 provide the methodology for making estimates of GSDP and GDDP. Besides, the publication “National Accounts Statistics” brought out every year has a chapter titled “Notes on Methodology and Revision in the Estimates”. This chapter in the NAS also contains tables explaining, sector-wise, reasons for the revision in GDP growth rate as per the different types of estimates (like revised advance, quick, etc., estimates) released in the preceding year. For instance, NAS 2014 gives the reasons for revision in GDP growth rate during.

- i) 2012-13 between the provisional Estimates released in May, 2013 and first revised estimates released in January, 2014;
- ii) 2011-12 between First Revised Estimates released in January, 2013 and Estimates released in January, 2014; and
- iii) 2010-11 between Estimates released in January, 2013 and Estimates released in January, 2014.

Limitations of estimates of national income aggregates arise from insufficiency of data or the choice of data in capturing adequately income flows. Estimates of GDP/NDP at factor cost by sectors can be classified into two broad categories from the point of view of differences in the data base – *direct estimates* and *indirect estimates*. *Direct estimates* are based on statistics available annually on a regular basis so that these reflect year-to-year variations in the volume of the economic activities concerned. The translation of such annual statistics into National Accounts aggregates requires the use of certain norms and ratios or other assumptions. Resort to readily available indications of the economic activity in question has often to be made *when and if* there are delays on the part of the data-generating agencies in supplying the required regular annual data. As a result, revisions made in the estimates of national accounts aggregates when regular annual data become available later lead to major changes in the provisional estimates released earlier. *Direct estimates* mostly cover the institutional groups, (i) the public sector (and the Government

component within it), and (ii) the private corporate sector, or what is usually referred to as the ‘organised’ segment of the economy. On the other hand, *indirect estimates* require to be made when regular annual statistics are not available in respect of any economic activity. How are these made? Estimates based on periodic benchmark surveys are first derived for the survey year. These are then extrapolated forward or backward, as required, on the basis of physical indicators of the economic activities concerned. The degree of approximation involved in this procedure depends critically on the sensitivity of the indicator in reflecting year-to-year variations in the volume of the economic activity concerned. *Indirect estimates* are used in respect of the institutional groups, (a) households, and (b) non-profit institutions serving households (NPISH) and the “unorganized” segment of the economy. The share of *direct estimates* in aggregate GDP has increased from 57.6 per cent in the series with 1970-71 as the base year to 63.7 per cent in the series with 1980-81 as the base year and to 89.6 per cent in the series with 1993-94 as the base year. The share of *direct estimates* in different sectors in the GDP series with 2004-05 as the base year varied from 100 per cent in Mining, Registered Manufacturing, Electricity, Gas & Water Services, Railways and Public Administration & Defence sector to about 21 per cent in trade sector¹⁵. As such, the share of organized sector in 2012-13 had become only 44.7 per cent of the economy (with base year 2004-05, page 1i, NAS 2014).

The intention of this sub-section is not to comment adversely on the admittedly complex task of compiling national accounts statistics but to draw attention to limitations that need to be kept in mind by users as economists/statisticians/analysts utilizing these data while carrying out their research, analytical and advisory work. Improvements in data and methodology for estimating national accounts aggregates constitute a continuous process, calling for efforts across sectors, in which Ministries in the central Government, regulatory agencies, the CSO, the State Directorates of Economics & Statistics and other research institutions participate. The interesting reader may like to familiarize himself/herself with the work being done by **the Indian Association for Research in National Income and Wealth, New Delhi. Their Bulletin** would show the efforts underway to bring about further improvements in national accounts methodologies and statistics. The recommendations of the **National Statistical Commission (2001)** will also pave the way to further enhancement of the quality of these estimates.

21.3.3 The Input-Output Table

Any economic activity is dependent on inputs from other economic activities for generating its output and the output from this economic activity serves as inputs for producing the output from other activities. Data relating to the interrelationship among different sectors of the economy and among different economic activities are thus important for analyzing the behavior of the economy and, therefore, for formulation of development plans and setting targets of macro variables like output, investment and employment. Such an input-output table will also be useful for analyzing the impact of changes in a sector of the economy or economic activity on other sectors of the economy and indeed the entire economy. An **Input-Output Transactions Table (IOTT)** is prepared by CSO from time to time. The latest to be published is the one relating to **2007-08**¹⁶. It gives, besides the complete table, the methodology

¹⁵ This paragraph is based on Section 13.2 Chapter 13 of the Report of the National Statistical Commission.

¹⁶ This can be accessed at http://mospi.nic.in/Mospi_New/upload/iott-07-08_6nov12.htm

adopted, the database made use of, analysis of the results and the supplementary tables derived from the IOTT giving the input structure and the commodity composition of the output. The Planning Commission updates and recalibrates the IOTT and prepares an Input-Output table for the base period of a Five Year Plan being formulated and another Input-Output table for the terminal year of the Five Year Plan. The detailed results of this exercise, carried out in the Planning Commission for the formulation of any Five Year Plan, are published by the Planning Commission as the **Technical Note to the Five Year Plan**. The Technical Note contains the relevant Input-Output Table, the methodology adopted and related material. The latest available in this series is the **Technical Note to the Tenth Five Year Plan**. The IOTT of CSO and the Input-Output Table of the Planning Commission would be useful to researchers interested in exploiting the power of the input-output technique in economic and econometric analysis in their research work.

21.3.4 Regional Accounts – Estimates of State Income and Related Aggregates

a) Estimates of States Domestic Product (SDP) Prepared and Released by State Governments and Union Territory Administrations

State Accounts Statistics (SAS) consist of various accounts showing the flows of all transactions between the economic agents constituting the State economy and their stocks. The most important aggregate of SAS is the State Domestic Product (SDP) (State Income). Estimates of GSDP and NSDP at constant and current prices are being prepared and published by the **Directorates of Economics and Statistics (DES) of all State Governments and Union Territory Administrations except the Union Territory Administrations of Dadra & Nagar Haveli, Daman & Diu and Lakshadweep**.

b) Other Publications Giving Estimates of SDP Made by State/UT DES

The State Governments and Union Territory Administrations send their estimates of SDP to the CSO. These estimates at current and constant prices are available in the **CSO website**. The **pre-Budget Economic Survey** presented to Parliament by the Finance Minister every year contains these estimates (as a time series from 1993-94) of Net State Domestic Product (NSDP) at current prices. The **RBI Handbook** referred to above provides more detailed data drawn from the CSO website. It presents:

- i) estimates of NSDP at current and constant prices – one set with the constant prices base 1980-81 for the period 1980-81 to 1998-99 and the other with the constant prices base 1993-94 for 1993-94 to 2003-04; and
- ii) estimates of NSDP by economic activity and per capita NSDP at current and constant (1993-94) prices for the period 1993-94 to 2003-04; (new series).

Estimates of State Income (gross State Domestic Product) made by States and Union Territories by economic activity at *current as well as constant prices* are readily available in a (short) time series format at one place in the publication of the **CMIE (EIS), Mumbai** referred to above. These estimates at current and constant prices by sectors for the period 1960-61 to 2000-01 have also been brought together at one place for the use of research scholars by the EPWRF in their publication **Domestic Product of States of India: 1960-61 to 2000-01**

(EPWRF, June, 2003). These are also available on the **website of the EPWRF** and in user-friendly and interactive **CD ROMS**.¹⁷

c) **Limitations of Estimates of SDP**

The preparation of estimates of SDP call for much more detailed data than for the preparation of national level estimates, especially on flows of goods and services and incomes across geographical boundaries of States/ Union Territories. Conceptually, estimates of SDP can be prepared by adopting two approaches. These are the *income originating approach* and the *income accruing approach*. In the former case, the measurement relates to the *income originating to the factors of production physically located within the area of a state*. In other words it is *the net value of goods and services produced within a state*. In the latter case, the measurement relates to the *income accruing to the factors of production physically located within the area of a State*. Here, the measurement relates to the *income accruing to the normal residents of a State*. The income accruing approach provides better measure of the welfare of the residents of the State. Preparation of estimates of SDP using the income accruing approach is not possible because data on inter-State flow of goods and services are not available. Compilation of other aggregates of State accounts is also problematic because the data required for the purpose, especially on inter-State flows of incomes, are not available.¹⁸ Thus only the *income originating approach is used in preparing estimates of SDP*. This has to be kept in mind while using estimates of SDP.

Efforts have been made by the CSO over the years to bring about a good degree of uniformity across States and Union Territories in SDP concepts and methodology. The major milestones in these efforts are:¹⁹

- i) the recommendations of the **First report of the Committee on Regional Accounts (CSO, 1974)** set up by the Government of India and the **Final Report of the Committee (CSO, 1976)** in the form of a set of Standard Tables to be prepared and a system of regional accounts, besides suggestions regarding steps to fill gaps in data *vis a vis* those needed for compilation of SDP, for the guidance of DES of States/Union Territories;
- ii) the article “**Mahabaleshwar Accounts of States**” in the **October, 1976 issue of the Journal of Income & Wealth**;
- iii) the article “**The Status of State Income Estimates**” appearing in the **October, 1980 issue of the Monthly Abstract of Statistics (CSO)**; and
- iv) the article “**Comparable Estimates of SDP – 1970-71 to 1975-76**” appearing NAS, January, 1979 of CSO, which described the methodology of preparing estimates of SDP.
- v) the publication “**National Accounts Statistics: Manual of Estimating State and District Income, 2008**” published by the CSO in 2008.

Are the estimates of SDP of different States/Union Territories comparable? Probably not. The successive Finance Commissions have found it necessary to get comparable estimates of NSDP and per capita NSDP made for their use for periods relevant to their work. These comparable estimates of SDP are published in the **Reports of the successive Finance Commissions** from the

¹⁷ E-mail id for queries to EPWRF: epwrf@vsnl.com .

¹⁸ The Report of the National Statistical Commission, Chapter 13 section 13.7.

¹⁹ *ibid.* See also the Preface to EPWRF publication on SDP in the preceding sub-section (b) on other publications giving SDP estimates.

sixties. The **EPWRF publication on SDP** referred to earlier also provides comparable estimates of SDP and evaluates these with reference to those made for the periods 1960-61 to 1964-65, 1976-77 to 1978-79, 1982-83 to 1984-85, 1987-88 to 1989-90 and 1994-95 to 1996-97 for the use of the Finance Commissions. The question of comparability of estimates of SDP of different States/Union Territories is important from the point of view of their use in econometric work involving Inter-State or regional comparisons or the contribution of the regions or the States to the national product.

21.3.5 Regional Accounts – Estimates of Districts Income

The need for preparing estimates of district income has become urgent in the context of decentralization of governance and the importance of, and the emphasis on, decentralized planning or planning from below. Of late, it has gained a special importance, as this is one of the three indicators to compile the district-wise Human Development Index, prepared by some of the States. The State Governments have realized this need and estimates of District Domestic Product (DDP) are being prepared by a number of State DES and published by them in **State Statistical Handbooks/Abstracts/Economic Surveys** and are also posted on **their websites**. The position in different States and Union Territories (zone-wise) is as follows:

Type of estimate of DDP	State/ UT	Base year
1. for all years till 2013-14	Rajasthan	2004-05
2. for all years till 2012-13	Andhra Pradesh, Arunachal Pradesh, Assam, Madhya Pradesh, Maharashtra, Meghalaya, West Bengal	2004-05
3. for all years till 2011-12	Bihar, Haryana, Himachal Pradesh, Karnataka, Kerala, Chhattisgarh, Punjab, Tamil Nadu, Telangana, Uttar Pradesh	2004-05
4. for all years till 2010-11	Nagaland, Odisha, Uttarakhand	2004-05
5. Up to 2005-06/ 2006-07/ 2007-08	Jharkhand, Mizoram, Andaman & Nicobar Islands/ Manipur / Sikkim	1999 – 2000
6. Not available	Goa, Gujarat, Jammu & Kashmir, Tripura, Delhi, Puducherry	
7. Not required	Chandigarh, as the UT has only 1 district	

For some of the States in 6, it might be available with the State Directorate of Economics and Statistics, but not available centrally at one location.

The methodology for preparing estimates of district income at present is based on²⁰

- i) The recommendations of the **Report²¹ of the Technical Group set up by the Department of Statistics** for recommending a suitable methodology for preparing estimates of district income;
- ii) The methodology developed in August, 1996 jointly by the DES of Uttar Pradesh and Karnataka – a task entrusted to these organization by CSO in 1995.

²⁰ See Methodology of estimating State and District Domestic Product, CSO, 2008.

²¹ Submitted in January, 1987.

The *income originating approach* is adopted for compiling district income estimates in the light of the kind of data that is available. As mentioned earlier, the *income accrual approach* can measure the welfare of the normal residents of the district in a more reliable manner. However, as flow of funds from district to district is not available and difficult to estimate, the income originating approach is followed. It is necessary to make adjustments, in the estimates based on the *income originating approach*, for flow of incomes across territories of districts that are rich in resources like minerals or forest resources and where there is a daily flow of commuters from other districts.

There are a lot of problems in the context of data availability separately for each district. For most of the commodity producing sectors, like agriculture, mining and registered manufacturing, data is fairly available. But, in remaining sectors, it is very scanty. Even within the agricultural sector, even if one can get the district-wise production, prices at each district sometimes may not be available. In case of entire unorganized sector, where national and State level estimates are based on periodic surveys, reliable district level estimates from these data cannot be prepared due to limitations in sample size.

21.3.6 National Income and Levels of Living

The foregoing paragraphs have talked about the availability of estimates of macroeconomic aggregates at the national and state levels, in different economic activities, in segments of economic and geographic spaces like public and private sectors, and households and rural and urban areas. What do trends in the magnitude of these variables say about the welfare of different sections of society? Precious little, perhaps, especially when these are considered without information on the manner in which the macroeconomic aggregates are distributed among these sections of society. Per-capita national income or even per-capita personal disposable income can only indicate overall (national) averages. Distribution of population by levels of income can be a big step forward in understanding how well the performance in the growth of GDP has translated into or has not translated into, improvements in levels of living for sections of society below levels considered the minimum desirable level. It would also help us analyse whether inequalities in levels of living have worsened or abated. What about the level of unemployment or levels and quality of employment? What about the health status of people? Or, to consider all these indicators of the state of a society and different sections of society, what are the levels of human development and gender discrimination? Such lines of analysis and the data required for the purpose are important from the point of view of planning for a strategy of growth with equity.

The Quinquennial Consumer Expenditure Surveys of the NSSO provides such data. These provide the distribution of households by monthly per capita consumption expenditure (MPCE) classes. You have already looked at such data and their implications for planning and policy in Unit 4 on “Poverty and Inequality – Policy Implications” in Block 1 on “Framework of the Indian Economy” in Course MEC-105 on “Indian Economic Policy” in your first year course. As you have seen there, the latest available data on this relate to 2011-12, flowing from **the 68th round NSSO survey of 2011-12**. The next such comprehensive survey (74th Round of NSS) is planned in 2016-17. You have also looked at the data on recent trends on growth rate of employment and the growth rate of the economy (employment elasticity) in Unit 5 on “Employment and Unemployment: Policy Implications” and comprehensive indicators like Human Development Index and the Gender Development Index

in Units 3 and 4 in Block 1 of Course MEC-005. You would have noted that the **Human Development Reports prepared by the Planning Commission (available on its website) and several State Governments** contain detailed data on these questions.

Check Your Progress 2

- 1) List the various components of the system of National Accounts.

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- 2) Which have been the base years for compilation of national accounts statistics (NAS)? What is the difference between base year revision and revision of estimates in annual series of the NAS?

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- 3) In addition to CSO, which other agencies bring out the data on macro economic aggregates?

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- 4) By whom the estimates of state income and related aggregates are made?

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21.4 SAVING

As you are aware, broadly speaking, GNP is made up of consumption, saving exports net of imports, besides net factor income from abroad. Saving is important in as much as it goes to finance investment, which in turn brings about growth of GNP. What is the volume of Saving relative of GNP? How much of it is consumed by the needs of depreciation? Who all contribute, and how much, to the total volume of Saving? Let us see what kind of data is available on such questions.

Estimates of Gross Domestic Saving (GDS) and Net Domestic Saving (NDS) in *current prices* and the Rate of Saving are made by CSO and published in the **National Accounts Statistics (NAS) every year** and the **Press Note of January of every year releasing First Revised Estimates**. These are first made for any year along with First Revised Estimates of GDP, etc., and revised and finalized along with its subsequent revisions. The structure of Savings, that is, the distribution of GDS and NDS by type of institution – household sector, private corporate sector and public sector are also available in this publication. Also presented in this document is the distribution of:

- i) GDS, NDS and consumption of fixed capital (depreciation) by public sector, private corporate sector and household sector;
- ii) Public sector GDS, consumption of public sector fixed capital and public sector NDS by type of institutions²²;
- iii) Public sector GDS – by public authorities [sub-divided further into government administration and departmental (commercial) enterprises], non-departmental enterprises (broken up further into government companies and statutory corporations, the latter including port trusts also);
- iv) Private sector GDS, consumption of fixed capital and NDS by private corporate sector and household sector;
- v) Private corporate sector GDS by joint stock companies (distributed further into financial and non-financial companies) and cooperative banks and societies;
- vi) GDS of the household sector into (net) financial saving and saving in physical assets and that of (net) financial saving, that is, currency, net deposits, shares and debentures, net claim on Government, life insurance funds and provident and pension funds;
- vii) Financial assets [in greater detail than in (vi) above] and liabilities of the household sector leading to net financial saving of the household sector; and
- viii) Item (xiii) in the list in sub-section (a) of Section 20.3.2 – these indicate estimates of net saving in these entities.

NAS 2014 presents the above estimates for 2012-13 and for the period 2004-05 to 2012-13. The **Press Note dated the 31st January, 2014 of MoSPI releasing Quick Estimates** provides estimates of GDS, NDS, and all the estimates referred to at (i) to (vii) above for 2012-13. Time series of estimates of GDS and NDS *in current prices* are, however, available from 1950-51 onwards. The

²² See footnote 12.

time series on the structure of GDS by institutions (public, private corporate and household sectors) are presented in the **Pre-Budget Economic Survey (2014)** of the Ministry of Finance. **The Handbook of Statistics on the Indian Economy of RBI** presents time series data from 1952-53 on GDS and NDS and from 1970-71 onwards on (i) their components by institutions, and (ii) financial assets and liabilities of the household sector, item-wise, at current prices. **The EPWRF publication on NAS (fifth edition)** gives time series data from 1950-51 on all these variables and on Domestic Saving in public sector by type of institutions. The CMIE publication referred to earlier also contains time series data on GDS and NDS, though for a shorter period of time.

Estimates of Gross and Net Domestic Saving at the State and Union Territory levels are not being made at present by DESs of State/Union Territories.

The CSO publishes “**Sources and Methods**”, an additional publication showing the detailed methodology followed and data sources used for preparation of the National Income aggregates in the base year and the methodology to be followed since the change in base year. It may be added that estimates of Savings suffer from a number of limitations due largely to deficiency of data. This is particularly so in respect of estimates of various financial instruments from the private corporate sector and the household sector. Saving being the excess of income over expenditure, the major gaps in data relate to the household sector, non-profit institutions serving households (NPISH) and local bodies. Quality of data relating to the private corporate sector poses an additional problem. The estimate of Savings of the household sector in physical assets is thus derived as a residual, in the absence of direct data.²³

21.5 INVESTMENT

Investment is Capital Formation (CF). Investment of money in the shares of a company or purchase of land is not investment but buying a house or machinery is investment. In other words, investment is creation of physical assets like machinery, equipment, building, inventories and so on, called “produced assets”, adding to the capital stock (of such assets) in the economy, enhances the productive capacity of the economy. Investment or CF is another important component of GNP and the rate of investment – expressed as a proportion of GNP – largely determines the rate of growth of the economy. How is capital formation financed by the economy? What is the contribution of different sectors to capital formation or, how much is used up by different sectors? What is the capital stock available in the economy? These are all the questions that rise in one’s mind when considering strategies for economic growth. What kind of data is available?

The annual NAS publication of the CSO presents estimates of Gross Domestic Capital Formation (GDGF), Gross Domestic Fixed Capital Formation (GDFCF), Change in Stocks, Consumption of Fixed Capital (CFC), Net Domestic Capital Formation (NDCF) and Net Domestic Fixed Capital Formation (NDFCF) in current prices and at constant prices. These estimates are made along with First Revised Estimates of National Income in January every year and the process of revision of these estimates proceeds along with that of the estimates of national income aggregates. The estimates of capital formation are presented in the NAS through two alternate approaches, namely,

through the flow of funds approach and through the commodity flow approach. The flow of funds approach is gross domestic savings plus net capital inflows from abroad, while the commodity flow approach, derived by the types of assets. **The successive issues of NAS and the Press Note of MoSPI of January every year** also present estimates of the distribution of the following aggregates at current and constant prices:

- i) GDCF, GDFCF, Change in Stocks, CFC, NDCF and NDFCF by type of institutions (public sector, private corporate sector and household sector);
- ii) GDFCF in the public sector, private corporate sector and household sector by type of assets (construction and machinery & equipment);
- iii) GDCF, GDFCF, Change in Stocks, CFC, NDFCF and NDCF by economic activity²⁴;
- iv) Net Capital Stock (NCS), Net Fixed Capital Stock (NFCS) and Inventory as on the 31st march of each calendar year by type of institutions (Government administrative departments, Departmental enterprises, Non-departmental enterprises, joint stock companies of the private corporate sector, cooperative and household sector);
- v) NCS, NFCS and Inventory as on the 31st March of each calendar year by economic activity;
- vi) Consolidated Account of the Nation – How Capital Formation is financed (current prices);
- vii) Consolidated Account of the Nation – External Transactions showing current and capital transactions (in current prices);
- viii) GDCF, GDFCF and Change in Stock in the public sector by economic activity and type of institutions;
- ix) NDCF, NDFCF and Change in Stock in the public sector by economic activity and type of institutions;
- x) GDFCF in each type of public sector institutions by type of assets (at current prices);
- xi) (v) above for the public sector;
- xii) Financing of Capital Formation in (a) Railways, (b) Public Sector Communication and (c) Administrative Departments including Departmental Enterprises other than (a) and (b), (d) Non-Departmental Financial and Non-Financial Enterprises (in current prices); and
- xiii) Time series of GDCF and GFCF from 1951 to latest financial year.

NAS 2014 presents estimates of aggregates listed above at current and constant (2004-05) prices for the period 2004-05 to 2012-13. The **MoSPI Press Note of the 31st January, 2015** provide estimates of GCF, GFCF and consumption of fixed capital in current and constant (2011-12) prices as also of the distribution of these by industry of use and by institutional sectors of the economy, as defined in the SNA, namely, Public non-financial corporations, private non-financial corporations, public financial corporations, private financial corporations, general Government and Households for the period 2011-12 to 2013-14.

²⁴ See footnote 10.

Other publications providing time series of CSO data on capital formation are:

Sl. No.	Publication		Variable	Time Series From
1)	Pre-Budget Economic Survey (2006)		#GDCF, GFCF and Change in Stocks and their structure by by institutions	1950-51
2)	RBI Handbook of Statistics on the Indian Economy – 2005	*i)	GDCF and NDCF	1950-51
		*ii)	GDCF, GFCF and Change in Stocks and their structure by institutions.	1970-71
		#iii)	Financial assets and liabilities of the household sector (item-wise)	1970-71
3)	EPWRF publication on NAS (Fifth Edition)	*i)	data of the type in items (i) to (ix) and (xi) of NAS listed in the preceding paragraph of this section are generally given.	1950-51
		*ii)	Capital-output ratios by institutions;	1950-51
		*iii)	Average NFCS to Output	1950-51
4)	CMIE		*GDCF and GFCF	1960-61

at current prices

*at current and constant (1993-94) prices

The publications/documents of CSO and other documents like the **Report of the National Statistical Commission** referred to in the section on National Income contain the methodology and the data utilized for preparing estimates of Capital Formation and related aggregates also.

Estimates of GFCF at the State level are being prepared by 14 States, namely, Punjab, Haryana, Himachal Pradesh, Madhya Pradesh, Orissa, Meghalaya, Assam, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Maharashtra, Gujarat and Rajasthan. The status of these estimates are indicated in the **EPWRF publication on NAS**, referred to in the sub-section 20.3.4.

Gaps in data for the estimation of capital formation exist in a number of relevant areas²⁵. Some of these are:

- i) Non-availability of regular data on equipment and machinery (part of GFCF) in domestic production in unregistered manufacturing;
- ii) Lack of annual enterprise surveys and surveys on NPISHs for estimating GFCF by institutional sectors of the economy;
- iii) Complete accounts of local bodies are not available for some States/ UTs;
- iv) Bank advances and other indirect approaches form the basis of estimation of Changes in Stocks, with benchmark estimates coming from quinquennial enterprise surveys; and

- v) Inadequacies in (a) the representative character of the sample of companies and (b) the blow-up factor used for estimation of saving and investment of the private corporate sector.

Check Your Progress 3

- 1) What approaches are followed by CSO to compile the saving data in National Accounts Statistics? Which estimates of investment are prepared by the CSO?

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- 2) Go through the methodology contained in NAS 2015 and the data utilized for preparing estimates of capital formation and related aggregates.

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- 3) From where can you get the data on contribution of different sectors to capital formation?

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21.6 LET US SUM UP

The Indian Statistical System with the **Ministry of Statistics and Programme Implementation (MoSPI)** at its apex collects, compiles and disseminates an enormous amount of data on diverse aspects of the Indian economy, to the extent feasible, international standards prescribed by the **United Nations** and other international bodies. **MoSPI** sets standards to be followed by statistical agencies in the country and coordinates statistical activities carried out by these agencies. It also develops standardized classification of economic activities, namely, **NIC**, revising it from time to time keeping pace with the structural changes taking place in the economy. Data published by various Government agencies can be accessed through the portal www.data.gov.in. Other agencies also bring together and publish comprehensive data on some or all sectors of the economy, these publications being, the annual **Economic Survey** of the Ministry of Finance, the Budget documents, the Five-Year Plan documents, **RBI's Statistical Handbook on the Indian Economy**, its **monthly bulletin**, **the website on the database of the Indian Economy**, and the **Human Development Reports** prepared by the Planning Commission and the State Governments. Most of these data are available in electronic format – and/or on

the websites of the agencies concerned. One can usually download the published reports of the Government agencies from their respective websites free-of-charge. Various agencies also give anonymized data for analysis purposes. The **CMIE (EIU), Mumbai** and the **EPWRF, Mumbai** also bring together and publish comprehensive data on different sectors/aspects of the economy regularly. The **Statistical Handbooks of the State/Union Territory DES** and the **District Census Handbooks** published by the Census Directorates/Registrar general of India provide comprehensive information across sectors at the State and sub-State levels. Finally, the website of the United Nations Statistics Division provide access to methodological documents, data and report of various UN organisations which can be used for cross-country comparisons. The search for any kind of data can thus very well start from one of these sources and move on, if necessary, to the primary source.

National Accounts Statistics (NAS), which consists of estimates of National Income (NNI), GNI, GDP, NDP and related macroeconomic aggregates like Consumption Expenditure, Personal Disposable Income and Factor Incomes constitute an important tool for analyzing the performance of an economy. These compiled by **CSO, MoSPI** and published every year. In compiling these, CSO follows the guidelines given in 1993 **SNA of the United Nations** to the extent feasible. These estimates are published in great detail in CSO's annual publication **National Accounts Statistics (NAS)**. The latest issue of this publication – **NAS 2014** – is also available on the **MoSPI website**. In addition, Advance Estimates of GNI, GDP, NNI and per capita income for a financial year are released two months before the end of the financial year through a **Press Note** and in the **MoSPI website**. First Revised Estimates of these aggregates relating to a financial year and revised estimates of earlier years are released by January of the next year, that is, within ten months after the close of the financial year through a **Press Note** and on the **MoSPI website**. Quarterly Estimates of GDP are also prepared and released, generally within 45 days from the close of a quarter.

NAS estimates are presented in current and constant (base year) prices. **CSO** changes the base year from time to time to take note of structural changes in the economy and to depict a true picture of the economy. The base year was changed to 2004-05 in January, 2010 and to 2011-12 in January, 2015. Thus, as of the 1st March, 2015, Advance Estimates of GDP, etc., for 2014-15, First Revised Estimates of GDP, etc., for 2013-14, estimates of GDP for the quarter ending December, 2014 and for the period April-December, 2014, all in current and constant (2011-12) prices, have been released.

Estimates of Saving and Capital Formation form part of the National Accounts Statistics. These estimates are presented in detail in the publication **National Accounts Statistics, published in May of each year**. The press note of January, 2015, has provided the estimates referred to above with a changed base year 2011-12. The detailed estimates presented in **NAS** enable an analysis of various aspects of Saving and Capital Formation like the structure of Saving and Capital Formation, the manner in which Capital Formation is financed, the role of the public sector in Capital Formation and trends in the rate of Saving and Capital Formation and net capital flow from abroad.

Estimates of State Income are made and released by **DES of all States and Union Territories except Dadra & Nagar Haveli, Daman & Diu and Lakshadweep**. Estimates of GFCF are being made by 14 state DESs. District

Income estimates are made and released by DES of States. Estimates of State Income are also available in **MoSPI website**, besides the **Economics Survey**, **RBI Statistical Handbook on the Indian Economy** and the **CMIE** and **EPWRF (State Income)** publications referred to earlier. The last publication also give the State level GFCF estimates. The **RBI Handbook**, the **Economic Survey**, the **EPWRF publication on NAS** and the **CMIE** publication referred to earlier also present the national level estimates of GDP, etc., estimates of Saving and Capital Formation made by CSO. The **CMIE** and the **EPWRF** publications also contain almost as much detail as the publication **NAS** and in a time series format.

We have also noted the limitations and inadequacies to which estimates of national and state income and those of capital formation and saving are subject. Improvement in methodology and efforts to fill gaps in data constitute a continuous process.

21.7 EXERCISES

- 1) What type of data will you need to assess the performance of Indian Economy? Explain the various sources of such data?
- 2) State the difference between “Gross” and “Net” in the context of domestic and national income. How can one arrive at “Net National Income” from “Gross Value Added at basic prices”?
- 3) What are the relationships depicted in Input-Output Table? How are these tables useful in research work?
- 4) With the help of NAS 2014, explain the structure of saving in India.
- 5) What do you mean by the term capital formation? What is the capital stock available in India?

21.8 SOME USEFUL BOOKS

Central Statistics Office (2012): *National Income Statistics – Sources and Methods*, Ministry of Statistics and Programme Implementation, Government of India, New Delhi.

_____ (2008): *Methods of estimating State and District Domestic Product*.

_____ (2014): *National Accounts Statistics, 2014*,

_____ (2007): *Input Output Transactions Table 2007-08*

_____ (2015): *Press Note New Series estimates of national income, consumption expenditure, saving and capital formation (base year 2011-12)*

International Labour Organisation (ILO) (1993) : *Resolution Concerning Statistics of Employment in the Informal Sector*, 15th International Conference of Labour Statisticians (ICLS), January, 1993. Geneva.

Indian Association for Research in National Income and Wealth & Institute of Economic Growth (1998): Golden Jubilee Seminar on Data Base of the Indian Economy, Delhi. A look at the Bulletins of the Association would also be useful.

<http://mospi.gov.in> : website of the Ministry of Statistics and Programme Implementation, Govt. of India.

<http://rbi.org.in> : website of the Reserve Bank of India.

<http://unstats.un.org> : website of the United Nation's Statistics Division.

Katyal, R.P., Sardana, M.G. and Satyanarayana, J. (2001): Estimates of DDP, Discussion Paper 2, National Workshop on State HDRs and the Estimation of District Income Poverty Under the State HDR Project Executed by the Planning Commission (GOI) with UNDP Support held in Bangalore in July, 2001, UNDP, New Delhi.

Ministry of Statistics & Programme Implementation (2001): Report of the National Statistical Commission, Ministry of Statistics and Programme Implementation, New Delhi.

System of National Accounts 1993 (SNA 1993) Commission of the European Communities, International Monetary Fund, Organisation for Economic Cooperation and Development United Nations, World Bank, Brussels/Luxembourg, New York, Paris, Washington, D.C. www.mospi.nic.in : Website of the Ministry of Statistics and Programme Implementation.

21.9 ANSWERS ON HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

- 1) Coordination of statistical activities in the country maintenance of statistical norms and standards, providing liaison with control, state and international statistical agencies.
- 2) See Section 21.2
- 3) See Section 21.2
- 4) See Section 21.2

Check Your Progress 2

- 1) The data like estimates of national income and related macro economic aggregates (for example Personal Disposable Incomes, Saving, Consumption, Capital Formation etc.) which provide a comprehensive view of the internal and external transactions of the economy over a period form the system of National Accounts.
- 2) 1948-49, 1960-61, 1970-71, 1980-81, 1993-94, 1999-2000.
- 3) RBI – The Handbook of Statistics on the Indian Economy, CMIE – National Income Statistics, EPWRF publication on NAS and SDP etc.
- 4) Directorates of Statistics and Economics.

Check Your Progress 3

- 1) See Section 21.4
- 2) The annual document of NAS published by CSO.
- 3) See Section 21.5

UNIT 22 AGRICULTURAL AND INDUSTRIAL DATA

Structure

22.0 Objectives

22.1 Introduction

22.2 Agricultural Data

22.2.1 Agricultural Census

22.2.2 Studies on Cost of Cultivation

22.2.3 Annual Estimates of Crop Production

22.2.4 Livestock Census

22.2.5 Data on Production of Major Livestock Products

22.2.6 Agricultural Statistics at a Glance (ASG)

22.2.7 Another Source of Data on Irrigation

22.2.8 Other Data on the Agricultural Sector

22.3 Industrial Data

22.3.1 Data Sources Covering the Entire Industrial Sector

22.3.2 Factory Sector – Annual Survey of Industries (ASI)

22.3.3 Monthly Production of Selected Industries and Index of Industrial Production (IIP)

22.3.4 Data on Unorganised Industrial Sector

22.3.5 Industrial Credit and Finance

22.3.6 Contribution of Industrial Sector to GDP

22.4 Let Us Sum Up

22.5 Exercises

22.6 Some Useful Books

22.7 Answer or Hints to Check Your Progress Exercises

22.0 OBJECTIVES

After going through this Unit, you will be able to:

- know the kind of agricultural data available;
- explain the different sources of agricultural data and different data generating agencies;
- describe the characteristics of multivariable industrial data; and
- know how to access the different types of agricultural and industrial data.

22.1 INTRODUCTION

In the previous unit, we have looked at data on macro variables like National Income, Saving and Investment, which tell us about the dimension and broad structure of the economy and the direction in which the economy is moving.

We shall now look at two of the sectors of the economy in this unit. One is the agricultural sector that provides livelihood to roughly two-thirds of the total workforce in the country. The other is the industrial sector, which consists of manufacturing, power, gas and water supply.

22.2 AGRICULTURAL DATA

You are already aware of the importance of agriculture to the Indian economy and indeed to the Indian way of life. You would, therefore, like to examine several aspects of agriculture like the level of production of different crops and commodities, the availability and utilization of important inputs for agricultural production, incentives, availability of post-harvest services and the role of agriculture in development. Similarly, you would like to know about the livestock and their products, fisheries and forestry, people engaged in these activities and so on. All these analyses require enormous amount of data over time and space. Let us have a look at what kind of data are available and where.

The **Directorate of Economics and Statistics (DESMOA)** in the **Department of Agriculture and Cooperation** (website <http://eands.dacnet.nic.in>) and the **Animal Husbandry Statistics Division (AHSD)** of the **Department of Animal Husbandry, Dairy and Fisheries** (website <http://dahd.nic.in/dahd/statistics/animal-husbandry-statistics.aspx>) in the Ministry of Agriculture are the major sources of data on agriculture and allied activities. Among the major efforts at collection of data mounted at regular intervals, the following are the major ones:

- i) the quinquennial agricultural census and the input survey;
- ii) the cost of cultivation studies;
- iii) annual estimates of crop production;
- iv) the quinquennial livestock census; and
- v) integrated sample survey to estimate the production of major livestock products.

DESMOA releases statistics on agriculture and allied activities flowing from its work and also collected from other division (like the **Agricultural Census Division**) and Departments of the Ministry of Agricultural and other Ministries and agencies in their comprehensive annual publication **Agricultural Statistics at a Glance (ASG)**¹. Other publications include, “**Cost of Cultivation in India**”, the monthly bulletin “**Agricultural Situation In India**”. **AHSD** publishes the data flowing from its activities [which include the activities mentioned at (iv) and (v) above] and those collected from other divisions of the Department of Animal Husbandry, Dairy and Fisheries and other agencies in its biennial publication **Basic Animal Husbandry Statistics (BAHS)**.

22.2.1 Agricultural Census

Agriculture Census forms part of a broader system of collection of Agricultural Statistics. It is a large-scale statistical operation for the collection and derivation of quantitative information about the structure of agriculture in the country. An

¹ This can be accessed in the **Ministry of Agriculture (Department of Agriculture) website** . One can also access www.data.gov.in and click on

agricultural operational holding is the ultimate unit for taking decision for development of Agriculture at micro level. It is for this reason that an operational holding is taken as the statistical unit of data collection for describing the structure of agriculture. Through Agriculture Census it is endeavored to collect basic data on important aspects of agricultural economy for all the operational holdings in the country. Aggregation of data is done at various levels of administrative units. The agricultural census started in 1970-71. The ninth of these censuses relates to the reference year 2010-11.

Periodic Agriculture Censuses are important as these are the main source of information on basic characteristics of operational holdings such as land use and cropping patterns, irrigation status, tenancy particulars and the terms of leasing. This information is tabulated by different size classes and social groups including Scheduled Castes/Scheduled Tribes which are needed for development planning, socio-economic policy formulation and establishment of national priorities. The census also provides the basis for the development of a comprehensive integrated national system of agricultural statistics and has links with various components of the national statistical system. The whole project of Agriculture Census in the country is implemented in three distinct phases, which are statistically linked together but focus on different aspects of agricultural statistics. In Phase-I, a list of holdings with their area and social characteristics and gender of the holders is prepared. In Phase-II, detailed data on agricultural characteristics of holdings are collected from selected villages. Thus the whole operation of Agriculture Census in India is not really a complete Census. In fact, it is a combination of Census and Sample Survey.²

The third phase, which is better known as the **Input Survey** and conducted in the year following the census year³, relates to collection of data on the pattern of input-use across crops, regions and size-groups of holdings. The main objective of the input survey is to generate data on consumption of various agricultural inputs, according to major size-groups of operational holdings, viz., marginal (below 1 ha.), small (1- 1.99 ha.), semi-medium (2- 3.99 ha.), medium (4- 9.99 ha.) and large (10 ha. and above), for getting an insight into the consumption pattern of inputs by various categories of farmers. This information is vital for planning production, imports and distribution of fertilizers. The inputs covered in the survey include chemical fertilizers, HYV seeds, pesticides, farmyard manures/compost, bio-fertilizers, agricultural implements and machinery, livestock and agricultural credit besides data on input use including use of certified/notified seeds, high yielding variety seeds, pest control measurements adopted by cultivators, educational qualification, age and size of households of operational holders are captured through Input Survey. The results of the first phase, including the all-India report of the first phase of the ninth agricultural census can be accessed at <http://agcensus.nic.in/agcen201011.html>. The provisional results of the second phase have also been released. Data collection and processing of the third phase is progressing in the different States and UTs. Selective information is also available on the **internet**⁴ through a query-based facility and can provide data on operational

² This part is reproduced from <http://agcensus.dacnet.nic.in/>, which can be accessed to get the latest data, up to tehsil level from Agricultural Census 2013.

³ The input survey was initiated in the 1975-76 Agricultural Census and conducted in 1976-77.

⁴ On the website <http://agcensus.dacnet.nic.in/nationalholdingtype.aspx>, one can access tables related to agricultural census years 1995-96 to 2010-11. Further, On the website <http://inputsurvey.dacnet.nic.in/nationalsummary.aspx> one can access the tables related to 1996-97 to 2006-07 so far.

holdings at the national, State, district and *tehsil* levels by type, characteristics and size class/group. You can, for example, get information on operational holdings by size class of the holding, social group (Scheduled Caste, Scheduled Tribe, Other and all groups) and tenancy characteristics of the holding (lease terms, land use, irrigation status, irrigation by sources, wells and tube wells, gross cropped area, cropping pattern, and area dispersal. Clearly, there is a time lag in the availability of agricultural census and Input Survey results.

22.2.2 Studies on Cost of Cultivation

DESMOA implements a comprehensive scheme for studying the cost of cultivation of principal crops in India and this results in the collection and compilation of field data on the cost of cultivation and production in respect of 29 principal crops leading to estimates of crop-wise and State-wise costs of cultivation and also computation of the *index of the terms of trade between agriculture and non-agricultural sectors*. The scheme covers 19 States and foodgrain crops, oil seeds and commercial crops and selected vegetables. Statistics of cost of cultivation of principal crops are published by **DESMOA** in its publication “**Cost of Cultivation in India**” and also in **ASG**. The **Commission for Agricultural Costs and Prices (CACP)** makes use of the estimates of cost of cultivation and production and the structure of cost of cultivation flowing from these studies, along with an analysis of a wide spectrum of data on variables like market prices, productivity of the crops concerned, domestic and global inter-crop price parity, the terms of trade between the agricultural and the non-agricultural sectors and the supply-demand situation in arriving at their recommendations to Government on Minimum Support Prices (MSP). The **CACP reports** thus contain not only the data thrown up by the cost of cultivation studies but also those assembled by it from various sources for its work. For example any of the **CACP report** presents:

- i) estimates of cost of cultivation per hectare, cost of production per quintal, and the value of the main product and the byproduct;
- ii) the breakup of the cost by inputs like human labour, bullock labour, machine labour, seed, fertilizers and manures, insecticides, irrigation charges and so on;
- iii) a variable input price index; and
- iv) month-end wholesale prices of the commodities concerned by variety and location.

for all the commodities dealt with in the report and for all states. In addition, it gives information on the index number of whole sale prices for farm inputs, index numbers of whole sale prices of cereals, pulses, etc., and data on a host of aspects relevant to the subject matter of the report like area, production, yield of major crops, buffer stock of cereals and month-wise and area-wise daily wage rates for agricultural labour⁵. MSPs for different commodities are also published in **ASG**.

⁵ The cost of cultivation studies reports and related data can be accessed at http://eands.dacnet.nic.in/Cost_of_Cultivation.htm. Now, the data is available for reference years 2004-05 to 2011-12. The details regarding the work of CACP and the data presented in **CACP reports** are based on the information available in the **CACP website** <http://cacp.dacnet.nic.in>. The MSP up to agricultural year 2014-15 can be viewed in the link <http://cacp.dacnet.nic.in/ViewContents.aspx?Input=1&PageId=36&KeyId=0A>.

The other useful outcome of the cost of cultivation studies, as already mentioned, is the **index of the terms of trade between the agricultural and non-agricultural sectors**. This is defined as

$$\text{Index of the Terms of Trade} = \frac{\text{IPR [Index of Prices Received]}}{\text{IPP [Index of Prices Paid]}}$$

(Base Year : the triennium ending 1991-92)

The numerator relates to the prices that the agricultural sector gets for its produce while the denominator relates to the prices that the sector pays for products it purchases for final consumption, intermediate consumption and capital formation. The time series of ITT from 1981-82 onwards, complete with individual values of IPR and IPP and those of the component indices of IPP, namely, final consumption (weight in IPP 73.54), intermediate consumption (weight in IPP 21.63) and capital formation (weight in IPP 4.83) are published in **ASG**.

The Terms of Trade, specifically, the terms of trade between agriculture and industry is the ratio of agricultural prices to industrial prices, both measured as price indices. The terms of trade between agriculture and industry lies at the heart of the government's policy in the agricultural sector. A rise in the ratio (agricultural prices divided by industrial prices) means that the agricultural sector is better off in terms of its purchasing power of industrial goods. Suppose there are just two goods in the economy, bananas and pins and you produce and sell bananas. Both initially cost Rs. 10. If now both prices go up by 100 per cent, nothing happens to the terms of trade and purchasing power remains unchanged. If instead, banana prices go up by 100 per cent and the price of pins doesn't, then as a banana manufacturer you are better off since one banana can now buy two pins instead of one. The ratio or the terms of trade between bananas and pins has doubled. Substitute agriculture for bananas and industry for pins and you can get what a rise in agriculture's terms of trade does for farmers.⁶

The National Statistical Commission has pointed out that there is a sizeable time lag in the availability of results for use in the work of CACP and that steps should be taken to cut down delays in the release of the results of these studies⁷.

22.2.3 Annual Estimates of Crop Production

DESMOA makes and releases annual estimates of area, production and yield in respect of principal crops of foodgrains, oil seeds, sugar cane, fibres and important commercial and horticulture crops. These crops account for about 87 per cent of the total agricultural output. Estimates of area are based on a reporting system that is a mix of complete coverage and coverage by a sample, those of yield are based on a **system of crop cutting experiments** and **General Crop Estimation Surveys**. The preparation of these estimates takes time. Estimates of crop production are, however, needed earlier and in fact even

⁶ This part is taken from an article published in the economic times ET classrooms series, which can be accessed at http://articles.economictimes.indiatimes.com/2002-02-04/news/27340862_1_bananas-issue-prices-trade.

⁷ Report of the national Statistical Commission, Chapter 4.

before the crops are harvested, for policy purposes. Advance estimates of crop production are, therefore, made. The first assessment of the *kharif* crop is made in the middle of September, that is, when the South-West Monsoon is about to be over. The second advance estimate – a second assessment of the earlier estimate of the *kharif* crop and the first assessment of the *rabi* crop – is made in January. The third advance estimate is made at the end of March or the beginning of April and the fourth in June. The methodology for estimating area and yield of crops and for making advance estimates are given in **ASG**. Estimates of annual⁸ production of the principal crops mentioned above, gross area under different crops and yield per hectare of these crops and Index Numbers on these variables with base year the triennium ending 2007-08 = 100⁹ are also available in **ASG** in the form of a time series. So are estimates of production of crops by States.

Check Your Progress 1

- 1) Give two major sources of data on Agriculture and allied activities like dairy and fisheries.

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- 2) How can you retrieve the agricultural census data at district and tehsil level?

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- 3) How are annual estimates of crop production made by the Directorate of Statistics and Economics?

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⁸ Season-wise in some cases.
⁹ The base of these index numbers is a triennium in order to even out year to year to fluctuations of the underlying variable(s). The earlier base TE 1981-82 for these index number series was changed to TE 1993-94 in 2000-01 in order to update the index numbers and also for these to be in harmony with the index numbers of wholesale prices and industrial production with base 1993-94 = 100.

22.2.4 Livestock Census

The last quinquennial livestock census, the nineteenth in the series, was conducted in 2012. The census has collected information, district-wise on livestock, poultry, fishery and also agricultural implements. Livestock covers cattle, buffaloes, sheep, goats, pigs, horses and ponies, mules, donkeys, camels, yak, *mithun* and also, dogs and rabbits. These are classified by age (appropriate for the species), sex, breed, function ('breeding', 'work', 'both' and 'others' for males and 'in milk' or 'dry' in the case of females). Poultry covers cock, hen, duck, and drake, which are classified as *desi* and 'improved' varieties. Fishery covers fishing activity (inland capture, inland culture, marine capture and marine culture), members involved in fishing (male, female and child), persons engaged in fishing (part time male, full time male, part time female and full time female) craft/gear, namely, trawlers, gin-netters, liners, seiners, motorized canoe/*maran*, non-motorized canoe/*maran*, and miscellaneous gears like trawler-net, gill netter-net, cast-net, drag-net, hook lines, set barriers and others. Each of these classes except the last one is further classified into size (length) and horsepower. Agricultural implements cover annually operated implements, animal operated implements, plant protection equipment, water lifting devices, tractor and power operated implements, equipment for livestock and poultry and horticulture tools. Each group provides further data on four or five specific equipments like for example, thresher under the first group, ST Plough under the second, TPO Spray under the third, diesel under the fourth, Crawler Tractor under the fifth, incubator under the sixth and power operated tools under the seventh group.

The provisional results of the 2012 census are available on the website of the Department of Animal Husbandry, which can be accessed at <http://dahd.nic.in/dahd/WriteReadData/Livestock.pdf>. **ASG** and **BAHS** also present some data from the livestock census.

22.2.5 Data on Production of Major Livestock Products

AHSD is responsible for collection of statistics on animal husbandry, dairy and fisheries. These are published, as already mentioned, in **BAHS**. The latest relates to 2004. This presents data up to 2003-04, on

- i) long time series of estimates of production of milk, eggs, meat and wool;
- ii) State-wise short time series of such estimates;
- iii) State-wise and national estimates of per capita availability of milk and eggs;
- iv) contribution of cows, buffaloes and goats to milk production and of fowls and ducks to egg production in different States in 2003-04;
- v) average annual growth rates of production of major livestock products, milk, eggs and wool;
- vi) short time series on imports and exports of livestock and livestock products;
- vii) short time series on area under fodder crops, pastures and grazing in different States;
- viii) estimates of dry and green fodder production in different States during the three-year period ending 2002-03;

- ix) a short time series on the no. of artificial inseminations performed in different States;
- x) achievements in key components of dairy development;
- xi) livestock and poultry (numbers) in India and in different States – 1992, 1997 and 2003; and
- xii) time series on world livestock production and milk production.

22.2.6 Agricultural Statistics at a Glance (ASG)

The pocket book on agricultural statistics and the agricultural statistics at a glance are two annual publications available in the website http://eands.dacnet.nic.in/latest_2006.htm. One of the most important statistics, which is the statistics on Land utilization, is available in the **ASG**. As for inputs and access of individual operational holdings to such inputs, **ASG** provides data on:

- i) Methodology of crop estimation,
- ii) Socio-economic indicators: population and growth rates, State-wise classification of cultivators, Gross State Domestic Product for agriculture and allied activities,
- iii) Outlays, expenditure and capital formation in agriculture,
- iv) Area, production and yield of principal crops: target and achievement of production of major crops, three largest producing States of important crops, season-wise area, production and yield of food grains (rice, wheat, jowar, bajra, maize, total pulses, gram, tur, masur, nine oilseeds, groundnut, rapeseed and mustard, soyabean, sunflower), cotton, jute, mesta, sugarcane, tobacco, guarseed, etc.; yield rates of principal crops, area and yield under the high yielding varieties, area and production of horticulture and plantation crops (potato, onion, coconut, cashewnut, arecanut, garlic, ginger, sweet potato, turmeric, chillies, cardamom, pepper);
- v) All-India index numbers of area, production and yield of principal crops;
- vi) Area, production and yield of major crops in different countries;
- vii) Minimum support prices/marketed surplus ratios of various agricultural commodities;
- viii) Procurement by public agencies, per capita net availability of foodgrains, consumption and stocks of foodgrains and raw jute,
- ix) Import and export of agricultural commodities, tariffs and bound rates of major agricultural commodities, trends in wholesale price index of foodgrains and commercial crops;
- x) Land use statistics: agricultural land by use in India, selected categories of land use;
- xi) Inputs: production and use of agricultural inputs (fertilizers, crop-wise distribution of certified/quality seeds, consumption of electricity for agricultural purposes, flow of institutional credit for agricultural sector, state-wise number of kisan credit cards, state-wise/season-wise national agricultural insurance scheme, etc.

- xii) Agricultural census data: number and area of operational holdings by size group – marginal (size less than one HA¹⁰ area), small (1 to 2 HA), semi-medium (2 to 4 HA), medium (4 to 10 HA) and large (more than 10 HA), area irrigated by different source of irrigation and by size class and the position in different States;
- xiii) Estimated number of rural households, farmer households, indebted farmer households by size class of land possessed;
- xiv) Ceiling on land holding and wages for agricultural work;
- xv) Livestock population in India, all-India and State-wise production of milk, eggs, meat and wool;
- xvi) Fish production in India and States;
- xvii) Rainfall scenario and management of natural disaster.

The subjects **Subsidies** is a much-debated subject nowadays and agricultural subsidies in developing countries and developed countries of Europe and in USA are also much in the news. The Ministry of Agriculture provides a time series of the amount of subsidy given to agricultural with its break-up into subsidy for (i) fertilizers (ii) electricity, and (iii) irrigation¹¹, (iv) other subsidies given to marginal farmers and Farmers Cooperative Societies in the form of seeds, development of oil seeds, pulses, etc. One can easily derive the size of the total subsidy relative to GDP in current prices. The limitations to which these figures are subject need to be kept in mind.

22.2.7 Another Source of Data on Irrigation

The data on irrigation presented in **ASG** (referred to the proceeding subsection) is based on crop statistics collected by **DESMOA** from village through a mix of a reporting system and sample surveys. The **Central Water Commission (CWC) under the Ministry of Water Resources** collects hydrological data on the important river systems in the country through 877 hydrological observation sites. The Ministry also conducts periodic **Censuses of Minor Irrigation Works** along with a sample check to correct the Census data. The **five Census** conducted so far related to **1986-87, 1993-94, 2000-01, 2006-07 and 2013-14**. This is conducted in all States/UTs except in Daman & Diu and Lakshadweep. The reports can be seen in the **website of the Ministry <http://micensus.gov.in>**. The **Report of the Minor Irrigation Census 2006-07** provides information on the 20.7 million minor irrigation works in the country like the share of ground water and surface water works, crop-wise utilization of the irrigation potential created, the manner in which the water is distributed in the field – sprinkler, drip, open channel or underground water irrigation and state-wise distribution of these variables.

The National Commission on Statistics had in their report made the following observations¹² on irrigation data available from **DESMOA** and the **Ministry of Water Resources**:

¹⁰ HA: abbreviation for hectare.

¹¹ The rates for supply of water to farmers are kept low as a matter of policy. This results in a loss to the Government Irrigation System. The excess of operating costs over gross revenue is treated as imputed irrigation subsidy.

¹² Chapter 4 of the Report.

- i) The **CWC** had a large volume of data on various aspects of irrigation without any statistical analysis of such data being carried out. The **CSO** and the **CWC** need to get together and ensure that the data collected is analysed and put to use by the statistical machinery.
- ii) There is a large variation between the statistics on the “area irrigated” published by **DESMOA** and the “irrigation potential actually utilized” published by the Ministry of Water Resources.
- iii) Data users should be made aware of the reasons for such variation – differences (if any) in concepts, definition etc.
- iv) The reluctance on the part of the State Governments to furnish data in view of their vested interest in the sharing of water is an added problem.
- v) Data from both the sources – **DESMOA** and the **Ministry of Water Resources** – are available after a large time lag and this needs to be reduced.

22.2.8 Other Data on the Agricultural Sector

Data on forest cover is, already mentioned, as part of land-use statistics presented on the basis of nine fold land-use classification in **ASG**. **Forest Survey of India (FSI)** also collects data on forest cover (dense forest, open forest and mangroves) through a biennial survey by making use of Remote Sensing (RS) technology since 1987. The latest survey relates to 2013. Digital interpretation has reduced the time lag in the availability of such data obtained earlier through periodic reports from field formations. There are discrepancies between the data on forest area given by **ASG** and those given by **FSI** due to differences in the concepts and definitions used by the two organizations in collecting data. Data on production of industrial wood, minor forest produce and fuel wood are available with the **Principal Chief Conservator of Forests in the Ministry of Environment and Forests**.

The National Bank for Agriculture and Rural Development (NABARD) is another agency that is closely involved in agriculture, especially in the matter of credit to the sector through cooperatives. The **annual reports of NABARD and its publication like “Statistical Statements Relating to the Cooperative Movement in India”** (Part I deals with credit societies and the other with non-credit societies) and **“Key Statistics on Cooperative Banks”**, besides **NABARD’s website** (<https://www.nabard.org/english/home.aspx>) would be useful source of information on agricultural credit.

Statistics on area, production and yield of crops and subsidies given to agriculture are also available as time series in the **Economic Survey, expenditure budget documents of the Ministry of Finance and the RBI Handbook of Statistics on Indian Economy** (<http://rbidocs.rbi.org.in/rdocs/Publications/PDFs/000HSE13120914FL.pdf>). The third source is important in the context of the policy direction to banks and all financial institutions to ensure that 40 per cent of the total institutional credit should flow to the priority sector of which agricultural sector forms a part. The data warehouse of the RBI can be accessed at <http://dbie.rbi.org.in>. **The RBI Handbook of Statistics on Indian Economy – 2013-14** publishes time series data on:

- i) National income, saving and employment from 1952-53 onwards;

- ii) Output and prices of agricultural production, from 1956-57 onwards;
- iii) Assets and liabilities of the RBI, components of money stock, etc. from 1962-63 onwards;
- iv) Select aggregates of Scheduled Commercial Banks (SCBs), like demand deposit, time deposit, borrowings from RBI, liabilities to banks, investment in Government securities, food credit, non-food credit, cash in bank, balance with RBI, assets with banks from 1956-57 onwards;
- v) Sectoral deployment of non-food gross bank credit; industry-wise deployment of gross bank credit;
- vi) Direct and indirect institutional credit to agriculture and allied activities, 1975-76 onwards;
- vii) SCB's direct finance to farmers according to size of land holdings, 1985-86 onwards;
- viii) the distribution of non-food credit by priority sector credit and credit for other sectors;
- ix) the share of agriculture in priority sector credit;
- x) Financial market: structure of interest rate, etc.;
- xi) Public finances: key deficit indicators of central Government, major components of receipts of central Government, key deficit indicators of state governments, pattern of receipts of state governments, etc.;
- xii) Trade and balance of payment, etc.

Direct credit to agriculture is also available from other institutions and the Handbook furnishes data on:

- i) the short and long term loans issued by each of the institutions – Cooperatives, Scheduled Commercial Banks (SCBs), Regional Rural Banks (RRBs) and the State Governments directly to beneficiaries or borrows for agriculture and activities allied to it during a year; and
- ii) the loans outstanding at the end of each year.

Institutions like SCBs, Cooperative, RRBs and the Rural Electrification Corporation (REC) provide indirect credit to agriculture and allied activities. This is routed through some other agency, conduit or tier like the Electricity Boards (EBs), the Primary Agricultural Credit Societies (PACS), the Farmers' Service Societies (FSS), the Large-sized *Adivasi* Multi-Purpose Societies (LAMPS) and State-supported corporations and agencies. Such indirect credit is designed to promote agricultural productivity or to increase the agricultural income of the ultimate beneficiary, through a number of steps like distribution of fertilizers and other inputs to these activities, loans to EBs and loans to farmers through PACS, FSS and LAMPS. Other types of indirect credit include advances to State-supported corporations and agencies for onward lending of funds (up to Rs. 10,000/-) to weaker sections of society engaged in agriculture, namely, small and marginal farmers and those engaged in activities allied to agriculture.

We have already seen in the preceding Unit (on Macro-variable like national income) that **National Accounts Statistics (NAS)** publishes data on the contribution of agriculture and its sub-sectors to GDP and other measures of

national/domestic product. **NAS** also provides information on value of output of various agricultural crops including those of drugs and narcotics, fibers, fruits and vegetables, livestock products like milk group products, meat group products, eggs, wool and hair, dung, silkworm cocoons and honey, forestry products like industrial wood, firewood and minor forest produce, inland fish and marine fish. It also furnishes data on capital formation in agriculture and animal husbandry, forestry and logging and fishing.

Check Your Progress 2

- 1) How can you access the data on per-capita availability of milk, egg, wool, cow and buffaloes?

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- 2) What do you mean by the term ‘cropping intensity’?

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- 3) Which document contains the data on subsidy given to agriculture?

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- 4) Name the document which contains the data on food and non food credit provided by Scheduled Commercial Banks.

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22.3 INDUSTRIAL DATA

The industrial sector can be divided into a number of subgroups. This grouping is different from grouping by economic activity. Such divisions arise from framework factors like applicability or coverage or certain laws, employment size of establishments or groupings for purposes of promotional support by Government. Such groupings are the organized and unorganized sectors, the factory sector (covered by the Factories Act, 1948 and the Bidi and Cigar Workers Condition of Employment Act, 1966), small-scale industries, cottage industries, handicrafts, *khadi* and village industries (KVI), directory establishments (DE), non-directory establishments (NDE), own account enterprises (OAE)¹³. Attempts have been made to get at a detailed look at the characteristics of some of these sub-sectors of the industrial sector, as the data sources covering the whole sector often do not provide information in such detail. Let us now examine the kind of data available for such individual subgroups of the industrial sector and those that cover the entire industrial sector.¹⁴

22.3.1 Data Sources Covering the Entire Industrial Sector

There are five sources that cover the whole spectrum of economic activity or non-agricultural activities and therefore, the entire industrial sector. However, four of these sources give data only on levels of industrial employment:

- i) The first source is the **decennial Population Census**. This provides data on the levels of employment in various economic activities across the economic spectrum, and therefore, the industrial sector, down to the latest NIC¹⁵ three-digit code levels. Thus, Census 1991 provides data at 3-digit level of NIC 1987, Census 2001 provides data at 3-digit level of NIC 1998 and Census 2011 will be providing data at 3-digit level of NIC 2008. It also provides (i) employment levels in each of the three-digit NIC code classified by Occupational Divisions [the first digit of the National Classification of Occupations 1968 (NCO 1968)], (ii) industrial employment in broad industrial sectors (a nine-fold classification of economic activities is considered¹⁶) classified by broad age groups, and (iii) industrial employment in broad sectors (nine-fold classification, as above) by levels of education. Such details are available up to district levels. These data, however, become available after a time lag of 4-5 years after completion of the Census field-work.
- ii) The second source consists of the **quinquennial sample surveys** relating to labour force, employment and unemployment conducted by the National Sample Survey Office (NSSO). These surveys also provide similar type of data on industrial employment, down to State levels, separately for rural and urban and males and females. Data by the districts can also be tabulated, with a suitable caution for the district level sample sizes, as the

¹³ DEs are those establishments that employ at least six persons. NDEs are establishments that employ at least one but not more than five employees. OAEs are the self-employed.

¹⁴ One distinction between the economic activity classification and the industrial sector classification is the placement of Mining and Quarrying industries. Although this is a part of "primary sector" under the economic activities, it is considered as a part of industrial sector.

¹⁵ See the section on India Statistical System in Unit 20 on Macro-Variable Data: National Income etc.

¹⁶ Same as footnote 15 given above.

primary data collected (unit record data) can be obtained on CDs from NSSO¹⁷. Key results from the NSSO surveys are available after about six months, while the final report becomes available one year after the surveys are completed.

- iii) **The third source is the Economic Census**, which has been conducted in 1977, 1980, 1990, 1998, 2005 and 2012. The Economic Census covers all economic enterprises in the country except those engaged in crop production and plantation and provides data on employment in these enterprises¹⁸. This provides a frame for the conduct of more detailed follow up (enterprise) surveys covering different segments of the unorganized non-agricultural sectors, which in turn throw up data on production and employment in these segments, useful for an analytical study of these segments and in the compilation of national accounts.
- iv) **The fourth source is the Employment Market Information (EMI) programme of the Directorate General of Employment & Training (DGE&T), Union Ministry of Labour & employment and the Directorate of Employment** under the State Governments. This is based on the statutory quarterly employment returns furnished by non- agricultural establishments in the private sector employing 10 or more persons and all public sector establishments. This source of industrial employment provides data at quarterly intervals down to district level. The quarterly data are available with a time lag of about a year. Detailed data at the level of three digit NIC 1987 codes are available in the Annual Employment Reviews based on this programme with a time lag of about two years. While data at national and State levels would be available from the National reports, district level data would be available from the State reports. This source or course covers only the organized sector.
- v) The fifth source consists of the periodic unorganized sector surveys of the NSSO, which covers the unorganized non-agricultural enterprises. These surveys, usually conducted as follow-up surveys of the Economic Census, provide data on characteristics of the enterprises, its 5-digit NIC code, operating expenses, receipts, gross value added, fixed assets, liabilities and the number of workers working on a regular basis in the enterprise. Similar characteristics for the informal sector enterprises are also tabulated and published from these survey data by the NSSO. These data are tabulated and published at State levels, separately for rural and urban. Data by the districts can also be tabulated, with a suitable caution for the district level sample sizes, as the primary data collected (unit record data) can be obtained on CDs from NSSO¹⁹. Key results from the NSSO surveys are available after about six months, while the final report becomes available one year after the surveys are completed.

¹⁷ You can see the rate list of NSSO unit level survey data from http://mospi.nic.in/Mospi_New/upload/nssoratelists_UnitData.pdf.

¹⁸ **The report on the Economic Census 1998** is available on the website of the Ministry of Statistical and Programme Implementation (MoSPI) www.mospi.nic.in. The website of MoSPI announces that the site's new address is www.mospi.gov.in. **The report on the Economic Census 2005** has been released by the Ministry on the 12th June, 2006, according to news item "Rural enterprises growing faster – Employment rate high in J & K: Economic Census 2005" appearing on page 11 of The Hindu, Chennai Edition, dated Tuesday the 13th June, 2006. The Ministry's website does not say anything about the 2005 report till 14/6/06.

¹⁹ You can see the rate list of NSSO unit level survey data from http://mospi.nic.in/Mospi_New/upload/nssoratelists_UnitData.pdf.

There are, however, other sources that provide data on production or on a variety of interrelated aspects of industry like employment, output, inputs and so on. Let us consider these sources.

22.3.2 Factory Sector – Annual Survey of Industries (ASI)

Collections of industrial statistics on aspects like output, employment, input and value added was initiated as early as 1944, when an annual **Census of Manufacturing Industries (CMI)** was launched, covering factories registered under the Indian Factories Act, 1934 and employing 20 or more persons and using power. Subsequently, a **Sample Survey of Manufacturing Industries (SSMI)** was started from 1949. While the former was restricted to only 29 of the 63 groups of industries, SSMI covered the remaining 34 groups of industries. As soon as the Factories Act, 1948 came into force, the coverage of both CMI and SSMI was extended to cover factories registered under the Factories Act, 1948 employing 10 or more persons and using power and those employing 20 or more persons without using power. The **CMI and SSMI reports** constituted the main source of data on different aspects of the factory sector up to 1958²⁰. A brief coverage of the ASI can be seen at the site <http://www.csoisw.gov.in/CMS/En/1024-asi-manual.aspx> and at <http://www.csoisw.gov.in/cms/cms/Files/572.pdf>.

The annual Survey of Industries (ASI) replaced the CMI and the SSMI in 1960 after the Collection of Statistics Act, 1953 and the Collections of Statistics Rules, 1953 came into force. Detailed industrial statistics relating to industrial units in the country²¹ like capital, output, input, value added employment and factor shares are collected in ASI. The survey was launched in 1960 and has been conducted every year since then except in 1972. From 2011, the ASI is conducted under the Collection of Statistics Act 2008 and the Collection of Statistics Rules 2011, except in the State of Jammu and Kashmir, where it is conducted under the State Collection of Statistics Act, 1961 and the rules framed thereunder in 1964. The frames used for the survey consists of:

- a) all factories registered under Sections 2m(i) and 2m(ii) of the Factories Act, 1948 employing 10 or more workers using power as well as those employing 20 workers but without using power;
- b) *bidi* and cigar manufacturing establishments registered under the *Bidi and Cigar Workers (Conditions of Employment) Act, 1966* with coverage of units as in (i) above;
- c) certain servicing activities like water supply, cold storage, repair of motor vehicles and other consumer durables like watches etc. Though servicing industries like motion picture production, personal services like laundry services, job of dyeing, etc., are covered under the Survey but data are not tabulated separately, as these industries do not fall under the scope of industrial sector defined by the United Nations. Defence establishments, oil storage and distribution depots, restaurants, hotels, café and computer services and the technical training institutes, etc., are excluded from the purview of the Survey.

²⁰ The ASI section of the CSO website.

²¹ The coverage was extended to Jammu & Kashmir with the passing of the Collection of Statistics Act, 1961 (Jammu & Kashmir) and the notification of the Collection of Statistics Rules, 1964 under that Act.

The frames for the ASI are revised every year. At the time of revision, the deregistered factories are removed and newly registered factories are added in the frame. In ASI 2013-14, more than 2.65 lakh units were in the ASI frame, up from about 2.52 lakh units in ASI 2012-13. The “factory sector” thus consists of factories, *bidi* and cigar manufacturing units, electricity sector and some service units. Electricity units registered with the CEA, the departmental units such as railway workshops, Road Transport Corporation workshops, Government Mints, sanitary, water supply, gas storage, etc., are not covered from 1998-99 as there are alternative sources of data for CSO for purposes of compiling GDP estimates in respect of these segments of industry.

The reference period for the survey is the accounting year April to March preceding the date of the survey. The sampling design and the schedules for the survey were revised in 1997-98, keeping in view the need to reduce the time lag in the availability of the results of the survey. The survey will not, however, attempt estimates at the district level. The survey used NIC 1987 for classifying economic activities before ASI 1997-98 and shifted to NIC 1998 with effect from ASI 1998-99²². From ASI 2009-10, the NIC 2008 codes are being used.

CSO has released the final results of ASI 2011-12 and provisional results of ASI 2012-13. Results in respect of selected characteristics are available in electronic media at various levels of aggregation²³:

- All India by 4-digit level of NIC 2008,
- State by 3-digit level of NIC,
- Unit level with suppressed identification, etc.

All the reports of previous years can be accessed on the **website of the Ministry of Statistics and Programme Implementation (MoSPI)**. These results are:

- 1) **Time series data (1980-81 to 2007-08)** of principal characteristics²⁴ of the factory sector;
- 2) principal characteristics by major industry group;
- 3) principal characteristics by major States;
- 4) estimates of some important characteristics by States for 2002-03;
- 5) estimates of some important characteristics by 3-digit code of NIC 1998;
- 6) rural-urban break-up of principal characteristics; and

²² NIC 1987 and NIC 1998 contain concordance tables to enable data users to recast data of earlier years from one NIC structure to another.

²³ You can download the ASI 2011-12 reports from the ASI portal of the CSO at <http://www.csoisw.gov.in/CMS/cms/Home.aspx>.

²⁴ The principal characteristics are: 1) no. of factories, 2) fixed capital, 3) working capital, 4) invested capital, 5) outstanding loans, 6) no. of workers, 7) mandays of workers, 8) no of employees, 9) mandays – employees, 10) total persons engaged, 11) wages to workers, 12) total emoluments, 13) old age benefits, 14) social security benefits, 15) other benefits, 16) fuels consumed, 17) total inputs, 18) products, 19) value of output, 20) depreciation, 21) net value added, 22), rent paid, 23) interest paid, 24) net income, 25) gross fixed capital formation (GFCF) 26) (a) material, fuels, etc., (b) semi-finished goods, (c) finished goods, 27) total, 28) gross capital formation (GCF), 29) profits.

- 7) principal characteristics by type of organization²⁵.
- 8) estimates for structural ratios and technical coefficients for factory sector from 2006-07.

Data users can find out from the **website (click on ASI DATA COST)** to find out what data – **tables or unit record data** –are available and the cost of obtaining the same from CSO.

CSO had earlier published **ASI 2010-11 final (detailed) results in two volumes**. These volumes present data at the 3-digit and 4-digit level of NIC 1998 codes for the national level and at the 3-digit level of NIC 1987 codes for individual States. Data on the following aspects of the industries forming part of the factory sector are presented:

- i) Capital employed, input, output and gross value added (GVA),
- ii) Employment, mandays and wages,
- iii) Fuel consumed,
- iv) Material consumed,
- v) Products and by-products.

These volumes as well as those relating to earlier years are available also on electronic media. In addition, **CSO has also released time series data on ASI in 5 parts – Volumes I relates to ASI 1959-71, Volume II, Series A to ASI 1973-74 to 1981-82, Volume II, Series B to ASI 1982-83 to 1988-89, Volume III, Series A to ASI 1989-90 to 1993-94 and Volume III, Series B to 1994-95 to 1997-98**. These volumes present data on important characteristics for all-India at two-digit and three-digit NIC code levels and for the States at two-digit NIC code levels. These publications are **also available in electronic media on payment**.

The database on the **Annual Survey of Industries, 1973-74 to 2009-10** also provides time series ASI data on the principal characteristics of the factory sector, along with concepts and definitions used. The data **can be procured from the EPWRF on payment**.

The data available from ASI can be used to derive estimates of important technical ratios like capital-output ratio, capital-labour ratio, labour cost per unit of output, factor shares in net value added and productivity measures for different industries as also trends in these parameters. The most important use of the detailed results arises from the fact that these enable derivation of estimates of

- i) the input structure per unit of output at the individual industry; and
- ii) the proportions of the output of each industry that are used as inputs in other industries, enabling us to use the technique of input-output analysis to evaluate the impact of a change effected in (say) the output of an industry on the rest of the economy. The construction of the Input-Output

²⁵ Types of organization are 1) proprietorship, 2) joint family (HUF), 3) partnership, 4) public limited company, 5) private limited company, 6) govt departmental enterprises, 7) public corporations, 8) corporate sector (4+5+6+7), 9) *Khadi& Village Industry*, 10) handloom industry, 11) cooperative sector, 12) others (including 'not recorded').

Transaction Tables (I-OTT) for the Indian economy is largely based on ASI data. As we know, I-OTT provides the basic ratios required for Input-Output Analysis, which has a wide range of uses, from analysis of economic structure and backward and forward linkages of different industries to the setting up of targets of production, investment, employment and so on at the macro level.

22.3.3 Monthly Production of Selected Industries and Index of Industrial Production (IIP)

CSO prepares and releases **monthly indices of industrial production (IIP)** and also the **monthly use-based index of industrial production (base year 2004-05)**. IIP with base year 2004-05 was first released in April 2005. The base year for IIP was earlier 1993-94²⁶. IIP with the new base year has (i) a wider coverage of items than the IIP with base year 1993-94, (ii) the weighting diagram of the new index has taken into account the contribution of the unorganized manufacturing sector, (iii) small scale industry items have been given individual weights in the weighting diagram of the new index, (iv) the revised IIP series follows NIC 2004 (the earlier one followed NIC 1987) and (v) the new IIP is released within six weeks of the reference month. The IIP (2004-05) is a quantitative index based on production data received from 16 source agencies covering 682 items clubbed into 399 item groups in the basket of items of the index.

The Directorates of Statistics and Economics of the State Governments and Union Territory Administrations (DESSs) had been preparing **IIPs for their respective areas**. These IIPs were not comparable with each other or with that prepared by CSO for the country as a whole because of differences in the base year, basket of items, data and methodology used for the construction of the indices. The question of preparing State-wise IIPs that are comparable with the national IIP was, therefore, examined and State Governments and Union Territory Administrations have initiated work in this regard on the basis of the recommendations made in this regard. The preparation and release of IIP is at different stages in different States and Union Territories. For example the **Governments of Tamil Nadu, Andhra Pradesh, West Bengal, Assam, Goa, Punjab, Haryana, Rajasthan and Maharashtra have released the new IIP prepared** as a result of these efforts and **others are in the process of preparing such IIPs**.

CSO releases Quick Estimates of IIP within six weeks of the closing of the reference month. CSO has released the **IIP for December, 2014** through the **Press Release dated 12th February 2015**. The Release provides estimates of

- monthly IIP – overall index and for sectors (mining, manufacturing and electricity) – for the period April, 2014 to December, 2014;
- monthly IIP at 2-digit level NIC 2004 code for December 2013 and December 2014 and the cumulative index for the period April-December 2014; and

²⁶ Change in the base of IIP is necessary to measure the real growth in the industrial sector. The United Nations Statistical Office (UNSO) recommends that the base year should be changed quinquennially. IIP was first prepared in India with the base year as 1937. The base year was then changed to 1946, 1951, 1956, 1960, 1970, 1980-81, 1993-94 and 2004-05.

- monthly IIP use-based index (basic goods, capital goods, intermediate goods, consumer goods, consumer durables, consumer non-durables) for the period April, 2014 to December, 2014.

CSO follows the SDDS norms of the International Monetary Fund (IMF)²⁷ in respect of estimates of IIP and, accordingly, the Press Release of the 12th February 2015 announces that IIP for January 2015 would be released on the 12th March 2015. **This Press Release is accessible in the MoSPI website.** The website also has time series data at 2-digit level NIC code on (a) monthly IIP from April, 1994 (b) annual averages from 1994 and also on the monthly use-based IIP. Similar time series data on (a) monthly IIP with base year 1980-81 at 2-digit level of NIC 1970, and (b) monthly use-based IIP (base year 1980-81) are also available from April, 1990.

The Reserve Bank of India's (RBI) "Handbook of Statistics on the Indian Economy" also presents IIP at two-digit-level, the use-based IIP and index numbers of Infrastructure Industries²⁸ as also data on production in selected industries. Monthly statistics of mineral production are published by **the Indian Bureau of Mines (IBM), Nagpur in their publication "Monthly Statistics of Mineral Production"**. It also releases mineral group-wise and State-wise value of mineral products. The latest data available while writing this chapter was from March 2013²⁹. The **CSO publication "Energy Statistics"** bring together important data on different sources of energy in the country at one place. It presents time series data that give a broad picture of the trends in production, consumption and price indices of major sources of conventional energy in the country for last 30 years. **The ministries of Petroleum and Gas, Power and Non-Conventional Energy** provide information in their respective spheres of activity. The **Economic Intelligence Services (EIS) of CMIE, Mumbai** has volumes on **Energy and Infrastructure** that present detailed data on the trends in these sectors. A visit to the **EPWRF website** (click with words EPWRF through the Google search engine) would also be rewarding in terms of time series data on industrial production. At the global level, the International Energy Agency (IEA) is considered as one of the most authoritative organisations in dealing with energy issues. The IEA publishes the world Energy Outlook. The latest one, World Energy Outlook 2014, was published in November 2014. The IEA portal <http://www.iea.org/statistics/> also provides for search of statistics by country. IEA online data services provide monthly data on oil and gas, quarterly energy prices, etc. However, data from this site are to be purchased, be it hard copy, CD-RoM or pdf files. The UNSD also compiles and publishes energy statistics in a comparable manner for 224 countries of the world. The reports, although a bit dated, can be downloaded free of charge from their website³⁰.

²⁷ See Indian Statistical System in Unit 18 on "Macro Variable Data: National Income, Saving, Investment".

²⁸ Infrastructure industries are electricity, coal, steel, cement, crude petroleum and refined petroleum products. These industries are part of the basket of items of IIP and the Index for Infrastructure Industries can be computed from the indices for the individual infrastructure industries.

²⁹ These can be accessed from the IBM website <http://ibm.nic.in/msmpmar13.htm>.

³⁰ You can visit the link <http://unstats.un.org/unsd/energy/yearbook/2011/004-10.pdf> and read the introduction to the Yearbook to have an idea of the data being made available by them.

Check Your Progress 3

1) Indicate the major sources of data on levels of industrial employment. Which one is the most and which one the least frequent? Which of the sources shall you use for your analysis, if the analysis are to be done i) for backward districts and ii) for major States of India?

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2) How can you access the report of the economic census 1998?

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3) What do you understand by quarry based system developed by CSO?

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4) List two important uses of ASI data.

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5) From which document can you have data pertaining to various sources of energy?

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22.3.4 Data on the Unorganised Industrial Sector

The Development Commissioner for Small Scale Industries (DCSSI) in the Ministry of Small Scale Industries, in the Central Government and the Directorates of Industries of State Government and Union Territory Administration provide data on small-scale industrial units registered with the latter set of agencies. The DCSSI has conducted a census of small scale industrial units thrice – in 1973-74 (reference year 1972), 1990-91 (reference year (1987-88) and in November, 2002 (reference year 2001-02). The results of the third census can be seen in the publication **“Final Results: Third all India Census of SSI – 2001-02”** released by the Ministry of Small Scale Industries. Broad details of the performance of small-scale industries are available in the Annual Reports of the Ministry of Small Scale Industries. **Time series data on employment, production, labour productivity in small-scale industries (SSI)** and value of exports of the products of small-scale industry are also available in the **RBI Handbook**. Data on some parts of **Khadi and Village Industries Commission (KVIC)**, handlooms and handicrafts do get included in ASI but data relating exclusive to these sub-sectors are available in the Annual Reports of these organizations or in the **Annual Reports of the Ministries under which these Boards/Commissions function**.

Surveys of unorganized sector enterprises conducted once in five or six years contribute to the strengthening of the database of the unorganized sector. The following **rounds of the NSSO** provide data on input, output, value added, fixed assets, liabilities, number of working owner, hired worker and other worker (most of whom would be unpaid family workers) and related data on the unorganized non-agricultural sector. You can become a user in the website of the MoSPI and download relevant reports for your research, free of cost. You can also purchase relevant micro data from the MoSPI.

NSS Round No.	Reference Year	Subject coverage
67 th	July 2010 – June 2011	Unorganised Non-agricultural Enterprises (excluding construction)
63 rd	July 2006 – June 2007	Unorganised service sector enterprises (excluding construction)
62 nd	July 2005 – June 2006	Unorganised manufacturing Enterprises
57 th	July 2001 – June 2002	Unorganised service sector enterprises (excluding construction and finance)
56 th	July 2000 – June 2001	Unorganised manufacturing Enterprises
55 th	July 1999 – June 2000	Informal sector non-agricultural enterprises (excluding finance)
53 rd	January – December 1997	Unorganised trading Enterprises
51 st	July 1994 – June 1995	Unorganised manufacturing Enterprises
46 th	July 1990 – June 1991	Unorganised NDTE and DTE (trading) Enterprises
45 th	July 1989 – June 1990	Unorganised manufacturing Enterprises

At the global level, the UN International Labour Organisation (ILO) supports surveys on employment and child labour related issues. The Laborsta database and the Key Indicator of Labour market (KILM) of the ILO contains comprehensive country level comparable estimates on labour force³¹, employment and unemployment, forced labour, informal economy and labour migration related data. The UN Industrial Development Organisation (UNIDO) has recently developed the world productivity database, providing total factor productivity and related indicators.

We have looked at data sources that provide data on production and also on certain related variables like capital employed, employment etc. How is the capital financed? Let us look at some of the sources that throw light on these matters.

22.3.5 Industrial Credit and Finance

The RBI Handbook on Statistics of the Indian Economy provides time series data on the sectoral deployment of non-food gross bank credit provided by Scheduled Commercial Banks to different sectors of the economy which enables you to study trends in the flow of bank credit to small-scale industry, medium and large industries, wholesale trade other than food production and export credit. This would enable you to evaluate the implementation of the policy regarding allocation of bank and institutional credit to the priority sector, which includes small-scale industries. It also provides time series data on deployment of bank credit to some 25 industrial categories and power. In addition, it presents time series data on the health of SSI and non-SSI units – (a) the number of SSI units that are sick, (b) the number that are weak, (c) the number of non-SSI units that are sick, and (d) the amounts outstanding (loans) from each of these categories of units.

The **ASI** provides, as you have seen, some data on financial aspects of industries – fixed capital, working capital, invested capital, loans outstanding and also the interest burden of industrial units (up to the 4-digit NIC code level). From where and how have the industries raised capital needed by them? We have looked at one source of capital or working capital, namely, bank credit. Time series data on new capital issues and the kinds of shares/instruments issued (ordinary, preference or rights share or debentures, etc.,) and the composition of those contributing to capital (like promoters, financial institution, insurance companies, government, underwriters and the public) are also presented. Data on assistance sanctioned and disbursed by financial institutions like Industrial Development Bank of India (IDBI), Industrial Credit and Investment Corporation of India (ICICI), Small Industrial Development Bank of India (SIDBI) and Life Insurance Corporation (LIC) of India can also be obtained from the **Handbook**. Similarly, some data on the financing of project costs of companies are available in the **Handbook**. All these data of course relate to companies, which may include non-industrial ventures too. The primary source of such data is the Ministry of Company Affairs. The publication of the Securities Exchange Board of India (SEBI) **“Handbook of Statistics on the Indian Securities Market” (the latest one published in 2012)** provides annual and monthly time series data on industry-wise classification of capital raised through the securities market – the industrial sector activities by which the classification is being made are, cement

and construction, chemical, electronics, engineering, entertainment, finance, food processing, health care, information technology, leather, metal mining, packaging, paper and pulp, petrochemical, plastic, power, printing and rubber. A reference to the two volumes of EIS, CMIE, one “Industry: Financial Aggregates” and the other “Industry: Market Size and Shares” would be rewarding.

Foreign direct investment (FDI) is another important source of capital finance for industrial expansion. Availability of data on FDI is dealt with in Unit 22 on Trade and Finance.

22.3.6 Contribution of Industrial Sector to GDP

The National Accounts Statistics (NAS), as we have seen in UNIT 18 on National Income, Saving, Investment, furnishes information on the contribution of the industrial sector to GDP. NAS presents a short time series of estimates of (i) value of output and GDP of each two-digit NIC code level industry in the registered and the unregistered sub-sector of the manufacturing sector, (ii) value of output of major and minor minerals and GDP and NDP of the mining & quarrying sector, and (iii) GDP and NDP of the sub-sectors electricity, gas and water supply.

Check Your Progress 4

- 1) Name the agencies which generate the data on small scale industries.
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- 2) How can you get the data on deployment of bank credit to SSI units?
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- 3) From which sources you can get the data on credit flowing to small scale sector?
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22.4 LET US SUM UP

The major efforts to collect data on different aspects of the agricultural sector are the quinquennial agricultural census, the quinquennial livestock census, the cost of cultivation studies, annual estimates of crop production and the integrated sample survey to estimate the production of major livestock products. Most of the data flowing from these efforts relate to production, inputs for production, land utilization patterns, intensity of land use, irrigation, costs and pricing of agricultural produce, procurement and distribution, subsidies and credit are found in the two publications “**Agricultural Statistics at a Glance**” (ASG) and “**Basic Animal Husbandry Statistics**” (BAHS). Statistics on the characteristics of land holdings of different size with reference to the parameters referred to above are also available in ASG. More detailed information in this regard, collected in the successive **agricultural census** are available in the **Ministry’s website**. Similarly, detailed information relating to sub-sectors – livestock, poultry and fishery as also agricultural implements, collected in the **livestock censuses**, are available in the **website of the Ministry**, though some information relating to the earlier census are available in ASG and BAHS of relevant years. Data on credit flowing to the agricultural sector are available in the **RBI Handbook of Statistics on the Indian Economy** and **NABARD’s Publications**. Another source containing comprehensive information on agriculture at the global level is the FAO statistical yearbooks published by the UN Food and Agriculture Organisation.

The most detailed data available in the industrial sector relates to the factory sector provided by ASI. The multi-variable data covers about 30 characteristics – investment, inputs, output, gross and net value added, employment, factor shares, net value added at 3 or 4-digit NIC code levels by States and Union territories. Quick estimates of monthly production in selected industries and the Index of Industrial Production are available within six weeks of the reference month from the CSO and revised in the next two months. The State Governments and Union Territory Administrations are also taking steps to prepare and release monthly IIPs that are comparable to the national level IIP. Some have already started releasing such estimates. The **fourth census of micro, small and medium enterprises (MSME) relating to 2006-07** is the most recent and comprehensive source for data on production, employment and exports of the small-scale sector. Reports from the NSSO on surveys of the unorganized sector carried out once in five or six years provide useful data on the characteristics of this sector. Enquiries covering the entire industrial sector or the organized industrial sector such as the **population census**, **NSSO surveys on employment**, the **Economic Census** and the **Employment Market Information Programme** of the Ministry of Labour & Employment provide data only on employment. The **RBI handbook** gives data on industrial credit and financing of industrial capital. The **CMIE (EIS) volumes on industry**, one on **financial aggregates** and the other on **market size and shares** provide a fund of data on finance and market competition aspects of industry. At the global level, the International Labour Organisation (ILO) provides statistics on employment and the UNIDO provides statistics on total factor productivity.

22.5 EXERCISES

- 1) Which major efforts have been made to collect the data on different aspects of agricultural sector?
- 2) Discuss the characteristics of data flowing from the agencies involved in compilation of agriculture data.
- 3) “The detailed data available in the industrial sector relates to the factory sector” explain.
- 4) Do you think that data available on unorganized sector is inadequate? What suggestion would you like to make in this regard?

22.6 SOME USEFUL BOOKS

Amitabh Kundu & Alakh Sharma (Ed.) (2001) : Informal Sector in India – Perspectives & Policies, Institute for Human Development & Institute of Applied Manpower Research, IP Estate, Ring Road, New Delhi.

____ National Sample Survey Office (NSSO) (Various issues) : Survey Reports of unorganized sector enterprise surveys NSSO, Ministry of Statistics & Programme Implementation, Govt of India, Sardar Patel Bhavan, New Delhi.

Department of Agriculture & Coop : Agricultural Statistics At a Glance, Directorate of Economics & Statistics (DES), Ministry of Agriculture, Govt. of India, Krishi Bhavan, New Delhi. Cost of Cultivation in India, DES, Ministry of Agriculture & Cooperation, New Delhi.

Reports of the Commission on Agricultural Costs and Prices (CACCP), DES, Ministry of Agriculture & Cooperation, New Delhi.

Indian Horticulture Data Base, Ministry of Agriculture & Cooperation, New Delhi

____ Ministry of Finance : Economic Survey, Ministry of Finance, North Block, New Delhi.

____ Reserve Bank of India (various issues) : RBI Handbook of Statistics on the Indian Economy. The Reserve Bank of India, Mumbai

www.mospi.nic.in : Website of the Ministry of Statistics & Programme Implementation. (even the letters cso in google search will lead you to the (CSO website).

eands.dacnet.nic.in : Directorate of Economics and Statistics, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India

www.wrmin.nic.in : Website of the Ministry of Water Resources.

www.rbi.org.in : Website of the Reserve Bank of India (RBI).

www.fao.org : UN Food and Agriculture Organisation (FAO) website.

- www.ilo.org** : UN International Labour Organisation (ILO) website.
- www.unido.org** : UN Industrial Development Organisation (UNIDO) website.

22.7 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

- 1) The Directorate of Economic and Statistics in the Department of Agriculture and Statistics and Animal Husbandry Statistics Division of the Department of Animal Husbandry.
- 2) See foot note no. 2 and 4.
- 3) See Sub-section 22.2.3 and foot note no. 6.

Check Your Progress 2

- 1) See Sub-section 22.2.4 and 22.2.5
- 2) See foot note no. 8.
- 3) Agricultural Statistics at a glance.
- 4) RBI Handbook of Statistics on Indian Economy 2005.

Check Your Progress 3

- 1) See Sub-section 22.3.1
- 2) See foot note no. 18
- 3) A system that enables the data uses to access specific data relating to ASI.
- 4) Derivation of important technical ratios for using the principal characteristics of factory sector.
- 5) Energy Statistics published by CSO.

Check Your Progress 4

- 1) Development commissioner for Small Scale Industries (DCSSI).
- 2) Directorate of Industries of State Government and Union Territory Administrations.
- 3) SIDBI, LIC, Handbook of statistics on the Indian Security Market.

UNIT 23 TRADE AND FINANCE

Structure

- 23.0 Objectives
- 23.1 Introduction
- 23.2 Trade
 - 23.2.1 Merchandise Trade
 - 23.2.2 Services Trade
- 23.3 Finance
 - 23.3.1 Public Finances
 - 23.3.2 Currency, Coinage, Money and Banking
 - 23.3.3 Financial Markets
- 23.4 Let Us Sum Up
- 23.5 Exercises
- 23.6 Some Useful Books
- 23.7 Answers or Hints to Check Your Progress Exercises

23.0 OBJECTIVES

After going through this Unit, you will be able to:

- describe the kind of data available in India in the area of trade and finance;
- state the various sources of data on trade and finance;
- explain the reasons for divergence between merchandise trade deficit/surplus data provided by DGCI&S and RBI's BOP data; and
- discuss which agencies are involved in compilation of data on trade and finance.

23.1 INTRODUCTION

Trade is the means of building up an enduring relationship between countries and the means available to any country for accessing goods and services not available locally for various reasons like the lack of technical know-how. It is also the means of earning foreign exchange through exports so that such foreign exchange could be utilized to finance essential imports and to seek the much-needed technical know-how from outside the country for the development of industrial and technical infrastructure to strengthen its production capabilities. Trade pacts or agreements between countries or groups of countries constitute one way of developing and expanding trade, as these provide easier and tariff-free access to goods from member countries. While efforts towards such an objective will be of help in expanding our trade, globalization and the emergence of World Trade Organization (WTO) have only sharpened the need to ensure efficiency in the production of goods and services to compete in international markets to improve our share of world merchandise trade and trade in services. Trade is also closely tied up with our development objectives. Trade deficit or surplus, made up of deficit/surplus in merchandise trade and trade in services, contributes to current account deficit

or surplus. Data on trade in merchandise and services would enable us to appreciate the trends and structure of trade and identify areas of strength and those with promise but need sustained attention.

While trade and finance have been closely bound up with each other ever since the time money replaced barter as the means of exchange, finance is the lifeline of all activities – economic, social and administrative activities. It flows from the public as taxes to Government, as savings to banking and financial institutions and as share capital or bonds or debentures to the entrepreneur. It then gets used for a variety of developmental and non-developmental activities through Government and other agencies and flows back to members of the public as incomes in various ways, as factor incomes. It would therefore, be of interest to know how funds get mobilized for various purposes and get used. This Unit looks at the kind of data available that could enable us to analyse this mobilization process and the flows of funds to different areas of activity. Let us begin to discuss the data on trade.

23.2 TRADE

23.2.1 Merchandise Trade

The Directorate General of Commercial Intelligence and Statistics (DGCI&S) collects and compiles statistics on imports and exports. It releases these data at regular intervals through their **publications** and through **CDs**. It prepares “**Quick Estimates**” on aggregate data of exports and imports and principal commodities within two weeks of the reference month and releases these in the monthly press release. It publishes

- 1) A monthly brochure “**Foreign Trade Statistics of India (Principal Commodities and Countries)**” containing provisional data issued to meet the urgent needs of the Ministry of Commerce, other government organizations, Commodity Boards (CBs), Export Promotion Councils (EPCs) and research organizations. It contains commodity-wise, country-wise and port-wise foreign trade information;
- 2) “**Monthly Statistics of Foreign Trade of India, Volume I (Exports including re-exports) & Volume II (Imports)**” containing detailed data on foreign trade at the 8-digit level codes of the ITS (HTS) (see below);
- 3) **Quarterly publications :**
 - a) **Statistics of the Foreign Trade of India by Countries – Vol I (Exports including re-exports) and**
 - b) **Statistics of the Foreign Trade of India by Countries – Vol II (Imports)**
- 4) **Annual publications:**
 - a) **Statistics of the Customs and Excise Revenue Collections of the Indian Union,**
 - b) **Statistics of the Inland Coasting Trade Consignment of India,**
 - c) **Inter-State Movements/ Flows of Goods by Rail, River and Air,**
 - d) **Statistics of Foreign and coastal Cargo Movements of India,**
 - e) **Selected Statistics of the Foreign Trade of India;**

- 5) The **DGCI&S website (www.dgciskol.nic.in)** has two parts, one consists of static pages and the dynamic pages. The first contains the history and the activities of DGCI&S and summary data on principal commodities, and countries and is updated regularly. The dynamic pages are mainly for on-line data dissemination and provide access on free and payment basis. This contains at least 24 months final foreign trade data at 8-digit commodity and principal commodity level and updated regularly; and
- 6) **The Priced Information Service System (PISS)** provides information to private parties, EPCs, CBs, Foreign Embassies etc., on payment basis @ Re. 1/- per unit record of information. It does not give the whole basket of 8-digit commodity-country data for any particular period for reasons of 'copyright' provision of the DGCI&S. It however, provides aggregate and detailed data to **Centre for Monitoring Indian Economy (CMIE), Mumbai** for an efficient trade intelligence service.
- 7) It also has a web-based data dissemination system for online data transaction through advance payment. The export and import trade data are available countrywise and economic regionwise. The detailed data on India's foreign trade in merchandise are made available after completion of the third month from a particular month. Here the commodities referred to in these data stand for the ones specified in the ITC(HS) against 8-digit codes which have been developed by the DGCI&S by sub-dividing the 6-digit codes of Harmonised System as internationally standardised. If you want to get data online, you can visit http://www.dgciskol.nic.in/new_registration.asp and see the terms, conditions and procedures.

The DGCI&S data are also presented as time series data in the **Reserve Bank of India Handbook of Statistics on the Indian Economy**. As mentioned above the **CMIE** is another source – **their volume on Foreign Trade and BoP**. The **EPWRF** (see its website – google search with **EPWRF** will enable you to access it) also publishes time series data on foreign trade – it is one of the 35 sets of special statistics on which it publishes long time series data along with information on conceptual and methodological issues.

Foreign trade data published by DGCI&S relates to merchandise trade through all recognized seaports, airports, land customs stations and inland container depots located all over India. Data on exports include re-exports and relate to the free on board (f.o.b.) values and imports relate to cost, insurance and freight (C.I.F.) values. Exports and imports are based on a general system of recording. According to this, exports relate to Indian merchandise and re-export relates to foreign merchandise previously imported into India. Imports relate to foreign merchandise, whether these are intended for consumption in India, bonding or re-exportation.

The commodities comprising merchandise imports and exports are classified according to a standard classification. The trade classification in vogue in India between April, 1977 and March, 1987 was the Indian Trade Classification, Revision 2 (ITC – Rev. 2) – one that was based on the Standard International Trade Classification Revision 2 (SITC – Rev.2). A new system of commodity classification, known as Indian Trade Classification (based on the Harmonized Commodity Description and Coding System), or ITC(HS), has been adopted since April, 1987. ITC (HS) is an extended version of the International Classification System called "Harmonized Commodity Description and Coding

System” evolved by the World Customs Organization, Brussels¹. These changes in the trade classification of commodities mean that time series data on export and import relating to some commodities may not be strictly comparable. Another element of non-comparability of time series data arises from changes in the definition of countries and/or groups. For example, data for Russia prior to 1993-94 relate to erstwhile USSR, with the exception of 1992-93, the data for which relate to the Commonwealth of Independent States (CIS) representing a group of 15 countries². Similarly, Indian trade with Germany relates to Federal Republic of Germany (FRG) till 1989-90 and to the unified Germany thereafter. There are also changes in the membership of groups like the European Union, and Oil and Petroleum Exporting Countries (OPEC) from time to time.

What would we like to know about foreign trade? The volume of trade, that is, the volume of exports and imports, the size of export earnings, the expenditure on imports, the size of exports relative to imports, earning from exports compared to expenses incurred on imports since exports earn foreign exchange while imports imply outflow of foreign exchange. We should like to know about the trends in these variables. Besides looking at the trends in the quantum and value of imports and exports, it is important to analyse the growth in foreign trade both in terms of value and volume, since both are subject to changes over time. Exports and imports are made up of a large number of commodities and fluctuations in the export and imports of individual commodities contribute to overall fluctuations in the volume and value of exports and imports. We, therefore, need a **composite indicator of the trends in trade**. The index number of foreign trade of a country is a useful indicator of the temporal fluctuations in exports and imports of the country in the term of **value, quantum and unit price and** so on. Similarly, measures of the terms of trade could be derived from such indices relating to imports and exports.

The index number of foreign trade is computed and presented as Unit Value Index (UVI) and Quantum Index (QI). These are defined as follows:

$$UVI = [\sum P_1 Q_t] / [\sum P_0 Q_t] \dots\dots\dots (1)$$

$$QI = [\sum P_0 Q_t] / [\sum P_0 Q_0] \dots\dots\dots (2)$$

where P_1 is the unit value of an item in the current period and Q_t is the quantity of the same item in the current period, P_0 and Q_0 are the unit value and the quantity respectively of the same item during the base period and Σ is the summation over all commodities. These indices have been computed with 1979-80 as the base year.

Three types of Terms of Trade are computed from these indices:

- 1) Gross Terms of Trade (GTT) = $100 \times [(QI \text{ of imports}) / (QI \text{ of exports})]$
- 2) Net Terms of Trade (NTT) = $100 \times [(UVI \text{ of exports}) / (UVI \text{ of imports})]$
- 3) Income Terms of Trade (ITT) = $[NTT \times QI \text{ of exports}] / 100$
 $= [UVI(\text{exports}) \times QI(\text{exports})] / [UVI(\text{imports})]$.

The existing index numbers have the base year 1979-80. Changes in the ITC since April, 1987 and the recasting of the basket of commodities to suit the new

¹ This organization was previously known as Customs Cooperation Council.

² These were Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyz republic, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

classification system, the base year 1979-80 has become too old to serve the purpose of temporal comparability and the new ITC adopted in April, 1987. The DGCI&S, therefore, decided to construct new index numbers with the **base year 1998-99**. It also decided to bring out global monthly indices and for selected countries. The preparation of these index numbers is in progress.

What kinds of data are available on foreign trade? Time series on the following data are published in the **RBI Handbook of Statistics of the Indian Economy 2013-14, under the sub-heading “Trade and Balance of Payments”**:

- a) India’s foreign trade (in US \$ and Indian Rupees) from 1975-76 to 2013-14, The exports and imports have been shown as total and in two groups, namely, oil and non-oil. The “Trade Balance”, i.e., exports – imports is also given for each of these three groups. A negative figure meaning exports are less than imports. You can observe from this Table that India had a positive non-oil trade balance, albeit sporadically, till 2003-04. However, after that, trade balance for both oil and non-oil has become negative.
- b) Exports (in US\$ and Indian Rupees) of principal commodities, from 1998-99 to 2013-14³;
- c) Imports (in US\$ and Indian Rupees) of Principal Commodities⁴, from 1998-99 to 2013-14;
- d) Exports (in US\$ and Indian Rupees) of selected commodities to principal countries;
- e) Direction of Foreign Trade (in US\$ and Indian Rupees) showing exports and imports for each year by trade areas, groups of countries and countries; and within each group of countries or trade area, data are presented only for selected countries⁵;
- f) Year-wise indices, both UVI and QI, for imports and exports from 1976-77 to 2007-08 (base 1978-79 = 100) and 1999-2000 to 2013-14 (base 1999-2000 = 100) the three terms of trade measures; GTT, NTT and ITT;

³ Commodities were classified into 4 groups (including total), namely, primary products, manufactured goods, petroleum products and others; sub-divided further in into 11 sub-groups and 44 items: A. Agriculture and allied Products (15 items), 2. Ores and Minerals (3 items), 3. Leather and manufactures, 4. Chemicals and related products (4 items), 5. Engineering goods (6 items), 6. Textile and textile products (11 items), 7. Gems and jewelry, 8. Handicrafts, excluding handmade carpet; 9. Other Manufactured Goods; 10. Petroleum products; and 11. Others.

⁴ The classification of imports consisted of three broad groups, I Bulk Imports, II Non-bulk Imports and III Total Imports; Bulk Imports were further divided into three groups, namely, A. Petroleum, Crude and Products; B. Bulk Bulk Consumption Goods (consisting of 4 sub-items); C. Other Bulk Items (9 sub-items); Non-bulk Import were A. Capital Goods (8 sub-items), mainly export related items (4 sub-items) and Others (9 sub-items).

⁵ The trade areas for which data are presented are: I OECD countries, II OPEC, III Eastern Europe, IV Developing Countries, V Others (Unspecified). Each of these trade areas is further divided into country-group and within each group figures are given only for some selected countries. Trade area I is divided into A. European Union (within which data for 6 selected countries are given). B. North America (2 selected countries). C. Asia & Oceania (2 selected countries) and D. Other OECD Countries (1 selected country). II and III have no further grouping of countries within them but figures for 6 selected countries under II and for 2 selected countries under III are presented. Trade area IV is divided into A. Asia, B. Africa and C. Latin America Countries. A gets further grouped into (a) SAARC (figures for all countries are given under this), (b) Other Asian Developing Countries (figures for 6 selected countries are given). Figures for 7 selected countries under Africa are given and for Latin America no further break up by countries are given.

- g) Index numbers of Exports – QI and UVI for 9 commodity groups⁶ from 2005-06 onwards (base 1999-2000 = 100).
- h) Index numbers of Imports - QI and UVI for 9 commodity groups⁷ from 2005-06 onwards (base 1999-2000 = 100) Similar type of data on imports.
- i) India's overall Balance of Payment (in US \$ and Indian Rupees) under: A current account, B capital account, C. errors and omissions, D. overall balance and E. Monetary movements from 2008-09 onwards.
- j) Invisibles by category of transactions (in US \$ and Indian Rupees) from 1994-95 onwards.
- k) Exchange rate of Indian Rupee vis-à-vis US \$, UK £, DM/€ and Japanese ¥ from 1975 onwards (calendar year – annual average, financial year – annual average and end year rates).
- l) Real Effective Exchange Rate (REER) and Net Effective Exchange Rate (NEER) of Indian Rupee 36-country bilateral weights) with base 2004-05 from calendar year 2005 onwards.
- m) Indices of REER and NEER.
- n) External assistance in the form of loans and grants from 1985-86 onwards (in US \$ and Indian Rupees), authorization, utilization and debt service payments.
- o) NRI deposits outstanding (in US \$ and Indian Rupees) from 1996 onwards in different types of accounts like NR (E)RA, FCNR(A), FCNR(B), NR(NR)RD, NRO, FC (B&O)D, FC(O)N and total. It has increased from US \$17.446 billion in 1996 to US \$103.844 in 2014.
- p) Foreign investment inflows (in US \$ and Indian Rupees) namely, gross investments, repatriation/ disinvestment, FDI by India, net foreign direct investment, net portfolio investment from 2000-01 onwards.
- q) Foreign exchange reserves (in US\$ and Indian Rupees) from 1956-57 onwards.
- r) India's external debt (in US \$ and Indian Rupees) from 1996 onwards⁸, which, inter alia, provides concessional debt as percentage of total debt, short term debt as % to total debt, debt stock-GDP ratio (%) and debt service ratio (%).

⁶ The commodity groups are: I Food and live animals (6 sub-groups), II. Beverages and Tobacco, III. Crude materials, inedible, except fuel (4 sub-groups), IV. Mineral fuels, lubricants and related materials (3 sub-groups), V. Animal and vegetable oil, fats and waxes, VI. Chemicals and related products (6 sub-groups), VII. Manufactured goods classified chiefly by material (5 sub-groups), VIII. Machinery and transport equipment (9 sub-groups) and IX. Misc. manufactured articles (4 sub-groups). In a few cases, indices for specific commodities under a sub-group are also given.

⁷ The commodity groups are: I Food and live animals (5 sub-groups), II. Beverages and Tobacco (2 sub-groups), III. Crude materials, inedible, except fuel (7 sub-groups), IV. Mineral fuels, lubricants and related materials (3 sub-groups), V. Animal and vegetable oil, fats and waxes, VI. Chemicals and related products (8 sub-groups), VII. Manufactured goods classified chiefly by material (7 sub-groups), VIII. Machinery and transport equipment (9 sub-groups) and IX. Misc. manufactured articles (3 sub-groups). In a few cases, indices for specific commodities under a sub-group are also given.

⁸ The debts are classified into I. Multilateral, II. Bilateral, III. International Monetary Fund, IV. Trade credit, V. Commercial borrowing, VI. NRI & FC (B&O) deposits, VII. Rupee debt, VIII. Total long-term debt, IX. Short-term debt and X. Gross total debt. Most of the groups have sub-groups A. Government borrowing, and B. Non-Government borrowing, further disaggregated into concessional and non-concessional borrowing.

Some of these data are from the DGCI&S and the rest are from the **Balance of Payments (BoP)** data of the RBI. The **BoP** data reported by RBI show the value of merchandise imports on the debit side and that of exports on the credit side. It also shows trade balance – a trade deficit or a trade surplus – depending upon whether the difference ‘export - imports’ is negative or positive. These are all shown in the balance payment format as part of current account, which also shows another entity ‘invisibles’. However, there is a divergence in trade deficit/surplus in merchandise trade shown by **DGCI&S data** and that shown by **RBI’s BoP data**. This discrepancy between the two sources also affects data on current account deficit (CAD) or surplus (CDS), since current account deficit/surplus is the total of trade deficit/surplus and net invisibles (inflow of invisibles net of outflow in the category ‘invisibles’⁹) For example, the **Economic Advisory Council to the Prime Minister noted, in its Report on Balance of Payments (BoP)** submitted to the Prime Minister recently, that the divergence between the two sources of data on trade was growing¹⁰. It noted that trade deficit is projected for the year 2005-06 at 5.2 per cent of GDP on the basis of trade data from DGCI&S, while it is 7.7 per cent according to RBI’s BoP data – a difference of the size of 2.5 per cent of GDP. CAD based on trade data of DGCI&S is only 0.3 per cent of GDP while it is 2.9 per cent of GDP if the estimate of CAD is based on trade data from BoP. The reasons for the divergence in the data between the two sources are, as noted by the Council:

- DGCI&S tracks physical imports and exports while BoP data tracks payment transactions relating to merchandise trade;
- DGCI&S data do not capture Government imports, which are exempted from customs duty. Defence imports fall into this category; and
- DGCI&S data do not capture imports that do not cross customs boundary (for example, oil rigs and some aircrafts) while they are still paid for and get captured in BoP data.

23.2.2 Services Trade

Besides export and import of merchandise, a number of services, like transportation services, travel services, software, Information technology-Enabled Services (ITES), business services and professional services are exported and imported. These are captured by “non-factor services” included in the entry “Invisibles” in the **Tables on India’s Overall BoP and on Key Components of India’s BoP in the RBI Handbook**. The handbook has also a table (Table 140 in RBI’s Handbook of 2013-14) that gives the distribution of ‘invisibles’ by transactions – credit, debit and net, under the Current Account, giving separately for a) Services: Travel, Transportation, Insurance, G.n.i.e, Miscellaneous (software services, business services, financial services and communication services); b) Transfers: Official, Private; c) Income: investment income, compensation of employees.

Check Your Progress 1

- 1) What kind of Trade Data is compiled by DGCI&S?

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⁹ See under the section on Finance later in this Unit.

¹⁰ News report in the Hindu dated February, 23, 2006 Chennai edition – Business page.

- 2) What is the existing base year for constructing unit value Index and quantum index by DGCI&S?

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- 3) What are the reasons for divergence between two sources of trade data?

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- 4) List the various transactions covered in the 'net invisibles'.

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23.3 FINANCE

The finance sector consists of public finances, the central bank or the Reserve Bank of India, the scheduled banks, urban and rural cooperative banks and related institutions. The financial market consists of the stock exchanges dealing with scripts like shares, bonds and other debt instrument, the primary and secondary markets, the foreign exchange market, the treasury bills market and the securities market where financial institutions, mutual funds, foreign institutional investors, market intermediaries, the market regulator the Securities Exchange Board of India (SEBI), the banking sector and the RBI all play important roles. It also has the insurance (life and general) and pension funds as well as their respective regulators, i.e., the Insurance Regulatory and Development Authority (IRDA) and the Pension Funds Regulatory and Development Authority (PFRDA). It has the holding companies, which invest in various subsidiaries and controls its operations through its stocks¹¹. There is also the unorganized sector made up of financial operators like individual money-lenders and pawn shops, insurance agents, unregistered stock brokers/

¹¹ One example of a Holding Company is Tata Sons, whose subsidiaries include TISCO, TCS, Tata Motors, Tata Housing, etc.

sub-brokers, etc. In the System of National Accounts, 2008 (SNA 2008)¹², the financial sector has been sub-divided into nine sub-sectors, depending on its type of business.

23.3.1 Public Finances

What would we like to know about public finances? We would like to know how they are managed. What are the sources of such finances and how and on what are they spent? Does the Government restrict its expenditure within its means or does it spend beyond the resources available to it? Does it, in the process, borrow heavily to finance its expenditure? **The Budget documents** of the Central and State Governments, the pre-Budget **Economic Survey** of the ministry of finance and the Reserve Bank of India (**RBI Handbook of Statistics on the Indian Economy 2005** and the **Monthly Bulletin of the RBI** provide a variety of data on public finances. The National Accounts Statistics of the CSO, MoSPI also provides the output, GVA, gross savings, etc. of the financial sector and its various sub-sectors. **EPWRF website** will also help to access data in a time series format on public finances. The Economic Survey, for instance, gives an overall summary of the budgetary transactions of the Central and State governments and Union Territory Administrators. This includes the internal and extra-budgetary resources of the public sector undertakings for their plans. It indicates the total outlay, the current revenues, the gap between the two, the manner in which the gap is financed by net internal and external capital receipts and finally, the overall budgetary deficit. It gives the break-up of the outlay into developmental and non-developmental outlays and the components of the latter, the components of current revenues- tax revenue and non-tax revenue – and sub-components of these and the components of internal and external capital receipts. The **RBI Handbook 2013-14** presents the following time series data in respect of public finances.

a) Central Government Finances

- i) Key deficit indicators¹³ of the Central Government – gross fiscal deficit, gross primary deficit, net primary deficit, revenue deficit, primary revenue deficit, drawdown of cash balances, net RBI credit from 1975-76 onwards;
- ii) Major components of Central Govt. Receipts – tax revenue (direct and indirect taxes and their components) non-tax revenue (one of its important components is interest receipts) and capital receipts;

¹² Discussed in Unit 20 in the discussion on National Accounts Statistics.

¹³ **GFD** = total expenditure including loans (net of recovery) – revenue receipts (including external grants and non-debt capital receipts); **NFD** = GFD – net lending of the Central Govt; **GPD** = GFD – interest payment; **NPD** = net interest payments; **RD** = revenue receipts – revenue expenditure; **PRD** = RD – interest payment; **BD (Conventional Deficit)** = all expenditure (revenue and capital) – all receipts (revenue and capital); with the discontinuation of *ad hoc* treasury bills and 91-day treasury bills, the concept of conventional budget deficit has lost its relevance since 1/4/97. The figures shown against BD from 1997-98, therefore, represent draw down of cash balances from RBI; **Net RBI Credit to Govt.** = the sum of variations in the RBI's holdings of (i) Central Govt. dated securities, (ii) treasury bills, (iii) Rupee coins, and (iv) loans and advances from RBI to the Central Govt. since 1/4/97 adjusted for changes in the Central Govt.'s cash balances with the RBI in the case of the Centre.

- iii) Major¹⁴ heads of capital receipts of the Central Government – market borrowings, small savings, provident funds¹⁵, special deposits, recoveries of loans, disinvestments receipts¹⁶, external loans (net);
 - iv) Major heads of Central Govt. expenditure – revenue expenditure and its important components (defence, interest payments and subsidies), capital expenditure including loans and advances and defence expenditure; also the breakup of expenditure into developmental and non-developmental heads and the shares of economic services and social services in developmental expenditure;
 - v) Centre's gross fiscal deficit and its financing – GFD receipts, GFD expenditure, Gross Fiscal Deficit, financing of GFD through external financing and internal financing (market borrowings, other borrowings, draw down of cash balances);
 - vi) Gross capital formation from budgetary resources of the Central Government – fixed assets, work stores, increase in stocks of foodgrains & fertilisers, gross financial assistance for capital formation to State Governments, Non-Departmental Commercial Undertakings (NDCUs)¹⁷ and others;
 - vii) Public sector Plan outlay, its sectoral profile and the manner in which it is financed – from sources like own resources, domestic market borrowings and net capital inflow from abroad;
 - viii) Financing of Public Sector Plan – balance from current revenue, contribution of public enterprises, borrowings (including long and medium term borrowings), small savings, deficit financing, net capital inflow from abroad, central assistance and others.
- b) **Finances of the State Governments**
- i) Key deficit indicators of the State Governments – fiscal deficit, gross primary deficit, revenue deficit, primary revenue deficit, overall deficit, net RBI credit to States (annual variation) from 1975-76 onwards;
 - ii) Pattern of receipts of the State Government – total Revenue receipts: tax receipts (like sales tax and State excise duties), the share of Central taxes like income tax and union excise duties; and non-tax receipts like interest receipts, grants from the Centre, total capital receipts;
 - iii) Pattern of major capital receipts of the State Government – loans from centre, recovery of loans and advances, market loans, State provident fund (net), special securities issued to NSSF;
 - iv) Expenditure pattern – revenue and capital expenditure; capital outlay, loans and advances by State Government, developmental expenditure and the shares of economic services and social services in it and non-developmental expenditure and the shares of interest payments, administrative services and pension and miscellaneous general services;

¹⁴ Adjusted for changes in classification effected in 1974-75 and 1987-88.

¹⁵ Only Govt. provident funds, as the Public Provident Fund (PPF) is part of small savings since 1998-99.

¹⁶ These are not to be treated as budgetary receipts as these are to be credited to a separate fund.

¹⁷ NDCU means the Central and State Public Sector Units

- v) States' Gross Fiscal Deficit and its financing – loans from Central Government, market borrowings, special securities issued to NSSF and others,
 - vi) Outstanding liabilities of the State Governments.
- c) **Combined Finances of Central and State Governments**
- i) Combined deficit;
 - ii) Receipts and Disbursements;
 - iii) Direct and Indirect tax revenues;
 - iv) Developmental and non-developmental expenditure;
 - v) Market borrowings;
 - vi) Interest rates on dated securities (Range and weighted averages) of Central and State Government;
 - vii) Outstanding liabilities;
 - viii) Ownership of Central and State Govt Securities – 11 categories like RBI, scheduled commercial banks, cooperative banks, primary dealers, insurance companies, financial institutions, mutual funds, provident funds, corporates, foreign institutional investors and others;

d) **Transactions with the Rest of the World**

We have enumerated the kind of data available on Central and State Government finances. But these relate mainly to domestic finances and transactions. What about our transactions with the rest of the world? We have looked at one of these, namely, trade in merchandise and services in the section on trade. There are a number of other areas in which India interacts with the rest of the world. Foreign exchange flows into the country as a result of exports from India, external assistance/aid/loans/borrowings, returns from Indian investments abroad, remittance and deposits from Non-Resident Indians (NRI) and foreign investment (foreign direct investment – FDI – and portfolio investment) in India. Foreign exchange reserves are used up for purposes like financing imports, retiring foreign debts and investment abroad. What is the net result of these transactions on the foreign exchange reserves? What are the trends in these flows and their components? What is the size of the current account imbalance relative to GDP and its composition? If it is a deficit is it investment-driven? What is the size of foreign exchange reserves relative to macro-aggregates like GDP, the size of imports and the size of the short-term external debt¹⁸?

¹⁸ One can measure the size of the forex reserves as equivalent to so many weeks or months of imports. Alternatively, one can relate it to financial stability. The Guidotti-Greenspan Rule sets a standard for this. According to this rule, reserves should equal one year's short-term debt. Yet another way of examining the size of the reserves is to look at it in terms of its opportunity cost. The reserves earn a zero real return measured in domestic terms. If on the other hand, these are invested either domestically in infrastructure or in a fully diversified long-term way in global markets, substantial incremental benefits would accrue to the domestic economy. [see the *Hindu*, April 3, 2006, page 17 "Intriguing Pattern of Global Capital Flows" excerpts from the L.K. Jha Memorial Lecture delivered recently (March 24, 2006) in Mumbai by Prof. Lawrence Summers. President of Harvard University and former Secretary of the Treasury in the Clinton Administration, at the invitation of the RBI.] The full text of the lecture may also be published in the *RBI Monthly Bulletin*. The lecture discusses the implications of the rising forex reserves of the developing countries and the opportunities and challenges that these present.

The RBI Handbook 2013-14 gives time series data (which are often in US\$ as well as in Indian Rupees) on a number of these parameters:

- i) India's overall BoP showing current account and capital account and key components of these like trade balance, invisible¹⁹, types of foreign investment, net external assistance, net commercial borrowing, rupee debt service and net NRI deposits. It also shows monetary movements in terms of increase/decrease in forex/reserves, IMF and SDR allocation,
- ii) Exchange rate of Indian Rupee vis-à-vis US \$, UK £, DM/€ and Japanese ¥ from 1975 onwards (calendar year – annual average, financial year – annual average and end year rates),
- iii) Real Effective Exchange Rate (REER) and Nominal Effective Exchange Rate (NEER) of Indian Rupee based on 36 country bilateral weights with base 2004-05 from calendar year 2005 onwards,
- iv) Indices of REER and NEER,
- v) External assistance in the form of loans and grants from 1985-86 onwards (in US \$ and Indian Rupees), authorization, utilization and debt service payments,
- vi) NRI deposits outstanding (in US \$ and Indian Rupees) from 1996 onwards in different types of accounts like NR (E)RA, FCNR(A), FCNR(B), NR(NR)RD, NRO, FC (B&O)D, FC(O)N and total. It has increased from US \$17.446 billion in 1996 to US \$103.844 in 2014,
- vii) Foreign investment inflows (in US \$ and Indian Rupees) namely, gross investments, repatriation/ disinvestment, FDI by India, net foreign direct investment, net portfolio investment from 2000-01 onwards,
- viii) Foreign exchange reserves (in US \$ and Indian Rupees) from 1956-57 onwards,
- ix) India's external debt (in US \$ and Indian Rupees) from 1996 onwards²⁰, which, inter alia, provides concessional debt as percentage of total debt, short term debt as % to total debt, debt stock-GDP ratio (%) and debt service ratio (%).

FDI has assumed importance in the context of the country's efforts to meet the increasing need for investment capital for its expanding economy. Data on FDI are important. These are available from August, 1991 onwards. FDI data collected by **RBI** and the **Department of Industrial Policy & Promotion (DIPP)** in the Ministry of Commerce & Industry before 2000 related only to equity capital. The coverage of the data has since then has been expanded so that these are in accordance with the best international practices. FDI data collected by RBI now cover (a) equity capital, (b) reinvested earnings (retained earnings of FDI companies); and (c) other capital (inter-corporate debt transaction between related entities). FDI data from 2000-01 onwards are, therefore, not comparable with data of earlier years. The Department of

¹⁹ The component transactions that make up 'invisible' have been enumerated in the section on Trade – Services.

²⁰ The debts are classified into I. Multilateral, II. Bilateral, III. International Monetary Fund, IV. Trade credit, V. Commercial borrowing, VI. NRI & FC (B&O) deposits, VII. Rupee debt, VIII. Total long-term debt, IX. Short-term debt and X. Gross total debt. Most of the groups have sub-groups A. Government borrowing, and B. Non-Government borrowing, further disaggregated into concessional and non-concessional borrowing.

Industrial Policy and Promotion of the Ministry of Commerce and Industries publishes monthly data on FDI inflow in India²¹. It presents time series data on the break-up of FDI flows by

- 1) Cumulative FDI inflows (equity inflows + reinvested earnings + other capital) from 2000 – 2014,
- 2) Cumulative amount of FDI equity inflows (excluding amount remitted through RBI's + NRI schemes),
- 3) FDI inflows during the financial year till that month,
- 4) FDI equity inflows (month-wise) during that financial year and that calendar year,
- 5) Share of top investing countries FDI equity inflows,
- 6) Sectors attracting highest FDI equity inflows, showing 10 different areas, like service sector, construction development, telecommunication, computer software and hardware, drugs and pharmaceuticals, automobile industry, chemicals (other than fertilisers), power, metallurgical industries, hotel and tourism,
- 7) Statement of RBI's regional offices (with State covered) received FDI equity inflows,
- 8) Country-wise FDI equity inflows from April 2000 onwards (from 140 countries, FIIs, NRI),
- 9) Sector-wise FDI equity inflows from April 2000 onwards (showing 63 industrial sectors).

The RBI handbook 2013-14 and the SEBI Handbook of Statistics of Indian Securities Market²² present time series on FII. The SEBI handbook, gives

- i) Foreign Investment Inflows,
- ii) Trends in FII to portfolio investment,
- iii) Trends in resource mobilization by mutual funds,
- iv) International Securities Market (market capitalization, no. of listed companies, value of shares traded, no. of trading days,
- v) International Fixed Income Market (no. of bonds listed, value. of bonds listed, value of bonds traded),
- vi) International Derivatives market (stock options, stock futures, stock index options, stock index futures).

FDI data can also be accessed in the **RBI website www.rbi.org.in**.

²¹ You can visit the site http://dipp.gov.in/English/Publications/FDI_Statistics/FDI_Statistics.aspx#MainContent to get the monthly FDI inflow.

²² <http://www.sebi.gov.in/sebiweb/home/list/4/32/0/0/Handbook%20of%20Statistics>

Check Your Progress 2

- 1) Name the documents that provide different kinds of data on public finances.
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- 2) What is the difference between Gross Fiscal Deficit (GFD) and Net Fiscal Deficit (NFD)?
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- 3) Identify the transactions other than trade in merchandise that India has with the rest of world.
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23.3.2 Currency, Coinage, Money and Banking

Economic transactions need a medium of exchange. We have come a long way from the days of barter and come to the use of money and equivalent financial instruments as the medium of exchange. Banks function as important financial intermediaries not only in this process but also in matters of resource mobilization and the deployment of such resources. The central bank of the country (the RBI in India) regulates the functioning of banking system. In addition, it issues currency notes and takes steps to regulate the money supply in the economy in order to achieve the objectives of ensuring adequate credit to development activities and at the same time to maintain stability in prices. We should, therefore, be interested in data on money supply or the stock of money and its structure and the factors that bring about changes in these, the kind of aggregate that need monitoring, the transactions in the banking system in pursuance of the nation's development objectives, the flow of credit to different activities, indicators of the health and efficiency of banks which are the custodians of the savings of the public. We should also be interested in data on prices as price level affects the purchasing power of money and indices of

prices appropriate for the purpose/group in question – consumer prices for producers and different groups of consumers.

Most of these of data are compiled by the RBI on the basis of its records and those of NABARD and returns that it receives from banks and can be found in **RBI Bulletins and RBI handbook**. The wholesale Price Index (WPI) is compiled by the Economic Advisor's Officer in the Ministry of Industry, the Consumer Price Index for Industrial Workers (CPI – IW) and CPI for Agricultural Labour (CPI - AL) by the Labour Bureau, Shimla, Ministry of Labour and CPI for rural and urban (CPI – Rural, CPI-Urban and CPI Rural+Urban) by the CSO. All these are published by the agencies concerned and also presented in the RBI and CSO publications mentioned above. The **Consumer Price Index released on 12th of each month by the CSO** also provides retail prices of selected commodities/services, separately for the rural and urban areas in India. Two other reports of the Reserve Bank of India published every year – the **Report on Currency and Finance** and the **Report on Trends in Banking** provide a wealth of information of use to analyse. The RBI also maintains an online database in searchable format, where one can select the parameters for which one need to use the data. You can also right click on the selected page, copy the data necessary for your analysis and paste it on a blank excel workbook to carry out your own analysis²³. The **EPWRF website** also provides data on Banking, Money and Finance.

The **RBI Handbook 2013-14** presents time series data on

- i) Liabilities and assets of the RBI, 1980 onwards. The liabilities are deposits from Central Government, State Governments, Scheduled Commercial Banks, Scheduled State Co-operative Banks, Non-Scheduled Co-operative Banks, other Banks and others. The assets are notes and coins, balances held abroad, loans and advances to Central and State Govts. banks and other agencies, bills purchased and discounted, investments and other assets;
- ii) Components of money stock, namely, Reserve Money (M_0) made up of currency in circulation, other deposits with RBI and bankers' deposits with RBI, currency with the public (= currency in circulation – cash with bank), Narrow Money (M_1) consisting of currency with the public, other deposits with RBI and demand deposits and Broad Money (M_3) comprising Narrow Money and time deposits;
- iii) Sources of money stock consisting of net RBI credit to Central Government, net RBI credit to State Government, other banks' investments in Government securities, RBI credit to commercial sector, Other banks' credit to commercial sector, net foreign exchange assets of the RBI, net foreign exchange assets of other banks, Government's currency liabilities to public, net non-monetary liabilities of RBI, net non-monetary liabilities of other banks, RBI's gross claims on banks;
- iv) Average monetary aggregates, like currency with the public, demand deposits, time deposits, other deposits with the RBI, reserve money, narrow money, broad money, net bank credit to Government, bank credit to governmental sector, net foreign exchange assets of the banking sector,

²³ See the link <http://dbie.rbi.org.in/DBIE/dbie.rbi?site=home>

Government's currency liabilities to the public, banking sector's net non-monetary liabilities;

- v) Major monetary policy rates and reserve requirements: bank rate, LAF (REPO, reverse REPO, and MSF) rates, CRR and SLR;
- vi) Monthly data series on the detailed composition of each of the components of the money stock (the "C" components) and the composition of individual sources of change in the money stock; also defining new monetary aggregates²⁴ NM_2 and NM_3 , these being respectively equal to " M_1 + short-term time deposits" and " $[NM_2 + \text{long-term deposits} + \text{call/term funding from Financial Institutions (FIs)}] = [\text{domestic credit} + \text{Government's currency liability to the public} + \text{net forex assets of the banking sector} - \text{capital account} - \text{other items (net)}]$];
- vii) Monthly data series on Liquidity Aggregates²⁵, namely, $L_1 = NM_3 + \text{Postal deposits}$ ²⁶; $L_2 = L_1 + \text{liabilities}$ ²⁷ of FIs; $L_3 = L_2 + \text{public deposits with NBFCs}$ ²⁸ (L_3 is compiled on a quarterly basis);
- viii) Monthly average price of gold and silver in domestic (Mumbai) and foreign markets;
- ix) Selected Aggregates of Scheduled Commercial Banks (SCBs) like outstanding demand and time deposits, investment in Govt. and other securities, bank credit (food and non-food), cash in hand and balance with the RBI.
- x) Deployment of non-food credit to priority sector and its sub-sectors (like agriculture, small scale industries), industry and its groups, whole sale trade and export credit; and short and long term direct and indirect institutional credit to agriculture and allied activities and to farmers by size of holdings;
- xi) Consolidated balance sheets of SCBs; Gross and net Non-Performing Assets (NPAs) of SCBs by bank groups²⁹; Distribution of SCBs and different sub-group of SCBs by Capital to Risk-weighted Assets Ratio (CRAR);³⁰ and
- xii) Important banking indicators of Regional Rural Banks (RRBs), State Cooperative Banks, Primary Agricultural Coop. Societies (PACS), State Coop. Agricultural and Rural Development Banks and Primary Coop. (A&RD) Banks;

²⁴ See footnote 19.

²⁵ The methodology for compiling liquidity aggregates is available in the "New Monetary and Liquidity Aggregates" in the RBI Bulletin of November, 2000. The acronyms NM_2 and NM_3 are used to distinguish the new monetary aggregates from the existing monetary aggregates.

²⁶ Post office SB deposits + PO time deposits + PO recurring deposits + other deposits + PO Cumulative Time Deposits.

²⁷ Term money borrowings + CDs + term deposits.

²⁸ Non-Banking Financial Companies. Estimates of public deposits are generated on the basis of a sample study of more than 1000 NBFCs with public deposits of Rs. 20 crores or more.

²⁹ 1) public sector banks, 2) old private sector banks, 3) new private sector banks, and 4) foreign banks in India.

³⁰ The detailed instructions issued by the RBI on CAR (Capital Adequacy Ratio) or CRAR can be seen at http://rbi.org.in/scripts/BS_ViewMasCirculardetails.aspx?Id=8133&Mode=0. SCBs had to comply with a minimum CRAR of 8 per cent up to the end of March, 1999 and 9 per cent from the end of March, 2000. The sub-group 1 in the footnote 25 is split into two sub-groups – SBI group and nationalized banks.

23.3.2 Financial Markets

What would we like to know about the financial market and its functioning? We should like to know about the ways in which financial resources can be accessed and at what cost. What are the prevailing interest rates payable for funds to meet short-term or long-term requirements? How do new ventures access the large amount of resources that are need for the new ventures? How do term lending institutions access funds required for their operations? What are the sources of funds?

The RBI, which regulates banking operations and the operations of the NBFCs and FIs and the Securities Exchange Board of India (SEBI), which regulates the capital market, and the Department of Company Affairs that administers the Companies Act, are the major sources of data on financial markets. The **RBI Handbook of Statistics of the India Economy – 2013-14**³¹ and the **Handbook of statistics on the Indian Securities Market - 2014**³² published by **SEBI** contain comprehensive data on the financial market. The two together provide annual time series data on several aspects of the financial market:

- i) The structure of interest rates – call/notice money rates, commercial bank rate, lending rates of banks, prime lending rates (PLR) of term lending institutions like IDBI, dividend and yields of the units of UTI, annual gross redemption yields of Govt. Securities and average annual price and yield rate of Central Govt. securities (SGL transactions);
- ii) Financial assistance sanctioned and disbursed and financing of project cost of companies by FIs, loans sanctioned by HDFC and NABARD, and refinancing operations of National Housing Bank (NHB);
- iii) Aggregate deposits of NBFCs and Non-Banking Non-Financial Companies (NBNFCs)³³ ;
- iv) Taxable and tax-free bonds issued by public sector undertakings – both public issue of bonds and privately placed bonds;
- v) Resource mobilization in the Private Placement Market – financial and non-financial institutions in the public and private sector;
- vi) Net resources mobilized by mutual funds (MFs) – MFs sponsored by banks, financial institutions (FIs), UTI and the private sector;
- vii) New capital issues (number and amount mobilized) by non-govt. public Ltd. Companies;

³¹ Also available on the RBI website <http://www.rbi.org.in> . In fact, the entire Handbook is available on the website. The web version can be downloaded from the website. For some of the financial market data longer time series are provided in the CD ROM and web versions. The CD ROM now incorporates intelligent search features that allows for searches across tables, enabling users to select one or more of any data series for any selected time period from any table in the handbook in a user-friendly manner. The data can be downloaded in the form of a user-defined spreadsheet table that can be read by most standard econometric software.

³² Copies can be had from Research Deptt., SEBI, World Trade Centre I, 29th floor, Cuffe Parade, Mumbai-400 005. This is also available on the website of **SEBI** – www.sebi.gov.in and can be downloaded from the website.

³³ After the new regulatory framework for NBFCs came into force in 1998, the NBFCs and Residuary NBCs.

- viii) Absorption of private capital issues – the no. of issuing companies, the number of shares and amount subscribed by promoters etc., and Govt., FLs etc., and the number of shares and amount subscribed by public, other than underwriters and other groups;
- ix) Investments of LIC by sector and instrument and of UTI by instrument;
- x) Assets and liabilities of institutions like IDBI, NABARD, EXIM Bank, NHB and SIDBI;
- xi) Annual averages share price indices – BSE SENSEX (base 1978-79 =100), BSE National (base 1983-84 = 100) and RBI Index (base 1980-81 = 100) and Market Capitalisation³⁴;
- xii) Market intermediaries like stock exchanges (cash and derivatives market), brokers, corporate brokers, sub-brokers, custodians, FIIs, depositories, merchant bankers, bankers to issues and underwriters registered with SEBI; and registered brokers by stock exchanges and by ownership categories – proprietary, partnership and corporate; (SEBI);
- xiii) Long-term capital raised during 1957-90 (pre-reform period) through shares, debt and loans; (SEBI);
- xiv) Annual and monthly data series on resources raised by the corporate sector through (i) equity issues and (ii) debt issues (public issues and private placement) and the share of private placement in total debt and total resource mobilization and the share of debt in total resource mobilization; (SEBI);
- xv) Pattern of funding for non-govt, non-financial public limited companies – I. Internal sources [(i) reserves and surplus, and (ii) depreciation], and II. External sources [(paid up capital through new issues and premium), borrowings (debentures, from loans and from FIs) and trade dues and other current liabilities]; (SEBI);
- xvi) Annual and monthly series on resources mobilized, instrument wise, from the primary market – number and amount mobilized by category of issue (public issue and rights issue); by type of issues [by listed companies and initial Public Offerings (IPO)]; by equities at par and equities at a premium; cumulative convertible preference shares (CCPS); bonds; and others; (SEBI);
- xvii) Annual and monthly series of data on capital raised by (i) industrial (economic activity) classification (banks/FIs), industries like electronics, and engineering, entertainment, finance etc.; (ii) size of capital raised; (iii) sector (public and private); and (iv) region (north, east, south and west); (SEBI);
- xviii) Annual and monthly data series on the number and quantum of Euro Issues; (SEBI);

³⁴ The compilation of the RBI Index was discontinued from 1999-00. The compilation of market capitalization – all India was discontinued by BSE since 1999-00. The SEBI Handbook provides data on market capitalization – all India from 1999-00 as given in the publication of the National Stock Exchange (NSE).

- xix) Annual and monthly data series on transactions of MFs on the Stock Exchanges – gross purchases and sales and net purchase/sales in (a) equity, and (b) debt; (SEBI);
- xx) Trends on trading on stock exchanges – the number of shares traded and the number and value of shares delivered; (SEBI);
- xxi) Indicators of liquidity – Market capitalization – GDP ratio (BSE), market capitalization – GDP ratio (NSE), turnover ratio – BSE, traded value ratio – BSE, traded value ratio – NSE; (SEBI);
- xxii) Trends in foreign investment flows – direct and portfolio investment;³⁵ (SEBI);
- xxiii) Annual and monthly series on trends in FII investment – gross purchases and sales and net investment; (SEBI);
- xxiv) Comparative evaluation of Indices through Price to Earnings Ratio and Price to Book Ratio (these are monthly averages of closing values) for BSE SENSEX, BSE 100 Index, S&P CNX NIFTY, CNK NIFTY Junior; (SEBI); and
- xxv) Survey of investor households – a joint effort of SEBI and the National Council of Applied Economic Research – result giving an estimate of investor and non-investor households by type of investment, household by type of instruments invested in and so on.

Check Your Progress 3

- 1) Which document does contain the methodology for compiling liquidity aggregates?

- 2) List the kind of time series data available in RBI Handbook 2013-14.

³⁵ Figures from 1995-96 include acquisition of shares of Indian companies by non-residents under S/6 of FEMA, 1999. Those from 2000-01 have been revised with expanded coverage to approach international best practices and are, therefore, not comparable with earlier data.

- 3) Identify 3 different sub-sectors of financial market and name a few major sources of data for each of these sub-sectors of financial markets.

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23.4 LET US SUM UP

We have, in this Unit, surveyed the data available in the area of trade and finance. We noted that data on the volume of merchandise trade by commodities and countries, direction of trade, trade balance, quantity and unit value index numbers of imports and exports and indices depicting different measures of the terms of trade are available from the DGCI&S and are also presented as a time series in the **RBI Handbook 2013-14**, besides the **Handbook of Statistics of the SEBI**. Data on trade in services and on merchandise are available as part of BoP data of the RBI. There is a divergence between merchandise trade deficit/surplus data provided by DGCI&S and that shown by BoP data of RBI and the reasons for such a discrepancy are related to the manner in which the two sources collect the basic data.

Data are available in the RBI Handbook (long time series) on public finances such as receipts and expenditure of the Central and the State Governments, the manner in which these Governments mobilize resources through taxes and non-tax revenue borrowings, the patterns of their expenditure – developmental outlays, debt servicing, economic and social services and so on – and the various types of (fiscal) deficits that they run and the manner in which these are financed. Data on balance of payments, inflow of foreign investment, foreign aid/borrowings, assistance and the size of foreign debt are also available in the RBI Handbook. So are the data on the money stock, the different monetary aggregates like M_0 , M_1 and M_3 , and the new monetary aggregates NM_2 and NM_3 and “C” components of the money stock, the sources of change in the money stock and their “S” components and liquidity aggregates L_1 , L_2 and L_3 . The role of the banks and financial institutions in the mobilization of savings and the deployment of credit to different economic activities, their functional and operational efficiency in terms of indicators like NPA and CRAR can be examined well with the time series data available in the RBI Handbook and such an effort can be supplemented with information on profitability provided by the RBI’s Report on Trends in Banking. Similarly, the functioning of the financial market in terms of the structure of interest rates in different markets, resources mobilized through different modes like capital issues, private placement, equities with and without premium, preference shares and **CCPS**, total resources raised from the primary market, trends in trading in stock exchanges, share price indices and market capitalization, indicators of liquidity like traded value ratio and market capitalization to GDP ratio and measures of comparative evaluation of indices (BSE SENSEX, BSE 100 Index, etc.) like Price to Earnings Ratio and Price to Book Ratio, can be analysed adequately

with the data available on these aspects in the RBI **Handbook and the Handbook of Statistics**, published by SEBI. The RBI Handbook, especially with the special features incorporated in its website version, stand out as an invaluable source of data on finance and also trade.

23.5 EXERCISES

- 1) How can you analyse trend in foreign trade? Discuss the role of unit value index and quantum index in this regard.
- 2) Discuss the kind of time series data on money and banking compiled by RBI. How this data can be useful for research?
- 3) List the types of data on financial market compiled by SEBI. To what extent is it adequate to analyse the financial markets?

23.6 SOME USEFUL BOOKS

Ministry of Finance, Govt. of India : Economic Survey – 2005-06 and earlier years, Ministry of Finance, Govt. of India, New Delhi.

Budget Documents, Ministry of Finance, Govt. of India, New Delhi.

Reserve Bank of India : Report on Currency and Finance – 2005, RBI, Mumbai.

Report on Trends in Banking – 2005, RBI, Mumbai.

World Trade Organization : International Trade Statistics – 2005, WTO, Geneva.

Also accessible at http://www.wto.org/english/res_e/statis_e.htm

23.7 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

- 1) See Sub-section 23.2.1
- 2) 1998-99.
- 3) See Sub-section 23.2.1
- 4) See Sub-section 23.2.2

Check Your Progress 2

- 1) The budget documents of the central and the state governments, the pre-budget economic survey, RBI Indian Economy 2005, Monthly Bulletin of the RBI.
- 2) The excess of total expenditure including loans over revenue receipts – net lending of the central government.
- 3) See Sub-section 23.3.1 (sub head and ‘d’)

Check Your Progress 3

- 1) RBI Bulletin, Nov. 2000 under the title ‘New Monetary and Liquidity aggregates’.
- 2) See Sub-section 23.3.2
- 3) The RBI Handbook of Statistics of Indian Economy 2005 and the Handbook of Statistics on Indian Securities Market 2005 provide comprehensive data on the financial market.



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UNIT 24 SOCIAL SECTOR

Structure

24.0 Objectives

24.1 Introduction

24.2 Employment, Unemployment and Labour Force

24.2.1 Magnitude of Employment and Unemployment

24.2.2 Quality/Adequacy of Employment

24.2.3 Labour Welfare

24.3 Education

24.3.1 Educational Infrastructure

24.3.2 Infrastructure Utilization and Access to Educational Opportunities

24.4 Health

24.4.1 Health Infrastructure

24.4.2 Public Health, Morbidity and Mortality Indicators

24.4.3 National Family Health Survey (NFHS)

24.5 Shelter and Amenities

24.6 Social Consequences of Development

24.7 Environment

24.8 Quality of Life

24.9 Let Us Sum Up

24.10 Some Useful Books

24.11 Answers or Hints to Check Your Progress Exercises

24.0 OBJECTIVES

After going through this Unit, you will be able to:

- know the sources of data on various aspects of employment and unemployment, labour welfare, education, health, shelter, safe drinking water, etc., which determine the quality of life of the people;
- Identify the various organization/agencies involved in the compilation of data on different aspects of social sector;
- describe the different concepts used in collection of data on social sector; and
- explain the kind of data/information available in the various publications containing data on social sector.

24.1 INTRODUCTION

Social Sector consists of education, health, employment, shelter, sanitation, other housing amenities, environment, and adverse consequences of development and levels of living or quality of life in general. Investments in

this sector pay rich dividends in terms of rising productivity, distributed growth, reduction in social and economic inequalities and levels of poverty although after a relatively longer time span than in the case of investment in physical sectors. Let us look at the kind of data available in this sector.

24.2 EMPLOYMENT, UNEMPLOYMENT AND LABOUR FORCE

Employment is the means to participate in the development process. Creation of employment opportunities is an important instrument for tackling poverty and to empower people, especially women. Regarding data on employment, firstly, we should know how many are employed and how many are ready to work but are unable to gain access to employment opportunities. How do women fare in these matters? Or, for that matter, what is the experience of men and women belonging to different social/religious/disadvantaged groups? Are children employed in any economic activity that is not only hazardous to their health but which also adversely impacts on our dream of a golden future for them through efforts to ensure their mental and physical well-being? What is the quality of employment opportunities available to the work force? What are the conditions in which people work? Let us first look at data on the magnitude of employment and unemployment.

24.2.1 Magnitude of Employment and Unemployment

Data on employment in selected sectors are available from several sources. Data on Employment in the organized sector of the economy is available from the **Employment Market Information (EMI) programme of the Directorate General of Employment & Training (DGE&T), in the Ministry of Labour.** This is based on statutory returns submitted¹ to the employment exchange of the area every quarter by non-agricultural establishments in the private sector employing at least 25 persons and all public sector establishments (excluding defense forces and Indian missions posted abroad) irrespective of their size. Smaller establishments, that is, those employing 10 to 24 persons submit such returns on a voluntary basis. Data on employment levels in the organized sector of the economy (as defined above) is thus available every quarter at district levels through **Quarterly Employment Reviews** released by the DGE&T and the Directorates of Employment (DEs) in the State Governments and Union Territory Administrations. The **Annual Employment Reviews** released by the DGE&T and the DEs provide more detailed data on employment at the three levels of NIC code. The returns also provide data on the number of vacancies occurring in the establishment during the quarter and the number filled. This is the only source of employment data on the organized sector of the economy that is available at quarterly intervals. This is, however, subject to several limitations. First of all, it excludes the entire agricultural sector, self employed persons and part-time workers. In addition, adjustments are to be made to take care of non-response in the submission of the returns. Incompleteness of the employers' register is also an impediment. Establishments in the organized sector of the economy also submit statutory biennial returns providing the occupational distribution of their employees and the educational profile of those employed in selected occupations. These returns provide the basis for the preparation of biennial reports on the occupational pattern of employment and

¹ These statutory returns are submitted under the Employment Exchanges (Compulsory Notification of Vacancies) Act, 1959 and the Rules of 1960 made there under.

the educational profile of selected occupations in the public and private sectors. However, non-response in the submission of these returns has over the years deteriorated so much that the data on the occupational/education pattern has now lost its utility.

The **DGE&T and the DEs** in the State Governments and Union Territory administrations also provide data on the number of job seekers by age, sex and education qualifications, and the socially and physically challenged and their distribution by sex and education on the live register of employment exchanges, the number of vacancies notified to the employment exchanges under the Act referred to in the preceding paragraph and the number of job seekers placed in jobs by the employment exchange. It would not at all be fair to measure the efficiency of the employment exchanges by comparing the number of placements with the number of vacancies notified to the exchanges or with the number on the live register for several reasons. First, vacancies being filled through public service commissions, other commissions, recruitment boards and the like and those filled through competitive examinations need not be notified to employment exchanges. Second, public sector undertakings need to fill from the Employment Exchanges only vacancies carrying salaries below a certain level specified by Government. Finally, establishments in the private sector need to only notify their vacancies to the employment exchanges. They are not obliged to confine their choice of candidates for recruitment to the nominees of the exchanges and are free to fill their vacancies through the open market. Sample surveys of those on the live register at any point of time have shown that a sizeable proportion of the job seekers are already employed, some are unemployed and some have registered at more than one exchange. At the same time, surveys of employment and unemployment like the NSSO quinquennial surveys (see below) have shown that not all the unemployed are registered in the employment exchanges. Thus, the size of the live register can overestimate unemployment and, from another angle, can also underestimate unemployment. These factors may not also cancel each other and it is, therefore, difficult to consider the size of the live register as a reasonably accurate estimate of the level of unemployment. Nevertheless, it does represent the extent of pressure in the job market, especially for government and public sector jobs.

The second source is the **Economic Census**. This has been conducted in 1977, 1980, 1990, 1998, 2003 and 2013 covering all economic enterprises in the country except those engaged in crop production and plantation and provides data on employment in these enterprises². These thus include also the unorganized sector outside crop production, animal husbandry and plantations. The third source is the **Annual Survey of Industries (ASI)**, which gives us estimates of factory sector employment, i.e., all factories registered under the Factories Act, 1948 and the Bidi and Cigar Workers Condition of Employment Act, 1966³. The ASI presents estimates of levels of employment by industries at the three-digit level of NIC 2008 codes along with industry level aggregates like investment, output, inputs, value added and so on⁴ so that one can derive useful technical ratios to facilitate analysis of the role of the factors of production in

² **The first report on the Economic Census 2013** is available on the website of the Ministry of Statistics and Programme Implementation (MoSPI) www.mospi.gov.in .

³ See the Sub-section 21.3.3 titled “Factory Sector – Annual Survey of Industries” in Unit 21 on Agricultural and Industrial Data.

⁴ See the list of principal characteristics given in footnote 22 in the section referred to in the preceding footnote. Sub-section 21.3.3 referred to therein also gives an idea of the kind of data on employment available from **ASI**.

industry. The quality of ASI data is thus tied to the completeness of the frame of factories, which, in turn depends on the quality of the enforcement of the Factories Act, 1948 and the *Bidi* and Cigar Workers (Conditions of Employment) Act, 1966. Data on employment in Railways is available from the **Railway Board, Ministry of Railways**, those on employment in the Banking Sector from the **Reserve Bank of India (RBI)**, those on employment in posts and telecommunications respectively by the **Department of Posts** and the **Ministry of Telecommunications** and those on employment in insurance by the **Ministry of Finance**. The reports on the **Census of Central Government Employees** conducted by the DGE&T every year and the **Census of Central Government Employees** conducted by the respective State Governments provide a time series data of employment in Government sector.

The publications⁵ of the Labour Bureau (Ministry of Labour), Shimla present estimates of average daily number of workers in Government and local fund factories and other factories – male and female adults (those who have completed 18 years of age), male and female adolescents (those who are aged between 15 to 18) and boys and girls (those who are not yet 15 but not below 14) – and employment in factories by industry groups. These also provide estimates of average daily employment in mines and quarries for different minerals. The first is based on the statutory returns received from factories through the State Governments under the Factories Act, 1948 and the second on similar returns received by the Director General of Mines Safety (DGMS) under the Mines Act, 1952 as amended in 1983. The third set of data that they provide is employment in shops, commercial establishments and restaurants, theatres, etc., based on the returns submitted to the State Governments under the Shops & Establishments Act and Weekly Holidays Act, 1942. All suffer from inadequacy of response in the matter of submitting statutory returns. Further, the last one suffers from an added limitation arising from the fact that these Acts are in force only in certain urban areas, towns and cantonments. Of late, similar returns are being collected by some of the Gram Panchayats, who work under the Department of Rural Development of the respective State Governments. Lastly, the publications give data on employment in tea, coffee and rubber plantations on the basis of data received from the Tea, Coffee and Rubber Boards and the Ministry of Agriculture. It must be mentioned here that employment in these specific sectors will also be covered by the **EMI programme** to the extent establishments in these sectors are covered by the Act governing the EMI programme and the extent to which these establishments submit the relevant statutory returns.

Comprehensive data on employment and unemployment covering the entire country at regular intervals are available from two sources, namely, the **Population Census** conducted by the **Office of the Registrar General and Census Commissioner, India** every ten years and the **quinquennial sample surveys on employment and unemployment** conducted by the **National Sample Survey Office (NSSO)**. The former is based on a complete enumeration of the population. Workers in the Census are enumerated as main workers and marginal workers. The Census 2011 presents data, at the village/urban block level (for slums in all statutory towns also, which have been treated as separate enumeration blocks in **Census 2011**), on the number employed (male and female) or the size of the male and female workforce

⁵ Indian Labour Yearbooks (the latest is for 2009 and 2010) and Annual Employment Unemployment Survey (the 4th report of this pertaining to 2012-13 is the latest) Labour Bureau (Ministry of Labour and Employment), Shimla.

(main workers and marginal workers) and its distribution by four economic activity categories – (i) cultivators, (ii) agricultural labourers, (iii) household industries and (iv) other activities. The rest of the population, namely, those who are neither main workers nor marginal workers, are categorized as non-workers. All other data on employment and unemployment are available at the district level upwards for rural and urban areas and the urban data by urban agglomerations and size classes of cities and towns. In Census 2011, till December 2014, the following data has been published:

- a) The Primary Census Abstract (PCA), published for each village and urban ward, provide, among others, the number of female and male main workers, marginal workers and non-workers for overall, SC and ST for each of the four-fold classification of economic activity, i.e., cultivators, agricultural labourers, household industry and other workers;
- b) The number of female and male main workers, marginal workers and non-workers in each single year of age, classified further by four-fold classification of economic activity and social group disaggregated at India, State and district level.

The kinds of data on employment and unemployment available from the Census 2001, and to be published in Census 2011 for rural (R) and urban (U) and (R+U) is shown below:⁶

- a) The distributions of the male and female main workers by economic activity (the first digit level of the NIC code) – ten categories of economic activities⁷ and classified further by age groups and educational level (for the all India table) and by educational level⁸ for the table on India, States and Union Territories;
- b) Similar distributions for male and female marginal workers;
- c) Main workers, marginal workers, non workers, those marginal workers that are available for or are seeking work (unemployed) and those non-workers that are available for or are seeking work (unemployed), by sex, social group and educational level;

⁶ **Census** tables released so far are available on **CDs** for users on payment of the prices indicated in the **Census website** <http://www.census.nic.in>. Most of the India and State/UT level tables can be viewed in / downloaded from the census website. Highlights of and introductions to tables, concepts and definitions and an advance release calendar are also in the website. Tables are also available at State/Union Territory/District City level on **CDs**.

⁷ In Census 2001, the NIC 1998 was used for dissemination of the results. In NIC '98, the first level had the following categories: a) Agriculture, Hunting & Forestry, b) Fishing, c) Mining & Quarrying, d) Manufacturing, e) Electricity, Gas and Water Supply, f) Construction, g) Wholesale and Retail Trade, h) Hotels and Restaurants, i) Transport, Storage and Communications, j) Financial Intermediation, k) Real Estates and Business Activities, l) Public Administration and Defence, and Compulsory Social Security, m) Education, n) Health & Social Work, o) Other Community, Social and Personal Service Activities, p) Private Households with Employed Persons, q) Extra-Territorial Organizations and Bodies. In Census 2001 tables, Categories A& B were grouped together, J & K were grouped together and L to Q were grouped together.

⁸ 1) Illiterate, 2) literate but below metric, 3) metric/secondary but below graduate, 4) technical diploma or certificate not equal to degree, 5) graduate and above other than technical degree, and 6) technical degree or diploma equal to degree or post graduate degree and a further sub-classification of item 6 into engineering and technology, medicine, agriculture and others.

- d) Similar distributions for unemployed SC population, ST populations and further classification of the distribution for unemployed general population by religious communities;
- e) Distributions of (i) main workers, (ii) marginal workers, and (iii) non-workers by main activity, educational levels, age and sex; and
- f) Similar distributions for SC population, ST population, further classification of the distribution in item “e” above for the general population by religious communities;
- g) The number of main workers, marginal workers and non-workers among the disabled by type of disability, age and sex; and
- h) The male and female workforce by detailed economic activities at the three or four digit levels, distribution by industrial categories (according to **National Industrial Classification – 1998 (NIC 1998)** and a separate table by occupations (as per the **National Classification of Occupations – 1986 (NCO 1968)**) and educational profile and;
- i) The number of marginal and non-workers who are seeking/available for work;
- j) The major non-economic activity of the non-workers, namely, student, pensioner, household duties, etc. by age and sex. This category also provide information on vulnerable sections of the society like beggars, etc.

The **NSSO quinquennial surveys on employment and unemployment** constitute the other major source of data on employment and unemployment. The last survey for which results have been published is the **68th Round survey** conducted during July, 2011 and June, 2012. The earlier surveys related to October, 1972 to September, 1973, July, 1977 to June, 1978, January – December, 1983, July 1987 to June, 1988 July, 1993 to June, 1994, July 1999 – June 2000 and July 2004- June 2005. These measure employment/unemployment/labour force status on the basis of the Usual Status and Current Status and arrived at four measures of employment/unemployment/labour force, namely, the Usual Principal Status (UPS), the Usual Principal and Subsidiary Status (UPSS), the Current Weekly Status (CWS) and the Current Daily Status (CDS) employment/unemployment/labour force status. These concepts and the measures have been discussed in the **Unit on “Employment and Unemployment: Policy Implications” in Block 1 of MEC – 005** on Indian Economic Policy in your first year course. These surveys provide the per thousand distribution of variables by characteristics along with estimated number of persons and/or the sample number of persons for each column and row characteristic. These can be used to estimate new proportions – like for example the worker participation rate or the unemployment rate among the poor (those below a certain income class) and the non-poor – and also estimates of the magnitude of employment or unemployment using the estimated sample proportions and the relevant population projection for the midpoint of the survey period. The surveys⁹

⁹ Some of the reports relating to employment and unemployment on the 68th round are **Report No. 554 on “Employment and Unemployment Situation in India”** and **Report No. 557 on “Informal Sector and Conditions of Employment in India”**. All these can be downloaded from the MoSPI website: www.mospi.gov.in by becoming a registered user, which is free of charge.

provide the following type of data¹⁰ for Rural (R), Urban (U) and (R+U) at national and State levels¹¹:

- a) Distribution of male and female UPS/UPSS/CWS/CDS workforce by employment status – self-employed, regular wage/salaried employment and casual labour – and by age group, educational level and primary, secondary and tertiary economic activity¹²;
- b) Distribution of UPS/UPSS male and female workforce by economic activity up to the three-digit code of NIC; and similar distribution by occupation up to the three-digit code of NCO 1968;
- c) Distribution of male and female UPS/UPSS/CWS/CDS workforce by employment status and by primary, secondary and tertiary economic activity and by MPCE classes;
- d) Distribution of UPS workers in each employment status by usual subsidiary economic activities;
- e) Distribution of UPSS employed by place of work (same village/town, another village/town) and by distance of the place of work from the place of residence;
- f) Proportion of persons who are more or less regularly employed and the distribution of persons who are not regularly employed by duration for which they are available for work; (*underemployment*)
- g) Distribution of UPS employed by “CWS employed”, “CWS unemployed”, “out of the labour force by the CWS criterion”, showing *underemployment* among the UPS employed;
- h) Similarly distribution of the CWS “employed”, “unemployed,” and “out of the labour force” on each half-day of the reference week giving the *underemployment* among the CWS employed;
- i) Distribution person-day of employment by (i) principal¹³ economic activity of the household, (ii) household type¹⁴, and (iii) household land cultivated class, [distribution at (iii) only for rural areas];
- j) Distribution of households and female-headed households by the number of male and female adults (aged 15+) employed under the UPS criterion – households with no adult UPS employed, number with one male adult UPS employed, number with one female adult employed, number with one male adult and one female adult employed and so on;

¹⁰ The **unit record data**, that is the basic data collected in the surveyed households, are available in **CDs** from the Computer Centre of the MoSPI on signing an undertaking and making a payment. The details can be seen at http://mospi.nic.in/Mospi_New/upload/nssoratelists_UnitData.pdf.

¹¹ Technically, data should be available by 70 and odd NSS regions being made up of one or more contiguous districts. As the **unit record data are available on floppies from NSSO on payment**, one can make any kind of tabulation for any region or regions. However, one should be checking the sample size while preparing such estimates, as that affects the reliability of an estimate.

¹² In some cases, only by agricultural sector and the non-agricultural sector.

¹³ The economic activity that accounted for the maximum of the income of the household in the 365 days preceding the date of the survey.

¹⁴ The nature and type of work from which a household derives its major income is an important indicator of the activity pattern of its members. The classification of households by household type is based on the major economic activity of the household during the 365 days preceding the date of the survey.

- k) UPS/UPSS/CWS/CDS unemployment rates (can be easily estimated from the tables on distribution of 1000 persons by various characteristics, as indicated in the main paragraph) for all groups together and for different groups like gender, age group, educational level, MPCE classes, household type, household land cultivated class and principal household economic activity, etc.;
- l) Average daily salary/wage earnings of regular wage/salaried employees aged 15-59 by sex, sector of work and education; a similar distribution by occupational groups and education; and
- m) Average daily wage/earnings per day received by casual labour by sex, age group, type of operation, and sub-round¹⁵.

Data on employment are thus available from several sources. Estimates of employment derived from different sources for the same sector or sub-sector will differ. While this may be frustrating to a lay person, it opens up an exciting and challenging opportunity to an analyst to unravel the factors responsible for such variations and to find ways and means of tackling such factors. Such factors could be differences in the concepts, definitions and mode of collection of data (sample survey, census or administrative/statutory reporting systems) used by the different sources. There may be other factors causing the divergence in estimates. Some steps could be taken to remove at least a few of these factors. Data collecting agencies should adopt the same concepts and definitions for enquiries on the same or similar subjects, as far as possible. The use of trained personnel in data collection does have a favourable impact on the quality of data and should receive consideration. Estimates based on sample surveys should be accompanied by estimates of the standard error to which the estimates from the survey are subject¹⁶.

24.2.2 Quality/Adequacy of Employment

NSSO survey data (items above) can be used to analyse the quality and adequacy of employment. Besides underemployment among the employed, other aspects of quality can also be looked at. One is the proportion of the employed by employment status, especially the proportion of the work force in 'casual employment'. The second is a comparison of the average daily earnings of male and female, regular and casual workers in different sectors and operations with the prevailing statutory minimum wage and the poverty line. The third is a look at the pattern of employment status of the workers belonging to poor households. These will throw light on the quality of employment enjoyed by the workforce, quality in terms of the intermittent nature of work, tenure of employment, employment security and low wages and above all, the prevailing gender differences in these aspects of quality. Gender differences in access to employment in different occupations and sectors of economic activity would be clear from a perusal of the tables listed in the preceding section. Even aspects of the question of the invisibility of the female worker, leading to underestimation of the female workforce can be examined¹⁷.

¹⁵ One year long round of the Survey has four sub-rounds to take note of the seasonal effect on the variables under investigation.

¹⁶ Reports on NSSO surveys do provide information on the concepts, definitions, coverage, sampling design and estimation procedures adopted and the standard errors of estimates presented in the reports.

¹⁷ NSSO Report No. 554 referred to in an earlier footnote. See also "Gender and Employment in India", T.S. Papola & Alakh N. Sharma (Ed), published by Indian Society of Labour Economics and Institute of Economics Growth in association with Vikas Publishing House Ltd, New Delhi. (1999).

The Labour Bureau, Shimla under the Ministry of Labour also publishes¹⁸ data on wage levels in the organized sector and on the welfare of labour. Data on total earnings of factory workers are collected through the statutory returns under the Payment of Wages Act, 1936 from establishments defined as factories under the Factories Act, 1948. The Act was applicable to employees with earnings¹⁹ up to Rs. 200. This limit has been increased from time to time to 1600 in 1982. These returns are, however, not received from all factories. The Bureau also conducts Occupational Wage Surveys in selected industries at regular intervals (called first round, second round and so on) and publishes reports²⁰ on these surveys) that provide the distribution of workers by levels of earnings and by occupations for each industry. These reports facilitate analysis of variation in levels of earnings within occupations, across gender within occupations, across regions and industries and to judge the adequacy of such employment opportunities in the light of statutory minimum wages and the poverty line. We have seen in the Unit on Agricultural and Industrial Data that the ASI gives information on the total wages, total emoluments and employee compensation along with mandays of workers and mandays of employees in different industries in the factory sector. These thus help in deriving the average wage per worker-manday and the average emoluments per employee-manday and the average employee compensation per employee-manday.

As for the unregistered sector and the unorganized part of other sectors, the **DE, NDE and OAE Surveys²¹ and other Establishment Surveys of the CSO** in different sectors (till the early 1990s) and the **unorganized sector surveys of the NSSO²²** provide data on average annual earnings for men, women and children in such establishments. **Regular reports like “Wage Rates in Rural India”** (the latest published relates to 2004-05) and the **Report on the Working of the Minimum Wages Act, 1948** (the latest is for 2003), of **Labour Bureau** enable an analysis of rural/unorganized sector wage levels *vis-à-vis* statutory minimum wages and poverty line.

The prevalence of child labour, which depicts an exploitative dimension of the economic system, can be seen from the Census and NSSO tables on the distribution of the work force by age groups and activity, the former down to the district level and the latter up to the State level (technically down to NSS regions due to availability of the unit record data on floppies/CDs). Such data may not fully reflect the ground level realities because surveys may not be able to extract information on employment of children, for various reasons. Further, such data are also dated. These can help only in drawing attention to the areas where child labour is prevalent so that the authorities concerned can initiate further action. It is usually the Non-Government Organisations (NGOs) active in the field of the rights of children that succeed in locating establishments employing children and press the Government to take further action.

¹⁸ **Yearbooks of Labour Statistics, (various years), Ministry of Labour, Shimla.**

¹⁹ Earnings include basic wages, dearness allowance, money value of concessions, annual or prepaid bonus, and arrears.

²⁰ **Reports on Occupational Wage Surveys** (Successive Rounds – the latest publications relate to the sixth round), Ministry of Labour, Labour Bureau, Shimla.

²¹ Directory Establishments, Non Directory Establishments and Own Account Enterprises. The first two employ at least one hired worker and a total of 6 or more persons and 1 to 5 persons respectively. In Own Account Enterprises, no hired worker works on a regular basis. These surveys are now being conducted by the NSSO. The of **NSS Report 549, for the year 2010-11 is the latest report on unorganized non agricultural enterprises (excluding construction), which provide data on DE, NDE and OAE.**

²² Besides the reports listed in Sub-section 21.3.4 of unit 21.

24.2.3 Labour Welfare

The Labour Bureau publishes²³ data on several aspects of labour welfare – data on industrial injuries, injuries in mines, compensation to workers for injuries and death, industrial disputes, health insurance, provident fund and trade unions of employers and workers. Statistics on industrial injuries are collected through statutory returns under the Factories Act, 1948 that provides that industrial accidents due to which the affected persons are prevented from attending to work for at least 48 hours should be reported to the inspector of factories. These depend on returns, and the sizeable non-response in the submission of these mars the quality of this source of data on incidence of fatal and non-fatal injuries in factories in mines under the Mines Act, 1952, as amended in 1983. Initially, data on the number of serious accidents and the accident rate were classified as ‘fatal’ and ‘serious’. Subsequently, from 1984, accidents and the accident rate (accidents per 100 employees) were classified as ‘fatal’ ‘spot serious’²⁴ and ‘reportable serious’²⁵. Complete statistics are not available for the same reasons mentioned earlier. Statistics on ‘compensated injuries’ and the amount of compensation paid, both classified as (resulting in) ‘death’ and (leading to) ‘disability’ – ‘permanent’ and ‘temporary’, are collected under the Workmen’s Compensation (WC) Act, 1923 on the basis of annual returns received from the State Governments, Posts & Telegraph Departments and the Railway Board for different Zonal Railways under the Act. Compensation is payable to workers employed in ‘scheduled employments’²⁶ for injuries due to accidents resulting in death or disablement for more than three days, provided that it is not caused through the fault of the worker himself. The number of injuries reported in the returns does not reflect the total number of injuries that occur, as all the injuries are not compensated for. Further, many of the establishments covered by the Act fail to submit returns and, therefore, the information received by the State Governments about the compensated injuries and the amount of compensation paid is incomplete. Compensation for injuries in establishments covered by the Employees State Insurance (ESI) Act, 1948 are paid under the ESI Act and not under WC Act. These limitations affect the trends and comparability over time of compensated accidents.

Statistics on the number of (a) industrial disputes²⁷, (b) workers involved in the disputes, (c) mandays lost and (d) causes of disputes – (i) wages and allowances, (ii) bonus, (iii) personnel matters, (iv) retrenchment, (v) leave and hours of work/shift working, (vi) indiscipline and violence, (vii) others, and (viii) cause not known. Completeness of these data would depend on the extent to which outside authorities are involved in the resolution of the disputes. How are the workers and the employers, the two pillars of industrial progress, organized to fight for their rights? The Trade Unions Act, 1926 regulates the formation and functioning of such organizations. The annual returns under the

²³ Yearbooks of Labour Statistics referred to in an earlier footnote.

²⁴ This is one where one or more persons have received serious bodily injury. This means any injury which involves, or in all probability will involve, (a) the permanent loss of any part or section of the body or use of any part or section of the body or (b) the permanent loss of, or injury to, sight or hearing or (c) any permanent incapacity or (d) the fracture of any bone or one or more joints or bones of any phalanges of hand or foot.

²⁵ This is one where one or more persons have received “reportable injury”. This means any injury other than a serious bodily injury, which involves, or in all probability will involve, the enforced absence of the injured person from work for a period of 72 hours or more.

²⁶ Employments specified in the Schedule appended to the Act under reference.

²⁷ Disputes resulting in work-stoppages involving 10 or more workers.

Act received from the State Governments relate only to those organizations that have been registered with the State Governments under the Act. And it is not obligatory on these organizations to secure registration under the Act. The response rate even among the registered ones is less than 50 per cent. The data provided in the **Yearbooks of Labour Statistics** relates to the number of (i) workers' organizations on the register (ii) those submitting returns, (iii) percentage response, (iv) membership at the end of the year, (v) income including balance carried over from the previous year, (vi) expenditure, and (vii) balance of funds at the close of the year and similar data for employers' organizations. Information on the membership of the employers' and workers' organizations by NIC 1987 is available in the Yearbooks. Statistics relating to the working of various welfare funds like the Coal, Mica etc., Mines Welfare Funds and the ESI Corporation and the Employees Provident Fund Organisation (EPFO) – number of beneficiaries/members, etc., - are also provided by Yearbooks and the **annual reports of the ESIC and EPFO**²⁸.

As for the unorganized sector, the **Labour Bureau's** reports on their ongoing programme of surveys on (i) the working and living conditions of Scheduled Caste/Tribe workers, (ii) living conditions of unorganized workers, and (iii) contract labour provide information on the qualitative aspects of employment in terms of variables like wage levels, working and living conditions, work place safety and amenities at the work place of these classes of unorganized workers in rural and urban areas.

Check Your Progress 1

- 1) Name the sources that provide data on employment.

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- 2) Explain the kind of data on employment and unemployment available from the population census 2001.

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- 3) State the different measures of employment/unemployment/labour force used by NSSO in different quinquennial surveys.

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²⁸ See also the Section on Health in this Unit.

- 4) Identify the different aspects of labour welfare on which data are compiled by the Labour Bureau.

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24.3 EDUCATION

Education is an important instrument for empowering people, especially women. Education nurtures and develops their innate talents and capabilities and enables them to contribute effectively to the development process and reap its benefits. It is also an effective instrument for reducing social and economic inequalities. We have built up over the years a vast educational system in an attempt to provide education for all, to ensure that the skill and expertise needs of a developing economy are met satisfactorily and at the same time, to monitor the functioning of the educational system as an effective instrument for tackling inequalities. We would, therefore, like to look at data on different aspects of the educational and training system such as its size and structure, the physical inputs available to it for its effective functioning, its geographical spread, the type of skills and expertise it seek to generate, the access of different sections of society and areas of the country to it and the progress made towards the goals like ‘total literacy’, ‘universalisation of secondary education’, ‘education for all’ and ‘removal of inequalities’.

The United Nations, in the year 2000, has put achieving of universal primary education as one of the eight Millennium Development Goals, to be achieved by 2015. Education plays an important role in shaping the post 2015 development agenda as well. The Government of India has enacted the Right to Education Act in August 2009. Therefore, the importance of research on the progress of the nation towards achieving these goals and its effects on the other social and economic goals is increasing by day.

The Department of School Education and the Department of Higher Education of the Ministry of Human Resources Development (MHRD), the National University of Educational Planning and Administration (NUEPA), National Council for Educational Research and Training (NCERT) and the University Grants Commission (UGC) collect and publish educational statistics, conduct research studies and surveys in the area of education. The International Standard Classification of Education (ISCED) is used worldwide to compile and compare cross-country statistics of education. In 2014, for the first time, the MHRD has developed the Indian Standard Classification of Education (InSCED), as a part of collection, dissemination and presentation of statistical data on education. Educational activities have been first classified into 16 broad levels from A through O and X. Levels A to E pertain to School Education, levels F to L pertains to Higher Education, levels M, N and O pertain to Certificate Courses, In-service training and Adult Education. The detailed structure can be accessed at http://mhrd.gov.in/sites/upload_files/mhrd/files/statistics/InSCED2014_0.pdf.

The annual publication “**Educational Statistics at a Glance**” provide a host of information on school education, like number of educational institutions, level and Stage-wise enrollment in school and higher education, teacher-student ratio, drop-out rates, examination results, public expenditure on education, etc. The MHRD also publishes a compendium on Universities in India, providing University-wise data on student enrollment, number of teachers, staff quarters, hostels, etc. The Annual Report of the MHRD also provides information on school and higher education in India. All these reports can be accessed free of charge at the website www.mhrd.gov.in in the sections documents and reports and the section statistics.

The NUEPA has developed a **District Information System of Education (DISE, can be accessed at www.dise.in)** to record data from the schools and junior colleges in all districts of India. Analytical reports based on this data, like school and facility related indicators, enrollment based indicators, teacher related indicators and EDI and analytical tables can be accessed at <http://www.dise.in/AR.htm>. These reports are available from the period 200-02 onwards, although the time series varies among topics. Provisional results of the “**Report of the eighth AIES**”, (<http://www.aises.nic.in/surveyoutputs>) published by the NCERT, for the year 2009, in spite of being a bit dated, provides important data on school education statistics. While the data in the publication of MHRD are based on returns from the State Governments and Union Territory Administrations, the last one is based on a field survey. The University Grants Commission and MHRD provide data on university level courses in professional and technical courses. The MHRD has set up a **National Technical Manpower Information System (NTMIS)** – ([seehttp://www.iamrindia.gov.in/_aboutNTMIS.htm](http://www.iamrindia.gov.in/_aboutNTMIS.htm)) with lead centre at the Institute of Applied Manpower Research (IAMR), New Delhi and 21 nodal centres located at different States. It provides data on technical manpower – intake in and output from institutions and the utilization patterns of such output in detail through Tracer Studies²⁹ and other studies. These are disseminated through reports released from time to time by IAMR. **The Employment-Unemployment surveys of the NSSO and Education surveys conducted in the 52nd (1995-96), 64th (2007-08) and 71st (2014) Round of NSSO and the social and cultural tables of the population Census (ORGI)** also provide useful data on literacy and educational composition of the population or stocks of educated manpower of different levels of education and their utilization patterns – snapshots, at specific points of time, of the impact of the efforts in the area of education.

The kind of data available in these publications and sources are indicated below:

24.3.1 Educational Infrastructure

- a) Levels of literacy and progress of efforts under literacy campaigns; (MHRD)
- b) The number of institutions – colleges (including universities, deemed universities and institutions of national importance) and all types of general, technical and professional schools; (MHRD & UGC)

²⁹ Tracer Studies are, as the name suggests, trace or follow up specific cohorts or batches of students passing out of institutions to find out their present activity status. This helps in evaluating the trends over time in (a) the capacity of the economy to absorb the specific category of manpower in employment, (b) the waiting time for employment for the category of manpower, and (c) market value, in terms of salary levels in first employment, of the manpower category. These surveys are also called Cohort Studies.

- c) The number of universities, deemed universities and institutions of national importance, the distribution of number of colleges by categories like those teaching arts, science & commerce, oriental learning and different categories of professional subjects like law, agriculture, engineering & technology and medicine and the distribution of schools in the area of general education (and stages like pre-primary and primary etc.) and different categories such as those dealing with vocational, professional, special education etc. (MHRD & UGC);
- d) Teacher (male and female and those belonging to SC/SC communities), the proportion trained among them, terms and conditions of their employment and attrition of the stock of teachers by cause. (AIES);
- e) Patterns of management of colleges including professional colleges and deemed universities, recognition by appropriate bodies, availability of teachers and facilities like laboratory and equipment etc. (UGC);
- f) Patterns of management (Government, local bodies, private management, religious and linguistic minority trusts/organizations and so on), medium of instruction, type of school buildings (*pucca, kutcha*, thatched hut etc.), crowding (number of rooms in the building and the number used for instructional purposes), availability and adequacy of facilities like drinking water, laboratories and urinals (and whether these are available separately for girls). (Sixth AIES);
- g) Teachers in professional and technical institutions and the number of technical teacher training institutions. (MHRD & UGC);
- h) The number of Industrial Training Institutions (ITIs) and Advanced Training Institutes, and the training capacity for apprenticeship training in industry under the Apprenticeship Act, 1961 for those passing out of ITIs and the vocational stream of schools. (MoLE and MHRD);
- i) The number of institutions for training instructors for it is. (MoLE)³⁰;
- j) The number of Vocational Rehabilitation Centres (VRCs) for the Physically Handicapped³¹ set up by the DGE&T all over the country for giving adjustment training and placement in suitable employment through the Special Employment Exchanges for this group of people. (DGE&T³²);
- k) Expenditure on education by programmes like the *Sarva Siksha Abhiyan*, the Total Literacy Campaign and Adult Education; direct and indirect expenditure on recognized institutions of education. (MHRD).

24.3.2 Infrastructure Utilisation and Access to Educational Opportunities

- a) Literacy rates – overall and age-specific, among SC/ST and adults; (Census – Social & Cultural Tables; NSSO & MHRD);
- b) The number of students and the number of female students in the institutions specified in item ‘b’ above;

³⁰ Annual Reports of the Ministry of Labour, the part relating to DGE&T.

³¹ The phrase “physically challenged” instead of the phrase “physically handicapped” is being brought into use nowadays in public discussions on the subject.

³² See the preceding footnote.

- c) The number of students and the number of girl students by courses and stages of education in recognized institutions – from the nursery class to the high/higher secondary level and in schools for vocational & professional education and special education and similar data for rural areas. (MHRD);
- d) The number of male and female workers and marginal workers in the age group 5-9 and 10-14 – working children; (Census and NSSO); a comparison of this with the population in these age groups and data on school enrolment would lead to an assessment of the number of children who are neither in school nor in the workforce;
- e) Enrolment and output in institutions specified in items ‘h’, ‘I’ and ‘j’ above;
- f) Enrolment (and enrolment of female students) in university level general education courses by stages (degree, post graduate degree, diploma/certificate, research) and university level professional and technical education courses by faculty. (MHRD & UGC);
- g) Similar information of the kind mentioned above for Scheduled Castes and Tribes (SC/ST) and females belonging to such sections of society. (MHRD & UGC);
- h) Teacher-Pupil ratios at different levels of education. (MHRD);
- i) Intake and output of graduates and post graduates in different disciplines and faculties. (MHRD & UGC);
- j) Coverage of population in appropriate age groups by different stages of education. (MHRD);
- k) Dropout rates at different stages of education. (MHRD);
- l) Distribution of population attending educational institution by age, sex and type of educational institution for general and SC/ST population;
- m) Access of the general and SC/ST population to (or availability of) facilities for different levels of education in rural habitations and urban settlements belonging to different population slabs, in terms of distance of the habitation from the facility; similar information regarding non-formal education (NFE) centers. (Sixth AIES);
- n) Availability of special institutions suited to different types of disability of children in different villages and towns and the enrolment of disabled children in such institutions. (Sixth AIES);
- o) Utilization patterns of different categories of professional and technical manpower in general and trends in waiting time for employment, utilization patterns and bargaining power for employees’ compensation (salary etc.,) through tracer studies. (IAMR);
- p) The disabled among main workers, marginal workers and non-workers by type of disability, age and sex. (Census);
- q) Stocks of educated manpower and also selected categories of technical manpower for the general population, SC/ST and by religious communities;

- r) The distribution of population by different levels of educational attainment (including illiterates, literates without any educational attainment) for population groups like SC/ST/Backward Classes (BC)/general households and those belonging to different religions, household types like (a) those with different sizes of land holdings; (b) households self-employed in agriculture, households self-employed outside agriculture, agricultural labour households, other labour households and households depending largely on regular wage/salaried employment outside agriculture; and (c) households belonging to different monthly per capita consumption expenditure (MPCE) classes. (NSSO and Census)³³.

One should not forget to mention in this context the **National Human Development Reports (NHDR)** prepared by the Planning Commission (now rechristened as NitiAyog) and the HDRs prepared by different State Governments as very useful sources for the manner in which available data on education, health, and other areas have been utilized to compute human development indicators and also as important sources for basic data on these sectors.

Check Your Progress 2

- 1) Name the organizations/institutions that collect and publish the data on different aspects of education.

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- 2) What do you understand by the term 'Tracer Studies'? How are these useful?

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- 3) Prepare a chart stating the kind of educational data available in the various documents published by MHRD and UGC.

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³³ See also the sub-section (b) on education in the Section on 'Level of Inequality on Non-income Aspects of Life in Unit 4 on Poverty & Inequality: Policy Implications in Block 1 of MEC – 005 on Indian Economic Policy in your first year course.

24.4 HEALTH

One of the important dimensions of quality of life is health. A healthy individual can contribute effectively to production of goods and services. Investment in health is, therefore, an essential instrument of raising the quality of life of people and the productivity of the labour force. What is the health status of the population? What are the challenges to the health of the population and how are these being tackled? What kind of data is available about these aspects of the population, the health infrastructure and the efforts being made to deal with problems of health? What is the impact of these on the health situation, especially of women and children? The World Health Organisation (WHO), India website (<http://www.who.int/countries/ind/en/>) provides country statistics on health profile, nutrition, mortality and burden of disease and risk factors like those of alcohol and tobacco. The Central Bureau of Health Intelligence of the Ministry of Health and Family Welfare publishes the **“National Health Profile (NHP) of India”** every year. The publications **“Sample Registration System (SRS): Statistical Reports”**, **“SRS Compendium of India’s Fertility & Mortality Indicators, 1971-2001”**, **“Mortality Statistical and Cause of Death”**, **SRS Bulletin** and the **Social & Cultural Tables (C Series Tables)** of Census 2001 of the Office of the Registrar General of India (RGI), Ministry of Home Affairs and the **“Report on the National Family Health Survey (NFHS-4) – 2014-15”** of the Ministry of Health and Family Welfare contain a large amount of information on these aspects of health, at the State level. For district level information, you can see the reports of the Annual Health Survey (AHS) of the ORGI and the District Level Health Survey (DLHS) of the MoH&FW. The Government of India launched the National Rural Health Mission in 2005, which has now been expanded to cover urban areas and called the National Health Mission. From 2005, the MoH&FW publishes, as an offshoot of the NHM, the Rural Health Statistics (RHS) report each year.

24.4.1 Health Infrastructure

The RHS of the MoH&FW provide the following types of data:

- i) Demographic indicators – state-wise number of villages, rural and urban population, population growth rates and density, estimates of crude birth rates, crude death rates and infant mortality rates;
- ii) Rural health infrastructure – number of health sub-centres in each 5-year plan period, number of Primary Health Centres, number of community Health Centres, number of sub-centres, PHCs and CHCs functioning at the end of the year, number of sub-divisional hospitals, district hospitals and mobile medical teams, shortfall in health infrastructure, building position of sub-centres, PHCs and CHCs;
- iii) Health manpower in rural areas – Health workers (female)/ANM at sub centre, PHCs, Health workers (male) at sub centre, number of sub-centres/PHCs without ANMs/Health worker (Male), health assistants/LHVs at PHCs, doctors at PHCs, number of PHCs without doctors/ lab technicians/ pharmacists, number of PHCs with AYUSH facility, surgeons at CHCs, obstreticians and gynaecologists at CHCs, physicians at CHCs, paediatricians at CHCs, general dutty medical officers at CHCs, radiographers at CHCs, pharmacists at CHCs and PHCs, lab technicians at CHCs, nursing staff at PHCs and CHCs, etc.;

- iv) Facilities available at sub centre – number of sub centres functioning, with ANM quarter, ANMs living in sub centre quarters, number of sub centres functioning as per IPHS norms, number of sub centres with regular water supply, with electricity, with all-weather motorable approach road, number of PHCs functioning, with labour room, with operation theatre, with at least 4 beds, regular water supply, with electricity, with all-weather motorable approach road, with telephone, with computer, with referral transport, registered RKS, functioning as per IPHS (Indian Public Health Standard) norms;
- v) Facilities available at CHCs - number of CHCs functioning, with all four specialists, with computer/ statistical assistant for MIS/ Accountant, with functional laboratory, with functional OT, with functional labour room, with at least 30 beds, with functional X-ray machine, with quarters for specialist doctors, with referral transport, registered RKS, functioning as per IPHS norms, number of CHCs having a regular supply of allopathic drugs for common ailments, with AYUSH drugs for common ailments;
- vi) Training of medical and paramedical personnel –ANM/ HW (F) training schools funded by Government of India, established by Government of India, health and family welfare training centres, MPW (M) training centres;
- vii) Rural health care – some parameters of achievement – classification of States/UTs by average rural population covered by a sub centre, by a PHC, by a CHC, average radial distance covered by PHCs, ratio of LHV/ health assistant training schools to LHV/ health assistant, etc.;
- viii) Expenditure on health and family welfare – overall and on individual programmes like malaria control, filarial control and national leprosy eradication programme.

24.4.2 Public Health, Morbidity and Mortality Indicators

- i) Progress of the programme for vaccination of children and pregnant women;
- ii) Time series on the number of notified/reported cases of and deaths due to diseases like cholera, small pox, acute diarrhoeal diseases, malaria, *kalaazar*, Japanese encephalitis and meningitis;
- iii) The number of cases detected, treated and discharged in respect of diseases like leprosy and tuberculosis;
- iv) The number of patients treated, discharged and deaths due to (a) different types of cancer in specialized cancer hospitals, (b) different types of mental diseases, and (c) communicable diseases like diphtheria, poliomyelitis, tetanus (neonatal and others), hepatitis and rabies;
- v) Progress in the National Aids Control Programme and other National Control/Eradication programmes;
- vi) Utilization by beneficiaries of facilities provided by CGHS, ESI scheme, Control/Eradication programmes;
- vii) Incidence of morbidity and mortality by causes in zonal Railway hospitals;

- viii) Incidence of morbidity by diseases in the ESI scheme;
- ix) Causes of death statistics: distribution of deaths due to (a) selected diseases by age and sex, (b) specific causes under the group of diseases peculiar to infancy, and (c) causes related to childbirth, (d) causes related to childbirth and pregnancy (maternal mortality) and (e) accidents due to different types of natural and other causes (RGI);
- x) Medical certification of cause of death – distribution of such deaths by age, sex and major cause groups (18 groups of causes) and the extent of coverage of such certification to total deaths in each of the 18 groups (RGI);
- xi) Birth Rates (BRs), Death Rates (DRs) and natural growth rates and State-wise BRs and DRs (from SRS, RGI);
- xii) Mortality Indicators like the Crude Death Rate (CDR), Infant Mortality Rate (IMR)³⁴, Nano-Natal Rate (NNR)³⁵, Post-Natal Rate (PNR)³⁶, Still Birth Rate (SBR)³⁷, Age-Specific Death Rates (ASDRs) and Maternal Mortality Rates (MMR) (from SRS, RGI);
- xiii) Fertility data – 2001 (F series Tables) (census 2001);
- xiv) Disabled population in India by type of disability, sex and age in general/SC/ST population and a further classification by marital status for the general population (from Census 2001); and
- xv) Expectation of Life at Birth (e_0)³⁸, expectation of life at ages 10, 20, 30, 40, 50 and 60 for males, females and persons (from RGI).

24.4.3 National Family Health Survey (NFHS)

What is the impact of the efforts made to expand the size and reach and also enhance the quality of the health services on the health status of the family, especially of women and children? **The first National Family Health Survey (NFHS-1)** conducted in 1992-93 succeeded in answering this question and also in building up an important demographic and health database in India. This success paved the way for the conduct of the **second National Family Health Survey in 1998-99 (NFHS-2), third NFHS in 2005-06 and NFHS-4 in 2014-15**, to strengthen this database further and facilitate implementation and monitoring of population and health programmes in the country. **NFHS – 4 is covering, for the first time, all the 35 States and UTs as per Census 2011.** The survey is based on a representative sample of 5,60,000 households, up from about 1,90,000 households of NFHS-3. The survey provides State-level estimates of demographic and health parameters and also data on various socio-economic and programmatic factors that are crucial for bringing about desired changes in India's demographic and health situation. NFHS-1 and NFHS-2 were funded by the United States Agency for International Development, with supplemental funding from UNICEF. NFHS-3 funding was provided by the United States Agency for International Development, the Department for

³⁴ Relates to the number of children who die before their first birthday.

³⁵ Relates to the number of children who die in the first month of their life.

³⁶ Relates to children who die after the first month of life but before their first birthday.

³⁷ Relates to children who are born dead.

³⁸ The number of years that a person born today will, on the average live. Similarly, e_i , ($i=10, 20, 30, 40, 50, 60 \dots$) is the number of years that a person aged i years today will, on an average live.

International Development (United Kingdom), the Bill and Melinda Gates Foundation, UNICEF, the United Nations Population Fund, and the Government of India. Assistance for the HIV component of the NFHS-3 survey was provided by the National AIDS Control Organisation and the National AIDS Research Institute³⁹. The field data collection in the NFHS is conducted by different research organisations. A total of 18 such organisations collected data in NFHS-3 during December 2005 to August 2006. It has been planned to conduct the NFHS-4 through 11 reputed field agencies like the AMS, DRS, EHI, GFK, GIM, IIMR, NIELSON, SPVM, RDI, SPYM and VIMARSSH. **NFHS-3** provides

a) urban and rural estimates for most States, (b) separate estimates for 8 cities, and (c) estimates for the slum areas. **Besides a national report, reports are prepared for the States.** The NFHS reports can be downloaded free from the site http://www.rchiips.org/nfhs/sub_report.shtml. The kind of data on health and nutrition status of women and children and estimates of parameters related to these presented by the NFHS, are indicated in brief below:

- i) Educational level of the household population, school attendance of boys and girls and reasons for not attending school;
- ii) Distribution of housing by availability of basic amenities⁴⁰, ownership of agricultural land, house and livestock and durable goods; standard of living indicators based on these and habits like drinking, tobacco and smoking;
- iii) Distance of households from the nearest health facility and distribution of rural residents living in villages that have selected facilities and services;
- iv) Age at first marriage of (women) respondents, their exposure to mass media, their employment status and aspects of their empowerment or lack of it, including domestic violence;
- v) Current fertility, variation in current fertility by various factors, fertility trends, pattern of outcome of pregnancy, median number of children ever born and living to ever married women, patterns of birth order and birth intervals, median age of women at the first birth and the last birth of child, patterns of fertility preference and sex (of the child) preference;
- vi) Knowledge of use and time of first use of contraception, reasons for discontinuation of, or for not using contraception;
- vii) Estimates of age-specific death rates, crude death rates, infant and child mortality⁴¹;
- viii) Morbidity by selected diseases and its variation over States;
- ix) Vaccination of children, vitamin A supplementation for children, prevalence of acute respiratory infection, fever and diarrhoea, treatment of diarrhoea and awareness of treatment like ORS packets;

³⁹ See the website <http://www.rchiips.org/nfhs/nfhs3.shtml> which provides details of all the 4 NFHS surveys conducted so far.

⁴⁰ Electricity, source of drinking water, time taken to get water, method of purifying water, sanitation facility, fuel for cooking, type of house (*pucca*, *semi-pucca* and *kutcha*) and persons per room.

⁴¹ Child mortality relates to children who die between their first and 4th birthday. Under-five mortality relates to children who die between their 4th and 5th birthdays.

- x) Knowledge about AIDS and ways of avoiding it;
- xi) Food consumption of women, nutritional status of women, anaemia among them, iodisation of salt consumed in households and body mass index⁴² - an indicator of the health status of women;
- xii) Median duration of breastfeeding – overall and in different States, type of food consumed by children, nutritional status of children, anaemia among them and indicators of acute and chronic malnutrition among children – weight for age index, height for age index and weight for height index⁴³;
- xiii) Health problems of pregnancy, antenatal care, assistance during delivery, place of delivery, post-*partum* care, and care and treatment of reproductive health problems; and
- xiv) Couple protection rate⁴⁴.

It is necessary to make a reference here again to the NHDR 2001 of the Planning Commission and the HDRs of the State Governments for their importance in the field of health, education and other sectors.

Check Your Progress 3

- 1) Indicate the publications which contain the data on different aspects of health.

- 2) What type of database is provided by National Family Health Survey?

⁴² “Body mass index (BMI) = [weight in kgms.] / height in metres]. See Unit 4 on Poverty & Inequality – Policy Implications” (section on human development indicators) in Block 1 of MEC – 005 on Indian Economic Policy in your first year course.

⁴³ The National Institute of Nutrition, Hyderabad has recommended that the nutritional status of the international reference population recommended by the WHO could be used as the standard for India. The **Weight for Age Index** is a composite measure that takes into account both chronic and acute malnutrition. Children who are more than 2 standard deviations (s.d.) below the median value of the index for the reference population are “underweight”. The **Height for Age Index** measures linear growth retardation. Children who are more than 2 s.d. below the median value of the index for the reference population are considered short for their age, or are “stunted”. This is chronic undernutrition. The **Weight for Height Index** examines body mass in relation to body height. Children who are more than 2 s.d. below the median value of the index for the reference population are considered too thin or “wasted”. This is acute undernutrition. (NFHS – II). See the preceding footnote on BMI also.

⁴⁴ The percentage of currently married women aged 15 to 49 years using family planning methods at the time of the survey.

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3) What do you mean by the term ‘weight for age index’?
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24.5 SHELTER AND AMENITIES

Another important dimension of the quality of life is shelter and access to amenities like safe drinking water, toilet, adequate lighting and safe fuel for cooking. We have already discussed this in sub-section (d) under the section on “Levels of Inequality in Non-income Aspects of Life” in Unit 4 on “Poverty and Inequality: Policy Implications” in Block 1 of MEC – 005 on “Indian Economic Policy” in your first year course. The population Census, from 1991 onwards, have collected data on housing and amenities of the population during the house-listing and housing census phase, i.e., in the years 1990, 2000 and 2010. From Census 2001 onwards, results on parameters related to this aspect is disseminated for the urban slums as well. While Census 2001 results on urban slums relate to the towns with 20,000 or more population, all statutory towns were considered for identifying the urban slums and disseminating results for them. The results based on Census 2011 on housing stock, amenities and assets, at district level can be downloaded from http://www.censusindia.gov.in/2011census/hlo/HLO_Tables.html. This site also provides such tables for the urban slums. While the Population Census provides data at a much disaggregated level, a higher quantum of information is provided by the surveys conducted by the NSSO in their surveys on housing condition and condition of urban slums. The NSS survey reports based on surveys conducted in the 49th round (1993), 58th round (2002) and 69th round (2012) provide results at State/UT level on these parameters. The 69th round of NSS survey has published three reports – (i) “**Key indicators of drinking water, sanitation, hygiene and housing condition in India**”, (ii) “**Drinking water, sanitation, hygiene and housing condition in India**” and (iii) “**Housing condition and amenities in India**” – contain the latest data on housing conditions including those of dwelling in slums. The NFHS also gives some data on housing and amenities. These sources of data provide the following kind of information (data presented for rural/urban/urban slum/other urban areas in the case of items a to f):

- a) Distribution of households by type of structure – *pucca*, semi – *pucca* and *kutchha*;
- b) Access to toilet facility – SC/ST/other households – within the premises or not; type of latrine;
- c) Access to safe drinking water – SC/ST/other households, major source of drinking water;
- d) Use of electricity for lighting – SC/ST/other households;
- e) SC/ST/other households with **no** access to electricity, safe drinking water and toilet;

- f) SC/ST/other households with access to electricity, safe drinking water and toilet;
- g) Percentage of villages connected by roads⁴⁵;
- h) Type of slum – notified or non-notified -, availability of infrastructure like sewerage system, drainage system, means of garbage disposal and *pucca* road(s) within and approaching the slum, how has the slum been there, and whether the land on which the slum is located is owned by Local Bodies, State Government, etc.;
- i) Duration of residence of the household in the slum, reasons for coming to the slum, the place from which the household came, whether the household had any document of identification and whether it had at any time tried to leave the slum;
- j) Possession of durable goods and rent being paid for the premises; and
- k) Workforce participation rates, female workforce participation rates, workers and non-workers and workers by broad categories of economic activity, including household, industry; and demographic features of the slum population like sex ratio – overall and for children in the age group 0-6, etc.

24.6 SOCIAL CONSEQUENCES OF DEVELOPMENT

The development experience of the last few decades show that the cost of development is not shared equally by all sections of the society. Often the burden of the cost falls almost entirely on the poor and the voiceless. The best example of inequitable sharing of the burden of the cost of development programmes is provided by the current controversy over the *Sardar Sarovar Project (SSP)* over the river *Narmada* and the struggle of the *Narmada Bachao Andolan (NBA)* on behalf of the people displaced by the construction of the dam and the consequent submerging of their villages and their lands or are likely to be displaced with each installment of rise in the height of the dam. The other recent example that invited wide attention is the acquisition of the lands of tribals in Orissa for the industries in Kalinganagar in the State. The problem of people ousted from the land submerged by the water filling the reservoirs created by the dams or, for that matter, people whose lands are acquired by the State for purposes of development (building factories, dams etc.), called “oustees”, has been coming up ever since the first development projects were taken up in 1951. The State promised jobs to the oustees in the industries that came up in their lands in addition to compensation for the land acquired or alternative land to prevent loss of their livelihood. The question that has continued to agitate the minds of most development analysts is about the extent to which the rehabilitation of the displaced or the “oustees” has been successfully completed. What data are there on this vital question?

It may be mentioned that “oustees” were one of the priority categories for registration as jobseekers in the employment exchanges and placement in employment. The DGE&T, the organization concerned with employment exchange at the national level, is one source where some information on (i)

⁴⁵ Roads are all categories of roads surfaced or unsurfaced, district road, highways and rural roads. (**Basic Road Statistics of India, Ministry of Surface Transport, New Delhi.**)

how many of them were registered as job seekers under these categories, (ii) how many of these were actually placed in a job and (iii) how many languished on the “live registers” of employment exchanges for a long time before passing into oblivion, because if he or she did not renew her registration at specified intervals he or she would have ceased to be on the “live” register of job seekers. Past data with the DGE&T in the Ministry of Labour might show the proportion of those who just ceased to be on the register. This source of data, however, would have represented a very small part of whatever rehabilitation was done, because the kind of vacancies that can be filled through employment exchanges is restricted to jobs in Government not filled through competitive examinations, public service commission and other commissions/recruitment boards and jobs up to a specified salary level in public sector undertakings. The private sector is not obliged to fill its vacancies through the employment exchanges. Other than this source, Government – the Central or the State Governments – do not seem to have any data on the number of families which were displaced and the number rehabilitated. Data maintained by the State Governments concerned with the implementation of rehabilitation under, for example, the *Sardar Sarovar Project*, do not seem to reflect the actual situation on the ground, as has been shown by the Report of the Group of Ministers which toured some of the affected areas in Madhya Pradesh in April, 2006⁴⁶.

It was in 1994 that a **study supported by the Indian Council of Social Science Research (ICSSR)** attempted estimates of the extent of displacement of families between 1951 and 1990 due to projects like mines, dams, industries and wild life sanctuaries. It also estimated the proportion of those displaced in the Fifties and the Sixties who were resettled till 1980. It pointed out that there was practically no improvement in the Eighties. A **study on development-induced displacement** in West Bengal, between 1947 and 2000, conducted by a team led by **Walter Fernandes** has made estimates of (a) the number of people adversely affected by projects, (b) the number physically displaced, (c) the number resettled by the projects, (d) the rest that had been left to fend for itself following displacement, and (e) the proportion of those in (d) who were *dalits* and tribals. Yet another **study published in Economic and Political Weekly by Manipadma Jena** quotes official figures (of the Government of Orissa) of families displaced due to development projects between 1950 and 1993 and of the extent of land that had to be acquired by the Government for the purpose. Jena’s study also presents data on (a) the number of villages affected by the Hirakud Dam that was constructed between 1948 and 1957, (b) the number of families and people whose livelihood was disrupted due to displacement, (c) the number of families (all belonging to Scheduled Castes/Tribes) which were displaced forcibly by police, and (d) the number of families resettled in rehabilitation camps⁴⁷.

This aspect of development projects will cast greater responsibilities on the respective project authorities in these matters and closer monitoring of the implementation of resettlement plans. These will necessarily require the setting

⁴⁶ *The Hindu*, Chennai edition of Monday, the 17th April, 2006 carried the full text of ‘**the Group of Ministers’ (GoM’s) Report** on the OP-ED page.

⁴⁷ The studies referred to in this paragraph and their contents are taken from the article “**Creating Dispensable Citizens**” by **Usha Ramanathan**, in the Chennai edition of *The Hindu of Friday April 14, 2006*. Usha Ramanathan is an Honorary Fellow of the Centre for the Study of Developing Societies, New Delhi. The estimates made by the studies are given in the article. These have not been indicated here as the purpose of this Unit is only to indicate the very few sources of data that are available on this important social aspect of development and not to discuss the problem.

up of a reliable and transparent system of collection, compilation and analysis of statistics relating to displacement of people due to the project, their demographic, social, cultural and economic profiles, their resettlement in alternative livelihood, number absorbed in employment in the industrial establishment(s) for which the lands of the oustees were acquired, details relating to the levels of living of the oustees in the area of resettlement in terms of parameters like incomes, access to basic needs of life like water, shelter, education for their children and health and medicare at least until a reasonable number of years after resettlement, the time taken and the expenditure incurred for resettlement and so on.

24.7 ENVIRONMENT

The process of development adversely affects the environment and through it the quality of life of society. For instance the excessive use of fertilizers and pesticides rob the soil of its nutrients. Letting sewers and drainage and industrial effluents without prior treatment into rivers and water bodies pollute these water bodies causing destruction of aquatic life and endanger the health of people using such polluted water. The recent outcry in Tirupur, near Coimbatore, a place well known for garment exports, against untreated effluents from garment factories being let into the river used for drinking purposes is a case in point. The exhaust fumes containing Carbon Monoxide (CO) and lead (Pb) particles let in to the air we breathe by vehicles using petrol or diesel is an example of air pollution. The best example of industrial pollution through insufficient safety measures is the Bhopal gas disaster where lethal gases leaking from a factory's storage cylinder killed many people immediately and maimed many others for life. The forest cover of the country is continuously getting reduced due to indiscriminate felling of trees leading to reduction in rainfall and changes in rainfall pattern, besides climatic changes. The destruction of mangroves along seacoasts for housing/tourism development often leads to soil erosion along the coast by the sea. The adverse effects of current models of development on environment and the realization of the need to take note of the cost to development represented by such effects have now led to the development of environmental economics as a new discipline in economics.

The system of national accounts currently in use throughout the world, suffers from extreme narrowness. Vast quantities of information relevant for economic evaluation do not appear in them. Some don't because the appropriate data are hard, even impossible, to collect; but others don't because until recently the theory and practice of economic evaluation didn't ask for them. The demand for green national accounts has arisen because of a growing recognition that contemporary national accounts are an unsatisfactory basis for economic evaluation. The qualifier "green" signals that we should be especially concerned about the absence of information on society's use of the natural environment. As an extension of national accounting, the development of green accounting framework and related researches are therefore being undertaken around the world. The CSO, for the first time in India, have published the Report "Green National Accounts in India" in the year 2013. You can download a copy of this report from the Social Statistics Division of the CSO.

The Central and State Pollution Control Boards and the Ministry of Environment and Forests (MOEF) evolve and, monitor implementation of policies to protect the environment. Statistics on environment are collected through this process by the agencies mentioned above and the CSO. **The**

annual reports of the MOEF⁴⁸ and the Compendium on Environment Statistics, India 2003 published by the CSO from time to time are excellent sources of data on environment. The latter especially is very comprehensive and includes a very informative write up. The Compendium (and the annual report of MOEF) can be accessed in the respective **website of the two organizations**. The type of data on environment available from these publications are mentioned below by way of illustration:

- a) Ambient Air Quality Status [concentration of Sulphur di-oxide, Nitrogen di-oxide and Solid Particulate Matter⁴⁹ (SPM) in air] in major cities of India;
- b) Percentage of petrol-driven two-wheelers, three wheelers and four-wheelers meeting CO emission standards; and
- c) Water quality of Yamuna river (in the Delhi stretch) in respect of selective physio-chemical parameters between April, 1998 and March, 1999 – dissolved oxygen (milligrams/litre), Biological Oxygen Demand (BOD) (mg/l), faecal coliforms⁵⁰ (number/100ml), total coliforms (number/100ml) and ammonical nitrogen (mg/l).

24.8 QUALITY OF LIFE

We have already looked at several of the factors determining the quality of life of the people – education, health, employment, shelter and amenities and environment. We have also referred to the plight of displaced people uprooted from their normal life by development projects. One other factor, an important one, is the level of income or consumption. We have already looked at the data available on this aspect of life in the Unit on “Poverty and Inequality: Policy Implications” in Block 1 of MEC-005 on “Indian Economic Policy” – A compulsory course in first year. The relevant data are available from successive quinquennial surveys of the NSSO on consumer expenditure, namely, those on levels of consumption of different MPCE classes. That Unit also discusses dimensions of poverty and inequalities in income (consumption) and non-income aspects of life and about HDIs measuring shortfalls in human development in the population, Gender Development Indices (GDI) measuring gender discrimination, BMIs evaluating the health status of women and the measures, Weight for Age Index Height for Age Index and Weight for Height Index gauging the nutritional status of children. All these measures are also available from these sources, namely, NSSO, the Planning commission and the National Human Development Report 2001 and those of the State Governments for judging the quality of life of the Scheduled Castes and Tribes. The reports (prepared every year) of the Commission for Scheduled Castes and Tribes provide (review) data on:

- i) the progress in education of these sections of society;
- ii) Progress in the utilization of the reservation quotas in different services of the Governments and the public sector undertakings and the efficacy of measures taken by Government in enabling members of the weaker sections of society in gaining access to these opportunities;

⁴⁸ The latest report of 2013-14 can be accessed at http://www.moef.nic.in/sites/default/files/annual_report/AR-2013-14-Eng.pdf.

⁴⁹ SPM consists of metallic oxide silicon, calcium and other deleterious metals.

⁵⁰ The most common contamination in water is from disease-bearing human wastes which is usually detected by measuring faecal coliform levels.

- iii) enforcement of laws like the Untouchability Act; and
- iv) difficulties of these sections of society – ill-treatment, practice of untouchability, discrimination and lack of access to financial and technical assistance to entrepreneurs belonging to these classes.

The Ministry of Social Justice and Empowerment, the Ministry of Tribal Affairs, the National Commission of Backward Classes (NCBC), the State Backward Class Commissions, the Minorities Commission, the National Commission on Women and the State Commissions on Women also conduct surveys, bring together and review a large amount of data on the progress of or the lack of progress in curbing exploitation of, and violence against these sections of society, raising the shares in education and employment of these communities and groups and in empowering and bringing these sections into the mainstream of life. These are comprehensive sources of data on the efforts being made and need to be made to empower these sections of society and elevate their status in society. The Commission for the Aged (Senior Citizens) and the Commission for Children are sources of data on these sections gathered at one place from various primary sources⁵¹ and analysed to highlight issues that need attention. The Ministry of Social Justice and Empowerment (Annual Report of the Ministry), the nodal agency that is entrusted with the responsibility for the development and empowerment of the physically and mentally challenged, the weaker sections of society and women and the development of children and the welfare of the aged, constitute another source of data on the status of these vulnerable groups in society.

Check Your Progress 4

- 1) What kind of data/information is provided by NSSO on housing conditions in India?

- 2) Do you think that the data on registrants with the employment exchanges provide adequate information about the persons displayed by development projects? Give reasons in support of your answer.

⁵¹ For instance, for the aged, important sources of data are (a) the NSSO Report No. 446 (52nd Round) “The Aged in India – A Socio-economic Profile: 1995-96”. The Census 2001 is a mine of information on the Aged as it presents a number of social, economic and cultural characteristics by age groups and gender, one such group being 60+. Data on women and children and the disabled also flow from the Census and other sources of data for these groups have already been referred to elsewhere in this unit.

3) Name the documents, which contain the statistics on environment.

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4) Which department/ministry has been assigned the responsibility to provide information data on development and empowerment of weaker sections of the society?

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24.9 LET US SUM UP

We have tried to enumerate the various sources of data in the social sector and looked at the kind of data available in different sub-sectors of the social sector. We have seen that there are a number of sources of data on employment covering parts of the economy. There are two sources that are comprehensive and cover the entire economy. These enable an analysis of trends in employment and unemployment over the years, the industrial, occupational and educational composition of the employed and their age profile, the educational profile and the age structure of the unemployed, the quality and adequacy of employment in terms of wages, tenure of employment and employment security of workers. Similar analysis is possible for several subsections of the economy and society that are relevant to the country's objectives of economic and social policies. The database on welfare of labour is somewhat incomplete in some areas, calling for stricter monitoring of the submission of statutory returns and the implementation of existing legislation. Enormous amount of data on educational infrastructure, the utilization of such facilities and the output of the educational system are available and periodic comprehensive surveys add to the richness of the database. However, there is a need to go into such discrepancies as may be there between data collected by the reporting system in the educational administration and the data thrown up by the surveys, to initiate corrective action to tone up the large database built up over the years. Another important need is to reduce the time lag in the availability of data for policy makers as well as researchers. Data on health are being built up from more than one source, namely, the Registrar General of India on aspects like vital rates such as birth and death rates, IMR, MMR and morbidity rates and life expectancy, while the CBHI collects and brings together data from the different wings of the Ministry of Health and the State Health Departments and the different health professional councils. Health and Medicare and health situation data are comprehensive in terms of item coverage but time lags need to be reduced so that data relating a particular time point is complete in terms of coverage of all States and Union Territories. Data from NFHS is a valuable

addition to the database on health, especially from the point of view of health and nutrition status of women and children. The database on shelter and amenities has been updated recently by the Census 2011 and the NSSO survey of the 69th round (July – December, 2012) and also includes specific data on urban slums. A database on environment – air pollution, soil degradation and noise pollution – is getting built up steadily. Data on levels of living, both in terms of income and non-income aspects of life and for the general population as well as for the weaker sections of society can be derived from existing data and used as a basis for planning programmes to reduce poverty and inequalities.

We have also noted a grey area in the data systems we have considered. There is no data worth the name on people displaced from their livelihoods by development projects and the number among these who have been resettled in alternative livelihood. There is a growing realization, at least among some sections of development analysts and thinkers that the burden of the costs of development is invariably borne mostly by the poor and the voiceless. There is an urgent need to build up a transparent database on people displaced by development projects and their resettlement and the basic amenities made available to them.

24.10 SOME USEFUL BOOKS

- Ministry of Environment and Forest** : State of Environment Report, India (2009)
- Ministry of Statistics & Programme Implementation** : Green National Accounts in India – A Framework (2013)
- Ministry of Labour and Employment** : Indian Labour Yearbook 2009 and 2010 (2010)

24.11 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

- 1)
 - i) Employment Market Information (EMI) Programme of Directorate General of Employment and Training (DGE&T), Ministry of Labour
 - ii) State Directorates of Employments (DES)
 - iii) Economic Census
 - iv) Annual Survey of Industries
 - v) Population Census
 - vi) Quinquennial Sample Surveys on employment and unemployment conducted by NSSO.
- 2) See Sub-section 24.2.1
- 3) Usual Principal Status (UPS), Usual Principal and Subsidiary Status (UPSS), Current Weekly Status (CWS) and the Current Daily Status (CDS).
- 4) See Sub-section 24.2.3

Check Your Progress 2

- 1) The department of School Education and higher education of Ministry of Human Resource Development, NCAER, UGC, Institute of Applied Manpower Research etc.
- 2) See footnote no. 29
- 3) Do yourself

Check Your Progress 3

- 1) See Section 24.4
- 2) State Level estimates of demographic and health parameters and the data on various socio-economic factors crucial for bringing changes in demographic and health situations.
- 3) Composite measure that takes into account both chronic and acute malnutrition.

Check Your Progress 4

- 1) See Section 24.5
- 2) See Section 24.6
- 3) The annual Reports of Ministry of Environment and Forest and the compendium of environment statistics.
- 4) Ministry of Social Justice and Empowerment (annual reports of the Ministry).