METADATA FOR NATIONAL AGRICULTURAL STATISTICS IN NEPAL

Central Bureau of Statistics

National Planning Commission Secretariat

Government of Nepal

August 2007

PREFACE

The Central Bureau of Statistics, which is the nodal statistical agency, has been serving the nation by providing statistical information for planning and measuring overall development efforts. Nepal is one of the partaker of 'General Data Dissemination System' (GDDS). The main objective of the GDDS framework is to help the country to systematically evaluate and improve its statistical systems in a comprehensive and prioritized basis and hence, it is mandatory for those countries taking part in GDDS to publish metadata.

Metadata is data about data. It describes how and when and by whom a particular set of data was collected, and how the data is formatted. Metadata is essential for understanding information published by national statistics offices. The metadata also provide users with a tool to better assess the usefulness of the data for their own particular purposes.

Agriculture Statistics Section of the Bureau has made an attempt to bring out on **'Metadata for National Agriculture Statistics in Nepal'** which is first of its kinds in the publication history of CBS. I hope, the publication would help users of Nepalese agriculture statistics with list of agriculture data available, concept and definition applied, methodology, coverage and frequency of data collection and their producers as well. Suggestions on this publication are welcome as it helps to improve our further publications. I would like to thank all those agencies and individuals who provided the necessary information and were involve in bringing out this publications in time.

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Director General
Central Bureau of Statistics

August 2007

Kathmandu

ABBREVIATIONS

AASD	Agri-business and Agriculture Statistics Division
ADB	Asian Development Bank
ABPSD	Agri-business Promotion and Statistics Division
ASD	Agriculture Statistics Division
BSO	Branch Statistics Office
BSOC	Branch Statistics Office Coverage
CBS	Central Bureau of Statistics
CLS	Crop and Livestock Survey
CNSP	Consolidated National Statistical Plan
DADO	District Agricultural Development Officer
DFID	Department for International Development
DLSO	District Livestock Service Officer
DOA	Department of Agriculture
DOC	Department of Customs
FAO	Food and Agriculture Organization
ILO	International Labor Organization
JT	Junior Technicians
JTA	Junior Technical Assistants
MOAC	Ministry of Agriculture and Co-operatives
NLFS	Nepal Labour Force Survey
NPEDC	National Productivity and Economic Development Centre
NLSS	Nepal Living Standard Survey
NSC	National Statistical Council
NSCA	National Sample Census of Agriculture
PC	Population Census
PPS	Probability Proportional to Size
PRSP	Poverty Reduction Strategy Paper
PSU	Primary Sampling Unit
UNDP	United Nation Development Programme
VDC	Village Development Committee

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Chapter 1

National System of Agricultural Statistics

1.1 The legal frame and statistical advisory bodies

The present statistical system of Nepal can effectively be considered as a decentralized system with the Central Bureau of Statistics (CBS) discharging a pivotal job. CBS was created in 1958 by virtue of Statistics Act, 2015 (Annex l) as the sole agency for the collection, consolidation, publication and analysis of statistics. A National Statistical Council (NSC) was formed in 1988 as the coordinating and policy making body in the area of statistics. The main objectives of the NSC are:

I) To develop an integrated statistical system by formulating short term and long term statistical plans and policies and implementing them so as to ensure the availability of relevant, reliable and high quality data,

II) To bring about co-ordination among all the governmental and non-governmental organizations that conduct economic and social data collection, processing, analysis and publication activities and

III) To develop a standardized statistical system.

There are two major sources of agricultural statistics in the country. The collection and dissemination of official data for current agricultural statistics in Nepal has been one of the major responsibilities of the CBS since 1993. The Ministry of Agriculture and Cooperatives (MOAC) and the Central Bureau of Statistics (CBS) are both involved in collecting current agricultural statistics such as area of crops and production (temporary and permanent), livestock inventory and livestock products and fisheries production. CBS collects these statistics through the Crops and Livestock Survey (CLS) while the MOAC data are based on the field reports of the extension workers and is mainly used for forecasts and early warning purposes. CBS is also responsible for the conduction of the decennial agricultural census. The sole source of forestry and environment statistics is the Ministry of Forest and Soil Conservation and its departments and other offices.

The National Statistical Council (NSC), which is the apex statistical coordinating body, was reconstituted for the last time on December 3, 1995. Its present composition is as follows:

Vice Chairman, National Planning Commission (NPC)	Chairman
Member, National Planning Commission	Member
Governor, Nepal Rastra Bank (Central Bank)	Member
Secretary, NPC Secretariat	Member
Secretary, Ministry of Finance	Member
Secretary, Ministry of Industry	Member

Secretary, Ministry of Commerce	Member
Secretary, Ministry of Education	Member
Secretary, Ministry of Health	Member
Secretary, Ministry of Agriculture	Member
Chairman, Central Statistics Department, Tribhuvan University	Member
Executive Director, Center for Economic Development and Administration (CEDA)	Member
Director General, Central Bureau of Statistics (CBS)	Secretary

In order to resolve problems or facilitate NSC's activities, NSC can invite experts or statisticians from other government agencies and non-government organizations to participate in meetings of the Council or its sub-committees and provide technical advice to NSC's activities.

The legal provision of the census and survey is one of the important aspects for empowering data collection operation. The Statistics Act 2015 is very explicit in the provision of confidentiality to encourage participation in surveys by individuals, firms and others. In accordance with the Statistics Act 2015, the Government may also by 'notified order' (order published in the Gazette) issue directions for the collection of statistics of any matter.

1.2 Structure and organization of the major agricultural statistics agencies

Information of national contacts

Central Bureau of Statistics

Designation	:	Deputy Director General
E-mail	:	uttmmalla@cbs.gov.np
Fax	:	977-1- 4227720
Telephone	:	977-1- 4241801
Website/URL of institution	:	**www.cbs.gov.np**

Ministry of Agriculture and Cooperatives

Designation	:	Joint Secretary
E-mail	:	agribusiness@moac.gov.np
Fax	:	977-1-14225825
Telephone	:	977-1-14228137
Website/URL of institution	:	**www.moac.gov.np / www.aicc.gov.np**

Department of Forest Research and Survey

Designation	:	Director General
E-mail	:	foresc@wlink.com.np
Fax	:	977-1- 4220159
Telephone	:	977-1- 4220282
Website/URL of institution	:	**www.dfrs.gov.np**

Nepal Rastra Bank (Central Bank)

Designation	:	Deputy Director
E-mail	:	gplbhalta@nrb.org.np
Fax	:	977-1- 4410158
Telephone	:	977-1- 4411782
Website/URL of institution	:	**www.nrb.org.np**

Department of Customs

Designation	:	Director General
E-mail	:	npdoc@ntc.net.np
Fax	:	977-1- 4259808
Telephone	:	977-1- 4259791
Website/URL of institution	:	**www.customs.gov.np**

Central Bureau of Statistics (CBS)

Although CBS has the responsibility of all statistics sectors, agriculture being the mainstay of the country's economy, the need for accurate, relevant and timely agricultural data is even more important. Apart from conducting the decennial National Sample Census of Agriculture (NSCA), collection and dissemination of official data for current agricultural statistics is also a major responsibility of the CBS. Prior to 1993 the responsibility of current agricultural statistics was with the Ministry of Agriculture and Cooperative (MOAC). The Agriculture Statistics Section of CBS carries out Crop and Livestock (CLS) sample survey to collect current agricultural statistics.

Organizational Structure

The present set up of the Central Bureau of Statistics is as follows:

The Director General heads the Bureau. The activities of the Bureau are divided into three streams: Social Statistics Division, Economic Statistics Division and Planning and Human Resources

Management Division, each of which is led by a Deputy Director General. The subject matter sections - Agricultural Statistics Section, National Account Section, Establishment Census and Survey Section, Price Statistics Section, Business Statistics Section and Environment Statistics and Satellite Account Sections come under the Economic Statistics Division; the Population Section, Household Survey Section, Social Statistics Section, Data processing and GIS Section come under the Social Statistics Division and Planning Co-ordination and Standardization Section, where as Human Resources and Development and Training Section, Publication, Distribution and Library Section, Administration Section and Financial Administration Section come under the Planning and Human Resources Management Division.

At present there are about 170 staff members at the central office (CBS) at Kathmandu. The 33 district level statistical offices (BSO) which look after all the 75 districts of the country have a total of about 500 staffs. The existing organization structure of the Central Bureau of statistics is given in Annex 2.

Ministry of Agriculture and Cooperatives (MOAC)

The MOAC has an Agri-business Promotion and Statistics Division (ABPSD) that regularly publishes comprehensive statistical information on agriculture as well as related variables in its publication "Statistical Information on Nepalese Agriculture." The data published are advanced estimation of district level statistics on cereal crops, cash crops, pulses, livestock, poultry, fishery and horticulture. Theses data are based on the field reports of the extension workers. The estimate of area under crop (planted, harvested area) is prepared by extension workers, the Junior Technicians (JT) and Junior Technical Assistants (JTA) for the Village Development Committees (VDC) they are assigned to, and is based on interviews with farmer groups. The JTs and JTAs make estimates of changes of area under crop by various natural disasters such as drought, flood and landslides as compared to the previous year. These estimates are used to adjust estimates of the area under crop.

Aside from the estimates of cereal crop production, there are estimates of horticulture crops, vegetable crops, and fish production. The Horticulture Development Directorate has been conducting special surveys on selected fruits like apple and orange on an ad hoc basis. On the other hand, the Vegetables Development Directorate of the Department of Agriculture is in charge in the compilation of reports on area, production and yield of selected vegetables. For fisheries, the data on number of ponds, area, total water surface area and fish production are collected, compiled and disseminated by the Fishery Development Directorate of the Department of Agriculture.

Estimates of livestock population and livestock products production are also being done by the District Livestock Service Offices (DLSO) from the compilation prepared by the JTs and JTAs based on their judgment in their corresponding service centers and sub-centers. After checking for consistency, the DLSO sends the district level estimates to the ABPSD and MOAC, who in turn make some validation by using other ancillary information and then present them to the Technical Committee for approval before it is disseminated.

Organizational Structure

The Ministry of Agriculture and Cooperatives (MOAC) has 75 district offices with 300 centers and sub-centers functioning under the Department of Agriculture and 576 centers and sub-centers under the Department of Livestock Services. These service centers and sub-centers are manned by Junior Technical Assistants (JTAs) and Technical Assistants (TAs) and weekly send information on forecast of cereals, cash crops, horticultural crops, livestock and fishery to the District Agricultural Development Office (DADO). The DADOs process the data in the districts and send them to the divisions concerned. These then back to the departments and finally to the MOAC. The number of JT and JTAs working with the Department of Agriculture are 931 and 1099 and with Department of Livestock, 582 and 1133 respectively.

Ministry of Forest and Soil Conservation

The forestry and soil conservation data are collected on a regular basis from district and regional forestry offices by the respective departments, through various reports, records, progress/ monitoring reports, legal cases, survey reports, maps, operational management plans, hand over certificates and operational plans, extraction/procurement and sale reports, inventory reports, sub-watershed management plans, data measurements, census reports of rhino and tiger, aerial photos and satellite imageries and research results. The frequency of data collection is on monthly, trimester, and annual basis. The geographic disaggregation is district, regional, national and ecological belt. The methodology adopted on several cases is through observation, total counting and measurements.

Human resources

Organization	Center		Region	
	Officer	Assistant	Officer	Assistant
Central Bureau of Statistics	5	3	33	361
Ministry of Agriculture and Cooperatives*	4	10	150	876
Department of Forest Research and Survey	17	15		
Nepal Rastra Bank, Research Department	12		14	
Department of Customs	3	7	21	53

Budget

This is the program budget and does not include items such as salary and other administrative expenses. The budget during the census year will be much higher.

**The Regional staff includes all extension workers of the Dept of Agriculture and Dept of Livestock*

Organization	Fiscal Year	Budget in NRs
Central Bureau of Statistics	2006/07	4,000,000
Ministry of Agriculture and Cooperatives	2006/07	10,000,000
Department of Forest Research and Survey	2006/07	595,000
Nepal Rastra Bank, Research Department	2006/07	200,000
Department of Customs	2006/07	

1.3 Outputs and dissemination of agricultural statistics

Contact information of the focal point of dissemination of the responsible agencies.

Organization	Contact point	Telephone	Fax	e-mail
Central Bureau of Statistics	Ambika Bashyal	977-1-4245848	977-1-4227720	abashyal@cbs.gov.np
Ministry of Agriculture and Cooperatives	Hem Raj Regmi	977-1-4228137	977-1-4225825	agribusiness@moac.gov.np
Department of Forest Research and Survey	Chintamani Kandel	977-1-4220482	977-1-4220159	foresc@wlink.com.np
Nepal Rastra Bank, Research Department	Dila Ram Subedi	977-1-4410158	977-1-4411782	dilaram@nrb.org.np
Department of Customs	Hikmat Bhandari	977-1-4259791	977-1-4259808	hikmat_bhandari@hotmail.com

List of titles of major publications / statistical reports and other published related information

The census results are disseminated in various ways. Aside from the publications being distributed to different major users of the census, both in government and private sectors, some specific topics on the census results may be published in the regular publications of the CBS to enhance wider usage of census data.

During the initial release of the results, major users of the census data are invited and the highlights of the census presented.

The publications of the 2001/02 National Sample Census of Agriculture was made available to the users through the CBS library which is open to the public. Furthermore, with special arrangement, researchers may be able to obtain summary data not only through electronic media like CDs and floppy diskettes but also from CBS's URL: www. cbs.gov.np .

Dissemination programs of important survey results and reports of censuses and large surveys are attended by concerned ministers and high level officials. There is no provision of giving in advance the notice of change in survey methodology to users. However, the members of the technical committees and steering committees are informed about the changes.

List of major publications / statistical reports and other published related information by the major agricultural statistical agencies are given below.

Title of Publications	Domain/ Contents	Medium/ Language	Format	Periodicity / Frequency	Latest Publication	Release Calendar	Pricing Policy
Central Bureau of Statistics							
National Sample Census Agriculture, Nepal - HIGHLIGHTS	Census Highlights	English	Book	Decennial	2001/02	After 1 year of field operation	50% free distribution and 50% on sale
National Sample Census Agriculture, Nepal - National Level, District Level, Ecological Belt Level and Development Region Level	Resources/ Input, Agricultural credit and Others	English	Book	Decennial	2001/02	After 1 year of field operation	50% free distribution and 50% on sale
Monograph, National Sample Census of Agriculture	Analytical report	English	Monograph	Decennial	2005/06	After 2 year of field operation	50% free distribution and 50% on sale
National Accounts of Nepal	Macroeconomic indicators	English	Book	Annual	2005/06	December	Free
Nepal Living Standard Survey 2003/04 Vol I & II	Rural income and nominal and real wage rates by sectors	English	Book	Every five years	2003/04	October	50% free distribution and 50% on sale
Nepal Labour Force Survey	Rural and total employment	English	Book	Every five years	1998/99	After 1 year of field operation	50% free distribution and 50% on sale
Population Census, National Report* (CBS)	Population	English	Book	Decennial	2003	After 1 year of field operation	50% free distribution and 50% on sale
Population Projection of Nepal	Population	English	Book	Decennial	2004	After 5 year of field operation	50% free distribution and 50% on sale
Population Monograph of Nepal, Volume I & II	Analytical report	English	Monograph	Decennial	2003	After 2 year of field operation	50% free distribution and 50% on sale
Census of Manufacturing Establishments	Indicator of Manufacturing Establishments	English	Book	Every five year	2001/02	Within Census year	50% free distribution and 50% on sale
Nepal in Figures	Major indicators	English	Leaflet	Annual	2005	October	Free
Statistical Year Book Nepal	General Statistics	English	Book	Alternate Years	2006	October	50% free distribution and 50% on sale
Statistical Pocket Book Nepal	General Statistics	English	Booklet	Alternate Years	2005	October	50% free distribution and 50% on sale
Nepal Info 2006 (CBS)	General Statistics	English	CD	Annual	2006	July	Free

Title of Publications	Domain/ Contents	Medium/ Language	Format	Periodicity / Frequency	Latest Publication	Release Calendar	Pricing Policy
Ministry of Agriculture and Cooperatives							
Statistical information on Nepalese agriculture	Area, Production, Livestock and Food consumption	English	Book	Annual	2005/06	December	Free distribution/ Sale
Bimonthly Bulletion	Production	Nepali	Booklet	Bimonthly	March-Apral 2006		Free distribution
Department of Forest Research and Survey							
Banko Janakari	Resources	English	Journal	Half Yearly	2006	Nov/May	Free distribution
Nepal Rastra Bank (Central Bank)							
Current Macro Economic Situation	Price	English	Journal	Monthly	Aug. 2006	Oct. 2006	Free distribution
Department of Customs							
Foreign Trade Statistics	Trade	English	Journal	Annual	2002/03	November	Free distribution
Annual Commoditiwise Description Report	Trade	English	Report	Annual	2004/05	October	Official use
Major 100 items Import and Export	Trade	English	Booklet	Monthly	Sept. 2006		Official use and Free distribution
A compilation of comparative value of major items imported from overseas countries	Trade	English	Booklet	Monthly	Sept. 2006	Monthly	Free distribution

** In total there are about 26 different 2001 Population Census publications*

- There is no ministerial commentary or similar announcement on the occasion of the release of the data.
- Notice of changes in methodology is given to the users, stakeholders and related agencies during the inception seminar and during technical and steering committee meetings.

1.4 Dialogue with data users and co-operation with international organizations

Dialogue with users, stakeholders and donors are held from time to time, especially when a program is to be initiated. If required, a technical committee is also formed which will meet as and when needed. The other forum where concerned agencies hold dialogue is during the National Statistical Council meetings.

1.5 Strategic Framework

At present the country's statistical system suffers from redundant responsibilities and release of conflicting statistics by different agencies. Duplication of efforts seems to persist because of the lack of information of because of what data are available in other offices or simply lack of coordination in the planning of statistical activities within the statistical system. To overcome such deficiencies, the Central Bureau of Statistics submitted a Consolidated National Statistical Plan (CNSP) to the Government in 2000. The plan was approved only after four years of submission and, more over, with drastic modification.

The CNSP, which has identified the critical statistics required by the Government and the agencies responsible for them, could resolve most of the pressing issues had it been approved in the form it was submitted. It's implementation would improve the prevalent lack of coordination among agencies involved in the compilation of national accounts.

The CNSP includes a chapter on agriculture statistics which clearly delineates the functions of the two major agencies involved in this area, MOAC and CBS. According to this plan CBS is responsible for collecting, estimating and publishing current agricultural statistics on area and production of agricultural commodities, livestock population and its products through the conduct of sample survey (Crop and Livestock Survey). The MOAC shall be responsible for early warning and crop forecasting agricultural commodities production situation and generate agricultural statistics which CBS does not produce, such as price and cost of production, etc. The forecast report produced by the MOAC shall serve as complementary information in the finalization of the annual agricultural statistics by the CBS.

Designated Statistics

The most critical and essential statistics required for social and economic planning, monitoring and evaluating the targets set in the five yearly plans and for the estimation of national accounts have also been identified in the CNSP. The government agencies that has the most suitable infrastructure for generating each of these statistics are designated. The system of designated statistics was developed with the following guiding principles:

- Duplication of functions and conflicting statistics among data producing agencies must be eliminated. The activities of data producing government agencies must be well coordinated to avoid duplications and to minimize data gaps.
- There must be an efficient and effective allocation of responsibilities in the production of data and indicators among agencies.
- There must be an improvement in the timeliness of release of designated statistics.

In addition to the designation of government agencies, the instrument for data collection or the mechanism by which the indicator(s) can be derived, the desired frequency of data production and the disaggregation level for dissemination purposes are also designated for each type of statistics.

It is envisioned that this system of designated statistics will be dynamic to respond to the changing data needs of the Government. The National Statistical Council will periodically review the status of the system and will make adjustments in the designation whenever necessary.

A well-defined work plan to cover CBS's programs, designation of responsibilities, individual and collective responsibilities of each of the agencies with regard to the collection and dissemination of agricultural data are clearly stated in the CNSP. The prime concern of CBS at present is to get the CNSP approved in the form it was initially submitted or with slight modification which will not hamper the spirit of the plan. A request to this effect has already been submitted to the Government.

Need for international co-operation and technical assistance

The technical assistances thus far received by the Government from agencies like FAO and ADB has certainly enhanced the capacity of CBS to undertake agricultural censuses and survey activities. Assistances will be required for development work on new and important areas of agricultural statistics such as emerging new important crops, horticulture crops, farm economy, etc. The technical know-how to collect statistics in these areas is almost non-existent.

Data processing is another area where CBS is lagging behind. In view of the rapid change in computer technology, it is important for CBS to decentralize its data processing capability to the BSO level.

Chapter 2

Major Domains and Selected Indicators of Agricultural Statistics

The focus of this chapter is on the major domains of agricultural statistics, such as production, trade, consumption, prices, fertilizer, land use, labor and employment as listed in the following. If relevant, after completing the major domains, one may also explore other domains, for example, of aquaculture, forestry, irrigation, and land degradation, among others.

2.1 List of major domains and selected indicators

The list of major domain and selected Statistics/Indicators used in Nepal is given below.

Domain	Statistics/Indicators
Production	
Crops	Volume of crop production Harvested area Yield per hectare
Livestock and Poultry	Livestock and poultry population Volume of livestock and poultry production
Fishery	Volume of fishery production
Macroeconomic indicators	Gross Value Added in Agriculture sector (GVA) Agriculture Production Index (API) Productivity
Trade	Volume of export and import of agriculture commodity Value of export and import of agriculture commodity
Price/Inflation	Average monthly prices of selected agricultural products Consumer price index by commodity group (CPI) Wholesale Price Index by commodity group (WPI)
Food Consumption	Food Balance Sheet
Resources/Input	
Land Use	Agricultural land Land under temporary crop Land under permanent crop Land under permanent meadows and pastures Wood land and forest All other land

agricultural

agricultural

Domain	Statistics/Indicators
Resources/Input	
Irrigation	No. of holdings reporting and area irrigated
Fertilizer	Volume of fertilizer import Value of fertilizer import Value of sales Area treated with chemical fertilizer and quantity used
Pesticides, Insecticides and Herbicides	No. of holdings using for major crops
Agricultural Machinery	Use and number of agricultural machineries
Labor and employment	Rural population Active population in agriculture Labor force in agriculture Total employment Nominal and real wage rates by sectors Agricultural workers
Rural Services	Rural employment Rural income Agricultural credit
Others	Demography of holder

2.2 Metadata for each of the major domains

2.2.1 Production

2.2.1.1 Concepts, Definitions and Classifications

The Central Bureau of Statistics in its agricultural censuses and surveys has been following FAO guidelines and UN definitions. Census concepts, questionnaires and procedures were developed in accordance with FAO guidelines as set out in the document FAO Statistical Development Series No. 2 – Programmed for the 1990 World National Sample Census of Agriculture (FAO 1986) and its companion volume FAO Statistical Development Series No. 2nd – Supplement for Asia and the Pacific, Programme for the 2000 World National Sample Census of Agriculture (FAO, 2000). The guidelines provide detailed recommendations to countries on topics to be covered, statistical concepts and definition, classifications and output.

Volume of crop production

Volume of crop production is expressed in metric tons and average per hectare production is expressed in kilogram.

Harvested area

Harvested area is area from which actual harvests are realized and it excludes crop area totally damaged by any reason. Harvested area is always less than or equal to plantation area.

Yield

Yield is the indicator of productivity of crop which is derived by dividing total production of crop by the area of that crop harvested and it is expressed in kilograms per hectare.

Livestock and Poultry Population

Livestock data refer to numbers of animals kept by the holding on the day of enumeration. This includes livestock owned by the holding and livestock being leased in by the holding. The livestock counts include livestock present on the holding on the day of enumeration as well as livestock, which are temporarily absent from the holding (e.g. being grazed off the holding).

Gross Value Added in Agriculture Sector

Gross Value Added is the value of output less the value of intermediate consumption originating from the agriculture sector. It is a measure of the agriculture sector contribution to total GDP.

Gross Value Added

Gross Value Added is the value of output less the value of intermediate consumption. It is a measure of the contribution to GDP made by an individual producer, industry or sector.

Output

Output consists of those goods or services that are produced within an establishment that become available for use outside that establishment, plus any goods and services produced for own final use.

Intermediate Consumption

Intermediate consumption is the goods and services consumed as inputs by a process of production, excluding fixed assets.

Agriculture Production Index

Agriculture production index shows on average how the production of agricultural commodity changes over time, by comparing data expressed relative to a given base value (100).

Productivity

Productivity is defined as a ratio of a volume measure of output to a volume measure of input use.

Matrix Representation of Productivity Measures

Type of Input Measure		Type of Output Measure	
		Gross Output	Value Added
Labour	Single Factor Productivity	Labour Productivity: *Ratio of Quantity index of gross output to Quantity index of Labour Input*	Labour Productivity: *Ratio of Quantity index of value added toQuantity index of Labour Input*
Capital		Capital Productivity: *Ratio of Quantity index of gross output to Quantity index of capital input*	Capital Productivity: *Ratio of Quantity index of value added to Quantity index of capital input*
Capital and Labour	Multifactor Productivity	Capital Labour Productivity: *Ratio of Quantity index of gross output to Quantity index of combined labour and capital input*	Capital Labour Productivity: *Ratio of Quantity index of value added to Quantity index of combined labour and capital input*
Capital, Labour and Intermediate Inputs (energy, materials, services)		KLEMS Productivity: *Ratio of Quantity index of gross output to Quantity index of combined inputs*	
Note: *Quantity index of combined inputs – Quantity index of labour, capital, energy, services etc. each weighted with its current price share in total gross output.*			

2.2.1.2 Coverage, Availability, Data Sources and Responsible Agencies

Statistics/ Indicators	Coverage	Availability	Data Source	Responsible Agencies
Crops				
Volume of crop production	National/District	1950 onward	Crop and Livestock Survey Interview with farmers and field report	CBS MOAC
Harvested area	National/District	1950 onward	Crop and Livestock Survey Interview with farmers and field report	CBS MOAC
Yield per hectare	National/District	1950 onward	Crop and Livestock Survey/Crop cutting Interview with farmers and Crop cutting	CBS MOAC
Livestock and Poultry				
Livestock and Poultry population	National/District	1985 onward	National Sample Census of Agriculture/CLS Reporting System	CBS MOAC
Volume of Livestock and poultry production	National/District	1985 onward	Crop and Livestock Survey Reporting System	CBS MOAC
Fishery				
Volume of fishery production	National/District	1991 onward	Sample Survey Field report	CBS MOAC

Statistics/ Indicators	Coverage	Availability	Data Source	Responsible Agencies
Macroeconomic Indicators				
Gross value added in agriculture sector	National only	1974/75 onward	National Account Estimate	CBS
Agriculture production index	National only	1974/75 onward	National Account Estimate	CBS
Productivity	National only	1974/75 onward	National Account Estimate and Productivity Analysis	CBS NPEDC

2.2.1.3 Data Processing, Estimation and Revision Methodology

Data Processing

CBS is planning to progressively decentralize the data processing system by building the capacity to process data at the BSO level. Computers have been provided to BSOs and sufficient training has been imparted to the district staff to enable them to do the data entry of the CLS questionnaires and generate basic summary tables. Decentralization of data processing would certainly expedite as well as relieve the central office from doing the massive data processing work. Data processing system for the Crop and Livestock Survey has been developed using the Integrated Microcomputer Processing System (IMPS). Recently CSPro has been introduced at the BSO for the data entry job.

Data processing involves coding, editing and imputation. After the field work, the Supervisor edits the questionnaires for consistency, appropriateness and completeness of entries in the questionnaire. Questionnaires are designed for automatic data processing and are easy to edit.

Normally, unweighted marginals are generated as an initial step to the evaluation of the survey data. If extreme values are noted, minimum and maximum data limits are used to flush them out or to automatically impute them. After the data files are cleaned, a final table is generated for analysis.

Estimation

Appropriate formule will be used to generate BSOC and national level estimates (mean, totals, proportions and ration). Measures of reliability like standard errors and coefficient of variation will also be computed.

Parameters To Be Estimated

All parameters are first estimated at the BSOC level. Using small-area estimation techniques, the BSOC estimates are disaggregated by the district. It becomes a routine procedure to aggregate estimates for relevant districts to obtain estimates for development regions, ecological belts and the national level.

BSOC Mean

$$\overline{X} = \frac{\sum_{s=1}^{Mk} X_{ks}}{M_k}$$

Where ; X_{ks} = value of characteristic X for S^{th} holding in the k^{th} BSOC

M_k = Total number of holdings in the k^{th} BSOC

BSOC Total

$$X_k = M_k \ \overline{X_k}$$

BSOC Ratio

$$R_k = X_k / Y_k$$

District Mean

$$\overline{X_{kj}} = \frac{\sum_{l=1}^{M_{kj}} X_{kjl}}{M_{kj}}$$

Where ;

X_{kjl} = value of characteristics X for the l^{th} holding in the j^{th} district in the k^{th} BSOC.

District Total

$$X_{kj} = \sum_{l=1}^{M_{kj}} X_{kjl}$$

District Ratio

$$R_{kj} = X_{kj} / Y_{kj}$$

Sub-national Mean

$$\overline{X_g} = \frac{X_g}{\sum_j M_{kj}}$$

Sub-national Total

$X_g = \sum$ (Total of districts in Group G)

Sub-national Ratio

$$R_g = \frac{X_g}{Y_g}$$

National Mean

$$\overline{X_n} = \frac{\sum_{k=1}^{33} X_k}{\sum_{k=1}^{33} M_k}$$

National Total

$$X_n = \sum_{k=1}^{33} X_k$$

National Ratio

$$R_n = \frac{X_n}{Y_n}$$

Estimation Procedures

BSOC Level Estimation

Estimate of BSOC Mean,

Est. $\overline{X_k}$

For a given value of characteristics X, the BSOC mean is estimated by the mean of the replicate means. That is,

$$\text{Est}\,\overline{X_k} = \frac{\sum_{r=1}^{3} \overline{X_{kr}}}{3} \qquad \text{(Eq. 1)}$$

$$= (X_{k1} + X_{k2} + X_{k3})/3 \qquad \text{(Eq. 2)}$$

Where ;

k = 1,2, …..33 (No. of BSOC)

r = 1,2,3 (No. of replicates)

The mean of a replicate $\overline{X_{kr}}$ is estimated as fallows;

Where;

$$\text{Est. } \overline{X_{kr}} = \frac{\sum_{i=1}^{n}\sum_{j=1}^{mki} X_{krij}}{n_{kr} * 15} \qquad \text{(Eq. 3)}$$

i = 1, 2, ..n_{kr} (9 or 6 sample enumeration area per replicate in the k^{th} BSOC)

j = 1, 2, 3, …..m_{ki} (number of sample holdings in the EA in k^{th} BSOC)

$n_{kr} = \sum i$ (Total number of sample EAs in r^{th} replicate in k^{th} BSOC)

Estimate of BSOC Total, X_k

$$\text{Est } (X_k) = \text{Est } (M_k).\ \text{Est } \left(\overline{X_k}\right) \qquad \text{(Eq. 4)}$$

Let;

$$\text{Est } (M_k) = \hat{M}_k$$

$$\hat{M}_k = M'_k \frac{\sum_{r=1}^{3}\sum_{i=1}^{n} N_{kri}}{\sum_{r=1}^{3}\sum_{i=1}^{n} N'_{kri}} \qquad \text{(Eq. 5)}$$

Where;

$\hat{M}_k$ = Estimates number of holding in the k^{th} BSOC

M'_k = Total number of holdings from Agriculture Census in the k^{th} BSOC

N_{kri} = No. of holdings in the listed EA overall replicates in the k^{th} BSOC

N'_{kri} = No. of holdings from the census in the same sample EAs over all replicates in the k^{th} BSOC

To Estimate BSOC Total Area of Holdings;

$$\text{Est } (X_k) = (\quad).\ \text{Est } \left(\overline{X_k}\right)$$

Let, Est $\left(\overline{X_k}\right) = (\ \overline{\hat{x}}\ )$

$$\text{Est}(X_k) = \hat{X}_k$$

Therefore, by changing the symbols above for the mean and estimates total, we have the revised formula as fallows;

$$\hat{X}_k = \left(\hat{M}\right) \text{ x } \left(\overline{\hat{X}}\right) \qquad \text{(Eq. 6a)}$$

Ratio Estimate

The ratio between the values of characteristics X and Y is estimated by

$$\text{Est}(R_k) = \frac{\hat{X}_k}{\hat{Y}_k} \qquad \text{or,} \qquad \text{(Eq. 7)}$$

$$\hat{R}_k = \frac{\hat{X}_k}{\hat{Y}_k}$$

If we have a total estimate of area and production, we can compute the yield, which is the ratio of the two variables, X being that of production and Y for the area; then we get production per unit area.

District Level Estimation

No specific technique for synthetic estimation has been identified for splitting the BSOC estimates into district level estimates. The first-stage sampling, however, has ensured that some indications of district level contributions to total BSOC values are obtained from the sample. This was achieved by implicit stratification of EA's by district. For means and totals, an initial disaggregation technique would be to assign to a district an estimate proportion to its contribution in the sample. Estimates of ratios are then obtained correspondingly.

Let then;

$\hat{X}_k$ = estimate total for k^{th} BSOC

X_{kd} = total for d^{th} district in k^{th} BSOC

$= W_{kd}.X_k$ where W_{kd} = proportion of District total to BSOC total

Estimation of district level total involves estimating W_{kd} and X_k.

Using Est (W_{kd}) = proportion of District sample total to BSOC sample total,

$$\text{Est}(X_{kd}) = \text{Est}(W_{kd}).\hat{M}_k\,\overline{\hat{X}_k} \qquad \text{(Eq. 8)}$$

No unbiased estimate of standard error is available at district level.

Sub-national Level Estimation

The average value (Mean) of characteristic X

$$\text{Est}\left(\overline{X_g}\right) = \frac{Est\left(X_g\right)}{M'_g} \qquad \text{(Eq. 9)}$$

Where $M'_g = \sum M'_{kd}$

The estimate of the total

$Est\left(X_g\right) = \sum$ (Totals of districts (d) in Group g) (Eq. 10)

The estimate of the ratio

$$Est\left(R_g\right) = \frac{Est\left(X_g\right)}{Est\left(Y_g\right)} \qquad \text{(Eq. 11)}$$

National Level Estimation

The average value of X at the national level

$$Est\left(\overline{X_n}\right) = \frac{\sum_{k=1}^{33} Est\left(X_k\right)}{\sum_{k=1}^{33} \hat{M}_k} \qquad \textbf{(Eq. 12)}$$

The estimate of the national total

$$Est\left(X_n\right) = \sum_{k=1}^{33} Est\left(X_k\right) \qquad \text{(Eq. 13)}$$

The estimate of a ratio

$$Est\left(R_n\right) = \frac{Est\left(X_n\right)}{Est\left(Y_n\right)} \qquad \text{(Eq. 14)}$$

Estimation of Sample Variance of the Mean

Sample Variance for each replicate in BSOC

$\overline{X_{kr}} = Est\left(\overline{X_{kr}}\right)$ = estimate of replicate mean, r =1,2,3

$s_{kr}^2 = Est\left(\sigma_{kr}^2\right) =$ estimate of replicate mean, r =1,2,3

$$= \frac{\sum_{1}^{n_{kr}} \left(X_{krij} - \overline{X_{kr}}\right)^2}{n_{kr} - 1} \qquad \text{(Eq. 15)}$$

Sample variance of BSOC

$$s_{kr}^2 = \frac{[n_{k1} - 1]s_{k1}^2 + [n_{k2} - 1]s_{k2}^2 + [n_{k3} - 1]s_{k3}^2}{n_k - 3} \qquad \text{(Eq. 16)}$$

where ; $n_k = n_{k1} + n_{k2} + n_{k3}$

The variance and standard error of the BSOC mean

Variance of the BSOC Mean;

$$Var\left(\hat{X}_k\right) = \frac{s_k^2}{n_{k1} + n_{k2} + n_{k3}} \qquad \text{(Eq. 17)}$$

Standard Error of the BSOC Mean;

$$\text{se}\left(\overline{X}\right) = \sqrt{\frac{s_k^2}{n_k}} \qquad \text{(Eq. 18)}$$

Estimation of Coefficients of Variance

BSOC level

$$Est\left(CV_k\right) = \frac{Est\left(s.e._k\right)}{Est\left(\overline{X_k}\right)} \qquad \text{(Eq. 19)}$$

National level

$$Est\left(CV_n\right) = \frac{Est\left(s.e_n\right)}{Est\left(\overline{X_n}\right)} \qquad \text{(Eq. 20)}$$

Revision Methodology

The estimate can be subjected to revision through surveys estimates and field reports of the staffs. Survey such as CLS is conducted twice a year. Milk productions which vary seasonally are adjusted as per the results of the CLS. Episodic events contributing or hampering crop productions are adjusted through field reporting of the extension workers.

2.2.1.4 Other Reference Information

The Manual of Operation (which discusses the objectives, scope and coverage of the survey as well as the sampling methodology and estimation procedure), Enumerator's Manual (which discusses the concepts, definitions and the instruction in the filling up the questionnaire), Supervisor's Manual and Manual on the Data Processing and Estimation Procedures Adopted for the Crop and Livestock Survey are the other reference information.

The data from the Population Census and National Sample Census of Agriculture are used as frame as well as inputs in the analysis of survey results.

2.2.2 Trade

2.2.2.1 Concepts, Definitions and Classifications

Volume of export and import of agriculture commodities

Volume of agriculture export and import refers to the quantity of agricultural goods export/import expressed in kilograms.

Value of export and import of agriculture commodities

Value of agriculture export refers Free on Board (F.O.B.) and Cost Insurance Freight (C.I.F.) values for imports and Free on Board (F.O.B.) value for export.

2.2.2.2 Coverage, Availability, Data Sources and Responsible Agencies

Statistics/Indicators	Coverage	Availability	Data source	Responsible Agencies
Volume of export and import of agricultural commodities	International	2000 onwards	Official records of Foreign Trade Statistics	Department of Customs
Value of export and import of agricultural commodities	International	2000 onwards	Official records of Foreign Trade Statistics	Department of Customs

2.2.2.3 Data Processing, Estimation and Revision Methodology

The Department of Customs (DOC) regularly publishes statistical information on agriculture export and import. These data are based on administrative records of DOC and the data covers the whole of export and import items, including all agricultural products.

2.2.2.4 Other Reference Information

The administrative records compiled by other agencies related to agriculture export and import are the other reference information, such as the administrative records of Nepal Rastra Bank.

2.2.3 Price

2.2.3.1 Concepts, Definitions and Classifications

Consumer Price Index (CPI)

The CPI is an index that measures the rate at which the prices of consumption goods and services are changing from month to month / quarter to quarter/year to year.

Wholesale Price Index (WPI)

A measure that reflects changes in the prices paid for goods at various stages of distribution up to the point of retail is called wholesale price index.

2.2.3.2 Coverage, Availability, Data Sources and Responsible Agencies

Statistics/Indicators	Coverage	Availability	Data source	Responsible Agencies
Average monthly prices of selected agricultural products	National/ District	1991	Official report	Department of Agriculture
Consumer price index by commodity group	Urban/ Eco. Belt	Monthly	Household Budget Survey for weight and monthly price collection	Nepal Rastra Bank
Wholesale Price Index by commodity group	Urban/ Eco. Belt	Monthly	National account estimate and price collection from major market center	Nepal Rastra Bank

2.2.3.3 Data Processing, Estimation and Revision Methodology

Data Processing of Household Budget Survey

Detailed instructions were prepared for editing and coding of completed questionnaires. Group items were pre-coded in the questionnaire itself while item coding were done manually at the central office. For the purpose of coding the occupation (3 digits) and industries (2 digits), the International Standard Classification System was followed with some modification to fit the local condition. The identification of groups and sub-groups of expenditures, income, savings and liabilities were based on the following three digits coding system:

Food and beverages 010 -021, Meals away from home 022,Tobacco and related products 023, Other goods and services 031 -093, Current money income 101 -122, Others receipts 329 and 340, Income in kind 131 -142, Increase in liabilities 211 -219, Decrease in liabilities

221-229, Increase in savings/investment 311 -319, Decrease in savings/investment 321 -328, Credit purchase 350, Credit payment 260, Ownership of durable goods 601 -639, Rental value of owner occupied dwellings 124

Within the sub-groups, detailed expenditure items were coded in two digits numerical sequence starting with 01.

In each of the survey centres, questionnaires were numbered serially with municipality code. After editing and coding, all the questionnaires were verified and sent for data entry operations. All the computer work including programming and data entry operations were done under the guidance and supervision of the computer manager of the Bank. Computer programmes were prepared in dbase IV language for data entry and tabulation. A cross checking system and data editing programme was developed to check discrepancies in coding. All computer data were listed and completely verified. After checking and correcting, data were backed up in the diskette.

Data Tabulation and Presentation

Data tabulation pattern of the present survey was made consistent with the previous survey. Tables on income, expenditure, debts and savings have also been added on the basis of household monthly income group. The data for each geographical region have been tabulated separately. The valley was treated as a separate geographical region. Households of the valley, the hills and the terai were combined together and divided into ten equal groups to form deciles at the urban national level. As such, households belonging to a particular decile at regional level may not resemble with the same decile at urban national level:

Kathmandu, Lalitpur, Pokhara, Biratnagar and Birgunj were not taken into consideration as metropolitan and sub-metropolitan areas in this study. All the urban centres were equally treated as cities. Possible efforts have been made to minimize sampling and non-sampling errors.

The data collection work started on mid-July 1995 and those five cities were declared as metropolitan and sub-metropolitan cities thereafter.

2.2.3.4 Other Reference Information

The data from the Population Census 1991are used as frame. The concept and definitions of key words as recommended by the International Labour Organisation (ILO) have been followed in the Household Budget Survey with a few adjustments wherever necessary to suit domestic conditions.

2.2.4 Food consumption

2.2.4.1 Concepts, Definitions and Classifications

Food Balance Sheet

Food balance sheet (FBS) presents a comprehensive picture of the pattern of food supply and utilization of a country during a specified period. It includes a large number of unprocessed

and processed food commodities available for human consumption, its sources of supply and areas of utilization. The total quantity of food stuffs produced in a country added to the total quantity imported and adjusted to any change in stocks that may have occurred since the beginning of the reference period gives the supply available during that period. On the food utilization side, a distinctive calculation is made of quantities exported, feed to livestock, used for seed, put to manufacture for food use and non-food uses, losses during storage and transportation and other losses and food supplies available for human consumption. The per capita supply for human of each food item available for human consumption is then obtained by then dividing the quantity of food supply of each item by the mid-year population of the respective period. Data on per capita food supplies are expressed in terms of quantity and also in terms of calorie, protein and fat contents.

The annual food balance sheet tabulated regularly over a period of years show the trends in the overall national food supply and reveals the extent to which the food supply of the country as a whole is adequate or not in relation to nutritional requirements. It covers about 65 commodities including cereals, vegetables, fruits, meat, milk, egg, fish, oils, liquors etc.

2.2.4.2 Coverage, Availability, Data Sources and Responsible Agencies

Statistics/Indicators	Coverage	Availability	Data source	Responsible Agencies
Food balance sheet	National/ District	1974/75 onward	Administrative record	Agriculture Statistics Division

2.2.4.3 Data Processing, Estimation and Revision Methodology

Data used in Food Balance Sheet are collected from secondary sources. Area and production of paddy, maize, wheat, barley, potato, pulses livestock and poultry population and production data are collected by the Agriculture Statistics Division (ASD) and published in the Statistical Information on Nepalese Agriculture. Production data on fish, vegetable and fruit are collected from the concerned Division/Department. Also, data on processed food products, stock changes, foreign trade statistics, domestic utilization ratio, nutrient values and mid year population are collected from the concerned agencies through visits.

Food Balance Sheet must account for all food commodities moving into consumption and should show the quantities of each food commodity in the Food Balance Sheet. An accurate figure of total population and appropriate extraction rates, seed rates, wastage rates and nutrient conversion factors must be used in order to ensure reliable estimates of national average food supplies and the nutrients available per head.

The availability of the total supply of a particular commodity is obtained by the following technique.

Availability of a commodity = Domestic food supply - loss - Feed requirement - Food/non food manufacturing - Seed requirement.

Domestic food supply = Output + Import ± Stock change - Export

The edible production of each cereal commodity is calculated as follows:

Edible Commodity Production = [Total raw production - Wastage - Seed requirement - Feed requirement] × Coefficient of extraction rate

Similarly, total requirement is calculated on the following basis:

Edible requirement in the high hill = 191 kg. of cereals per capita per year

Edible requirement in the hill = 201 kg. of cereals per capita per year

Edible requirement in the tarai = 181 kg. of cereals per capita per year

Edible requirement in the national level = 191 kg. of cereals per capita per year

The edible requirements are based on the total calorie requirement of the Basic Needs Plan of Nepal. The total requirements of each district is calculated by multiplying the per capita requirement to the total mid-year population of the district and shows weather the district is self-sufficient or not.

2.2.4.4 Other Reference Information

The statistical annual reports published by various agencies (Department of Industry, Food Corporation of Nepal, Salt Trading Limited, National Trading Limited, Central Food Research Laboratory etc.) and various administrative records are used as other reference information in the preparation of the Food Balance Sheet.

2.2.5 Resources/Input

2.2.5.1 Concepts, Definitions and Classifications

Statistical unit

The main statistical unit in the Agricultural Census is the agricultural holding**.**

Holding

An agricultural holding is an economic unit of agricultural production under single management comprising all livestock and poultry kept, and all land used wholly or partly for agricultural production purposes.

Small agricultural operations were excluded from the census. A holding was considered to be an agricultural unit satisfying any one of the following conditions:

- having area under crops greater than or equal to a quarter of a ropani (or four anna) or one matomuri in hill or mountain district (0.01272 hectares), or greater than or equal to eight dhur (0.01355 hectares) in the Terai; or
- keeping two or more heads of cattle or buffaloes; or
- keeping five or more heads of sheep or goats; or

- keeping 20 or more poultry; or
- keeping any combination of livestock considered equivalent to two heads of cattle or buffaloes (e.g. 1 cattle and 4 sheep).

Land use

Land use refers to the major classes of land use on the holding. For the purposes of the Agricultural Census, land operated by the holding is classified according to the land use categories given below:

(a) Agricultural land

- Crop land
  - Arable land
  - Land under permanent crops
  - Land under permanent meadows and pastures
- Ponds

(b) Woodland or forest

(c) All other land in the holding

- Unused and undeveloped potentially productive land
- Land in holding not elsewhere specified

Arable land is further subdivided into land under temporary crops, land under temporary meadows, fallow land, and other arable land. Detailed descriptions of the various land use categories are given below.

A single parcel may be divided into more than one land use category. A given field within a parcel may be used for more than one purpose (e.g. crops may be grown on forest land) – in these cases, land use was assigned on the basis of the main use. Land use refers to the use of the land during the reference year.

Arable land

Arable land refers to all land generally under cultivation and is divided into four categories:

- land under temporary crops;
- land under temporary meadows;
- land left temporarily fallow; and
- any other arable land.

Land under temporary crops

Land under temporary crops refers to land used during the reference year for crops with an under-one-year growing cycle; i.e. crops, which must be newly sown or planted for further production after the harvest. Land under temporary crops shown in Table 3 refers to the use of

the land, not to the area of temporary crops shown; land used for double cropping will be counted only once.

Land under temporary meadows

Land under temporary meadows refers to land which has been cultivated with forage crops for mowing or pasture for less than five years.

Fallow land

Fallow land refers to land which the holder chose not to cultivate during the reference year, with the intention of recultivating at a later date. Land, which had been left idle for five years or more, was included under another land use category (such as permanent meadows and pastures).

Other arable land

Other arable land includes land normally used for temporary crops, but which the holding was unable to cultivate during the reference year because of flooding, landslides or other factors.

Land under permanent crops

Land under permanent crops refers to land cultivated with long-term crops, which do not have to be replanted for several years after each harvest.

Permanent meadows and pastures

Permanent meadows and pastures refer to land which has been used for five years or more for growing forage crops.

Woodland or forest

Woodland or forest refers to woodlots or timber tracts, natural or planted, constituting part of the holding which have or will have value as wood, timber, other forest products or for protection.

All other lands

This covers two categories: "Unused and undeveloped potentially productive land: refers to land which is not being cultivated and which would require some development before it could be brought into crop production". "Land in holding not elsewhere specified: includes land occupied by buildings, roads, ornamental gardens and other open spaces on the holding".

Irrigation

Irrigation refers to purposively providing land with water, other than rain, for improving pastures or crop production. Natural flooding of land by rainfall or overflow of rivers is not considered as irrigation. Rainwater or uncontrolled flooding, which is collected and later used on the holding, is considered irrigation. Land under irrigation is shown in the tables according to source of irrigation water. The sources given are tubewell /bore, canal (continuous flow throughout the year), canal (seasonal flow only), pond/tank, and others. "Others" includes taking the irrigation

water directly from a river or stream, or a combination of other sources. Mixed source refer to combination of above source (combination of two or more source).

Fertilizers

Fertilizers refer to anything added to the soil to increase the amount of plant nutrients to promote crop growth. For census purposes, there are two types of fertilizers - local/organic and minerals/chemical.

Pesticides/insecticides

Pesticides/insecticides refer mainly to insecticides but also include fungicides, fumigants, herbicides, rodenticides and other materials.

Agricultural machinery

Use of specified items of agricultural equipment refers to the use of equipment for agricultural purpose on the holding during the reference year, regardless of whether the equipment was owned by the holding. Equipment not used for agricultural purposes is excluded. The number of items of the equipment used refers to the number on the holding on the day of enumeration. Items used are shown according to ownership – either owned solely by the holding or owned by the landowner.

2.2.5.2 Coverage, Availability, Data Sources and Responsible Agencies

Statistics/ Indicators	Coverage	Availability	Data source	Responsible Agencies
Land Use				
Agricultural land	National/District	1961/62 onwards	National Sample Census of Agriculture	CBS
Land under temporary crop	National/District	1961/62 onwards	National Sample Census of Agriculture	CBS
Land under permanent crop	National/District	1961/62 onwards	National Sample Census of Agriculture	CBS
Land under permanent meadows and pastures	National/District	1961/62 onwards	National Sample Census of Agriculture	CBS
Wood land and forest	National/District	1961/62 onwards	National Sample Census of Agriculture	CBS
All other land	National/District	1961/62 onwards	National Sample Census of Agriculture	CBS
Irrigation				
No. of holdings reporting and area irrigated	National/District	1974/75 onwards	National Sample Census of Agriculture	CBS

Statistics/ Indicators	Coverage	Availability	Data source	Responsible Agencies
Fertilizer				
Volume of fertilizer import	National only	1991 onwards	Administrative record	MOAC
Value of fertilizer import	National only	1991 onwards	Administrative record	MOAC
Value of Fertilizer sales	National only	1991 onwards	Administrative record	MOAC
Area treated with chemical fertilizer and quantity used	National/District	1991/92 onwards	National Sample Census of Agriculture	CBS
Pesticides, insecticides, herbicides				
Volume of Pesticides, insecticides, herbicides import	National only	1991 onwards	Administrative record	DAO
Value of Pesticides, insecticides, herbicides import	National only	1991 onwards	Administrative record	DAO
Value of Pesticides, insecticides, herbicides sales	National only	1991 onwards	Administrative record	DAO
No. of holdings Using for major crops	National/District	1981/82 onwards	National Sample Census of Agriculture	CBS
Agricultural machinery				
Use and number of agricultural machineries	National/District	1991/92 onwards	National Sample Census of Agriculture	CBS

2.2.5.3 Data Processing, Estimation and Revision Methodology

Processing of Census Data

Microcomputers were used in the processing of the census. In the computerization of the census several software packages were utilized: for data entry, the Integrated Micro-Processing System (IMPS); in the editing of data, CONCOR software package; in the generation of statistical tables, CLIPPER 5.01 and in the computation of variances and sampling errors, STATA statistical package was used.

Data entry was done by the CBS staff. Computer programs were prepared to edit the census returns as well as in the generation of statistical tables for review and validation. The edit programs included completeness of verification of questionnaires and consistency checks of entries within a questionnaire. The edit program provided for interactive editing. Records of holdings that did not pass the edit were verified from the source documents, which are the questionnaires. The errors were corrected and the file updated. When the data files were found to be "clean," at the district level, tables were generated for scrutiny, review and evaluation.

Estimation

All parameters are estimated at district level first, and development region, ecological belt and national estimates are obtained by aggregating across districts.

Parameters to be estimated – District level

The average value of characteristic ***X*** per holding in district ***k*** is given by ;

$$\overline{X}_k = \frac{\sum_{s=1}^{N_k} X_{ks}}{M_k} \qquad (1)$$

where :

$$X_{ks} = \sum_{j=1}^{M_{ks}} X_{ksj}$$

X_{ksj} = value of characteristic ***X*** for holding ***j*** in EA ***s*** and district ***k*** .

$$M_k = \sum_{s=1}^{N_k} M_{ks}$$

The total value of characteristic ***X*** in the district ***k*** is given by :

$$X_k = \sum_{s=1}^{N_k} X_{ks} \qquad (2)$$

The ratio of characteristics ***X*** and ***Y*** in the district ***k*** is given by :

$$R_k = \frac{X_k}{Y_k} \qquad (3)$$

Parameters to be estimated – National level

The average value of characteristic ***X*** per holding is given by ;

$$\overline{X} = \frac{\sum_{k=1}^{75} X_k}{\sum_{k=1}^{75} M_k} \qquad (4)$$

The total value of characteristic ***X*** is given by :

$$X = \sum_{k=1}^{75} X_k \qquad (5)$$

The ratio of characteristics ***X*** and ***Y*** is given by :

$$R = \frac{X}{Y} \qquad (6)$$

Estimation procedure – District level

Because the sample of holdings in a district is self – weighting, the estimate of the average value of characteristic ***X*** per holding in district ***k*** (Expression (1)) is given by :

$$\overline{X}_k = \frac{\sum_{i=1}^{n_k} \sum_{j=1}^{m_{ki}} X_{kij}}{\sum_{i=1}^{n_k} m_{ki}} \qquad (7)$$

where :

x_{kij} = value of characteristic ***X***, as recorded in the census, for holding ***j*** in EA ***i*** and district ***k***.

The estimate of the total value of characteristic ***X*** in district ***k*** (Expression (2)) is given by;

$$X'_k = M'_k \overline{X}_k \qquad (8)$$

The estimate of the ratio of characteristics ***X*** and ***Y*** in district ***k*** (Expression (3)) is given by;

$$r_k = \frac{X'_k}{Y'_k} \qquad (9)$$

The estimate of the number of units (holdings, persons, etc.) with a certain characteristic is given by applying Expressions (7) and (8) for the following

$x_{kij} = 1$ if the unit has the characteristic in question; and

$x_{kij} = 0$ if the unit does not have the characteristic.

Estimation procedure – National level

The estimate of the average value of characteristic ***X*** per holding (Expression (4)) is given by;

$$\overline{X} = \frac{\sum_{k=1}^{75} M'_k \overline{X}_k}{\sum_{k=1}^{75} M'_k} \qquad (10)$$

The estimate of the total value of characteristic ***X*** (Expression (5)) is given by;

$$X' = \sum_{k=1}^{75} M'_k \overline{X}_k \qquad (11)$$

The estimate of ratio of characteristics ***X*** and ***Y*** (Expression (6)) is given by ;

$$r = \frac{x'}{y'} \qquad (12)$$

Estimates for ecological belts and development regions are formed by aggregating across the relevant districts making up the area in the same way as for national estimates.

Estimate of Standard Errors

Standard errors were estimated using the sub-sample method. In each district, sample EAs were assigned to 10 sub-samples, with the same number of EAs in each sub-sample.

To estimate the standard error on the estimate of average per holding for characteristic ***X*** in district ***k*** , the estimate of average is first calculated for each sub-sample ***g*** as follows:

$$\overline{X}_{kg} = \frac{\sum_{i=1}^{n_k/10} \sum_{j=1}^{m_{ki}} X_{kij}^{(g)}}{\sum_{i=1}^{n_k/10} m_{ki}}$$

where;

$X_{kij}^{(g)}$ = the value of characteristic ***X*** in district ***k***, EA ***i*** and holding ***j*** for sub-sample ***g(g=1,2,……,10);***

The standard error of the estimate of average per holding for characteristic ***X*** in district ***k*** is given by ;

$$S\left(\overline{X}_k\right) = \sqrt{\frac{\sum_{g=1}^{10} \left(\overline{X}_{kg} - \overline{X}_k\right)^2}{90}}$$

where;

$$\overline{X}_k = \frac{\sum_{g=1}^{10} \overline{X}_{kg}}{10}$$

The standard error of the estimate of total for characteristic ***X*** in district ***k*** is given by ;

$$S\left(X'_k\right) = M'_k S\left(\overline{X}_k\right)$$

The standard error of the estimate of total for characteristic ***X*** at the national level is given by;

$$S\left(X'\right) = \sqrt{\sum_{k=1}^{75} S^2\left(X'_k\right)}$$

The standard error of the estimate of average per holding for characteristic ***X*** at national level is given by ;

$$S\left(\overline{X}\right) = \frac{S\left(X'\right)}{\sqrt{\sum_{k=1}^{75} M'_k}}$$

Standard errors for ecological belts and development regions are formed by aggregating across the relevant districts making up the area in the same way as for standard errors on national estimates.

Estimation of Sample Design Parameters

The design effect measures the variance of an estimate in comparison with the variance which would have been obtained if simple random sampling had been used. The design effect $\boldsymbol{d_k}$ for characteristic ***X*** in district ***k*** is estimated as :

$$d_k = \frac{S^2\left(\overline{X}_k\right) \times m_k}{S^2\left(X_{kij}\right)}$$

where ;

$$S^2\left(X_{kij}\right) = \frac{1}{m_k - 1} \sum_{i=1}^{n_k} \sum_{j=1}^{m_{ki}} \left(X_{kij} - \overline{X}_k\right)^2$$

$$m_k = \sum_{i=1}^{n_k} m_{ki}$$

The coefficient of variation is given by ;

$$CV_k = \frac{S\left(X_{kij}\right)}{\overline{X}_k}$$

The measure of homogeneity for characteristic ***X*** in district ***k*** is estimated as :

$$\delta_k = \frac{d_k - 1}{\overline{m}_k - 1}$$

where;

$\overline{m_k}$ = average sample holdings per EA in districts ***k.***

δ_k is a measure of the relationship between the variability of the first and second stages of sampling. If the variability within EAs is high in comparison with the variability between EAs, then δ_k will be small. If on the other hand EAs are very homogeneous, δ_k will be high.

δ_k is influenced by the size of EAs - the larger EAs are, the more heterogeneous will they be and therefore δ_k will be lower.

In assessing the sample design for future censuses, decisions will need to taken on how many EAs to sample, and then how many holdings to sample within each selected EA. This decision is based on variance and cost (or time) factors.

The total cost of conducting the Census enumeration in district ***k*** can be represented as ;

$$C_k = C_{k0} + n_k C_{k1} + n_k \overline{m}_k C_{k2}$$

Where;

C_{k0} = overhead costs ;

C_{k1} = average costs associated with each of the first stage units (e.g. listing, travel to EAs) ; and

C_{k2} = average costs associated with each of the second stage units in each EA (e.g. interviewing holdings).

The optimum number of sample holdings to sample per EA is calculated as ;

$$opt\left(\overline{m}_k\right) = \sqrt{\frac{C_{k1}}{C_{k2}} \frac{1-\delta_k}{\delta_k}}$$

A low C_{k2} means interviewer costs are low and therefore $\overline{m}_k$ should be high. A high C_{k2} means that interviewer costs are high and therefore $\overline{m}_k$ should be low. High within EA variability

means a low δ_k implying the need for a large $\overline{m_k}$ low within EA variability means a high δ_k and therefore a low $\overline{m_k}$.

Revision Methodology

The estimate has been revised through post enumeration survey.

2.2.5.4 Other Reference Information

The data from the Population Census are used as frame as well as inputs in the analysis of survey results. FAO Statistical Development Series No. 2 – Programmed for the 1990 World National Sample Census of Agriculture (FAO 1986) and its companion volume FAO Statistical Development Series No. 2nd – supplement for Asia and the Pacific, Programme for the 2000 World National Sample Census of Agriculture (FAO, 2000), Census instruction manuals for supervisors and enumerators, Technical Reports, Analysis Reports and Monograph are the other reference information.

2.2.6 Labor and Employment

2.2.6.1 Concepts, Definitions and Classifications

Rural population

Rural Population is the total number of individuals living in the rural areas. These areas, include all Village Development Committee within the country and that do not meet the requirements for classifications as urban.

Agriculture sector wage rates

Agriculture sector wage rate is defined as the rate of pay received by agriculture workers on the basis of some units of payments for service rendered in the agriculture sector.

Non-Agriculture sector wage rates

Non-agriculture sector wage rate is defined as the rate of pay received by non-agriculture workers on the basis of some units of payments for service rendered in the non-agriculture sector.

Agricultural workers

Agricultural workers are workers employed permanently/occasionally by the holding during the reference year. By permanent is meant that the person worked on the holding for six months or more during the reference year. In mountain areas, a permanent worker was anyone considered permanent by the holder. Permanent workers exclude any members of the holder's household (even if the person is unrelated and is being paid for work on the holding).

Occasional agricultural workers are workers employed by the holding who are not considered to be permanent. Occasional workers include only those who work for payment in cash or in goods - work done in exchange for labor is not included.

2.2.6.2 Coverage, Availability, Data Sources and Responsible Agencies

Statistics/ Indicators	Coverage	Availability	Data source	Responsible Agencies
Labor and employment				
Rural population	National/District	1961 onwards	Population Census	CBS
Active population in agriculture	National/District	1961 onwards	Population Census	CBS
Labor force in agriculture	National/District	1961 onwards	Population Census	CBS
Total employment	National/Regional/ Ecological belt	2000	Nepal Labor Force Survey	CBS
Nominal and real wage rates by sectors	National only	1995/96 2003/04	Nepal Living Standard Survey	CBS
Agricultural workers	National/District	1991/92 onwards	National Sample Census of Agriculture	CBS

2.2.6.3 Data Processing, Estimation and Revision Methodology

Data Processing of PC

For data processing of the Population Census 2001, a census data processing unit was established at the Population Section of the CBS with one data processing expert. For data processing and tabulations, the CBS used one Pentium IV, four Pentium III along with two high speed laser printers and one dot matrix printer in Windows NT under Local Area Network environment. The data processing expert was made available by the UNFPA for all these purposes.

Due to the limited physical facilities like space, computers and personnel that were available at the CBS, data entry along with coding and editing works of the census questionnaires was contracted out to private agencies. Two parties contracted out for the data coding, editing and entry work of the two different census forms were responsible for the short and the long form questionnaires respectively. Nearly 400 micro- computers (Pentium III) were used for the data entry work. The data entry work was completed within a period of 5 months. Data entry programmers, data editing and coding manuals were developed in the CBS and given to the parties doing the data entry work.

Due to the large volume of editing and coding to be done, skipping of editing rules and miscoding of data field was found frequently. So the CBS had to seriously monitor the editing and coding work. Such type of errors was discouraged by the central supervision.

Data were entered in the networking environment. All terminals were linked to file servers

and access security was maintained. It were found in some cases that some operators tend to skip field to increase the number of records entered. Such operators were fired and the programme was modified to minimize this type of error.

Data from private parties were transferred to the CBS through dial modem and later on through CD-ROM also. At the CBS, basically two types of check were done: completeness of data and accuracy and consistency of data.

Nearly two percent of the entry completed questionnaires were verified. During verification, if the percentage of error found was higher than the tolerance limit, then the data entry work was repeated in such wards. In this process, supervisors had to physically check the questionnaires.

Integrated Microcomputer Processing System (IMPS) prepared by the U.S. Census Bureau was used for data entry, editing, verification and management of census data. STATA and SPSS Software Packages were used for the tabulation of the census results.

Estimation and Revision Methodology of PC

The ratio method was used in making estimates for the sample. The formula used for the purpose was:

$$y''_{hi} = \sum_{j} \frac{y_{hij}}{x_{hij}} X_{hij}$$

where,

y''_{hi} = the ratio estimator for the population with a certain characteristic in the i^{th} domain and in the h^{th} district,

y_{hij} = number of persons with a certain characteristic in the j^{th} tabulation group, in the i^{th} domain and in the h^{th} district,

x_{hij} = total number of persons found in the sample in the j^{th} tabulation group, in the i^{th} domain and in the h^{th} district, and

X_{hij} = total number of persons in the 100 percent count, found in the j^{th} tabulation group, in the i^{th} domain and in the h^{th} district.

Tabulation groups were created separately for tabulation of persons and those for households. The main control variables for the majority of tabulations for persons were two variables: age and sex. Tabulation groups for household tabulations were formed in a different manner: taking households as a tabulation group in the domain.

To implement the ratio estimation, first weights were calculated. The weights for sample data were computed by dividing the 100 percent counts for the same tabulation groups in the domain by sample counts for the same tabulation groups in the domain. To avoid inconsistency due to rounding, the figures were converted to whole numbers.

Revision Methodology

Post enumeration surveys (PES) are generally conducted for the evaluation of the census coverage error and assess the quality of Population Census data.

2.2.6.4 Other Reference Information

VDC and Municipality level maps with ward boundary, District level maps showing the VDC and Municipality boundary and Zonal planning maps prepared by Population Census Mapping Project, Census instruction manuals for supervisors and enumerators, Technical Reports, Analysis Reports and Monograph are the other reference information for the Population Census.

2.2.7 Rural Services

2.2.7.1 Concepts, Definitions and Classifications

Employment

A person is counted as currently employed if he/she did at least one hour's work in the previous seven days, or if he/she had a job attachment.

Income

Income, as defined in NLSS, measures the flow of resources in a household in the past 12 months. The main components of this measure are: crop income, non-crop farm income, reported valuation of housing consumption of own dwelling, income from wage employment, income from non-farm enterprises, income from remittances, rental income and income from other sources.

Agricultural credit

Agricultural credit refers to whether, on the day of enumeration, the holding owed money on any loan, which had been received for agricultural purposes, regardless of when the loan had been taken out. The figures shown in the tables do not refer to the number of loans received during the reference year.

2.2.7.2 Coverage, Availability, Data Sources and Responsible Agencies

Statistics/ Indicators	Coverage	Availability	Data source	Responsible Agencies
Rural Services				
Rural employment	National/Regional /Ecological belt	2000	Nepal Labor Force Survey	CBS
Rural income	Only HH income	1995/96, 2003/04	Nepal Living Standard Survey	CBS
Agricultural credit	National/District	1991/92 onwards	National Sample Census of Agriculture	CBS

2.2.7.3 Data Processing, Estimation and Revision Methodology

Nepal Living Standard Survey II

The data entry development platform was modified in order to produce fully qualified *Stata* files. The code of each variable in the *Stata* files is now composed of the corresponding Question Number, preceded by a reference to the Section and Part of the Questionnaire it belongs to.

Sampling weights

Since the household listing operation was completed in all of the selected cross-sectional PSUs, it is now possible to compare the implicit estimations of the Total Number of Households for Nepal as a whole and for various sub-national domains, with the corresponding figures presented by the CBS in the 2001 Census publications, and with those in the sub-ward-level files that were used as a sample frame to select the NLSS II PSUs.

The Total Number of Households H in any sub-national domain D can be estimated from the sample as $\hat{H} = \sum_{i \in D} h_i / p_i$, where h_i is the number of households listed in PSU i and p_i is its selection probability. For the PSUs that did not require segmentation, the selection probability is

$$p_i = \frac{k m_i}{\sum_{i \in Stratum} m_i}$$

where m_i is the number of households reported for PSU i in the sample frame and k is the number of PSUs selected in the stratum. For the PSUs that were segmented prior to the listing operation, the selection probability is

$$p_i = \frac{k m_i}{\sum_{i \in Stratum} m_i} \frac{q_s}{\sum_j q_j}$$

where q_j is the number of dwellings quick-counted in segment j and s designates the selected segment.

2.2.7.4 Other Reference Information

The data from the Population Census are used as frame as well as inputs in the analysis of survey results.

2.2.8 Other

2.2.8.1 Concepts, Definitions and Classifications

Holder

The holder is the person in the holding who exercises management control over the operations of the holding. There is only one holder in each holding. The holder may or may not be the same person as the household head.

2.2.8.2 Coverage, Availability, Data Sources and Responsible Agencies

Statistics/Indicators	Coverage	Availability	Data source	Responsible Agencies
Others				
Demography of Holders	National/ District	1991/92 onwards	National Sample Census of Agriculture	CBS

2.2.8.3 Data Processing, Estimation and Revision Methodology

For the data processing, estimation and revision methodology of National Sample Census of Agriculture, please see 2.2.5.3.

2.2.8.4 Other Reference Information

For the other reference information of National Sample Census of Agriculture, please see 2.2.5.4.

Chapter 3

Major Data Sources for Agricultural Statistics

3.1 List of major agricultural censuses, surveys and administrative records

The following is the list the major censuses, surveys, and administrative records currently and/or frequently conducted in the country:

- **Censuses:**
  - National Sample Census of Agriculture (NSCA)
  - Population Census (PC)
- **Surveys:**
  - Crop and Livestock Survey (CLS)
  - Nepal living Standard Survey (NLSS)
  - Nepal Labor Force Survey (NLFS)
- **MOAC Administrative Records**

3.2 Metadata for each of the major censuses

3.2.1 National Sample Census of Agriculture (NSCA)

3.2.1.1 Overview

The Government of Nepal has accorded top priority to agricultural development in every five-year plan period. The Central Bureau of Statistics (CBS) has been collecting important basic data on agricultural structures (such as: information on number of farms and their distribution by size, land tenure and land use, data on all crops and livestock species, information on crop patterns, use of pesticides and fertilizers, irrigation practices, employment in agriculture, etc) through decennial National Sample Census of Agriculture (NSCA) needed for planning development of agriculture. To date, five National Sample Censuses of Agriculture have been accomplished 1961/62, 1971/72, 1981/82, 1991/92 and 2001/02. All of these censuses were conducted on sampling basis. The next NSCA will be conducted in 2011/12.

The last three censuses covered the whole of Nepal, including urban areas. Only household sector was included; agricultural activities undertaken by government organization, businesses etc. were excluded.

The National Sample Census of Agriculture 2001 was undertaken with the following objectives;

- Collect data from around 150000 agricultural holdings (Census 2001).
- To publish data at district level on the following: Structure and characteristics of the holding such as size, agricultural land use, tenure, fragmentation, area planted to crops, number of livestock, and other farm practices.
- To provide benchmark data on agriculture for improving the reliability of estimates from current agricultural survey.
- Provide sample frame for current agricultural surveys.

3.2.1.2 Census Design

The National Sample Census of Agriculture has been undertaken on a sample basis. A two-stage sample design was constructed to publish the data by district.

Sampling frame

The primary sampling units is the enumeration area (EA) generated from the 2001 Census of Population, showing the number of agricultural holdings for each EA.

Sampling design / selection procedure

The basic sampling methodology used in NSCA 2001/02 was the two-stage area sampling as follows:

First stage: Selection of a stratified sample of enumeration areas (EAs) with probability proportional to expected number of holdings (stratified PPS sampling);

Second stage: Within selected EAs, the selection of a sample agricultural holdings using stratified systematic random sampling.

Enumeration areas were defined as wards or combinations of wards with 30 or more holdings. To select the sample of EAs, districts were divided into four groups according to their importance from an agricultural production point of view. The total area under eight major crops assessed the importance of each district. The number of EAs sampled in each district was 50, 60, 70 or 80, depending on the group to which the district belonged. The target number of holdings sampled from each selected EA was set at 25. The expected number of holdings in each EA, used as the basis for the selection of the PPS sample, was obtained from the Population Census.

Between 20 and 30 holdings were selected in each selected EA. To select the sample, holdings wee divided into four strata (based on the size of the holding) and systematic random sampling was applied in each stratum. Holdings were identified on the basis of the place of residence of the person operating the holding. The sample selection was done in such a way that

all holdings in a given district have the same chance of selection in the sample. Manang District was completely enumerated because it had only a small number of holdings.

Altogether, 5,00 EAs were selected. The final sample of holdings for the country was about 123,000.

Main data items/variables

The scope of the 2001/02 National Sample Census of Agriculture (NSCA) adopted most of the recommendations of the FAO in the collection of data under the following main headings: Identification, Holder characteristics, Demographic and other characteristics, Employment, Land and water, Crops, Livestock and poultry, Farm equipment, Non-residential buildings, Ancillary activities on the holding.

Reference period/date of data collection

The primary reference period for the data collected in the census was the calendar year 2001. Land area and livestock were collected in respect of the day of enumeration.

The census enumeration work was conducted in two phases. In the first phase (January to March 2002), enumeration was carried out in 46 districts in Tarai and Hill areas. The remaining 29 Hill and Mountain districts were enumerated during the period April to June 2002. Data were collected in respect of the twelve month reference period January to December 2001.

Coverage

The National Sample Census of Agriculture, 2001/02 covered all districts of the country. Around 5100 "Enumeration Area" EA (a ward or a group of wards) were first selected from 74 districts (excluding Manag where complete enumeration was carried out). List of all agricultural holdings were then prepared in each selected EA and a sample of holdings selected for inclusion in the census. Between 20 and 30 holdings were sampled in each selected EA. In total, about 123,000 agricultural holdings (3.7 percent of all holdings) were enumerated in the census.

Geographical scope

National and District level.

3.2.1.3 Conduct, Operations and Data Quality Control

The National Sample Census of Agriculture 2001/02 was undertaken by the Bureau with its own budget. The component of training of the census field personnel was undertaken as a joint project with the Asian development Bank (ADB) under TA 3451 NEP: Strengthening the National Statistical System. The ADB also provided technical support in the processing and analysis of the census results.

In order to minimize non-sampling errors in the census, quality control measures were instituted at the varies phases of the activity, from the conceptualization stage down to analysis of the results.

To advise the Bureau on technical aspect of the census, an 'Agricultural Census Technical Committee', under the chairmanship of the Director General, CBS was formed. This committee made significant recommendations during the various phase of the census operations. At the district level, a "District Census Coordination Committee" was formed under the chairmanship of the Chief District Officer. The committee was responsible for coordinating and supervising the enumeration work in the district.

Before the field work, there was an intensive different level training for District Census Officers, Enumerators and Supervisors. The training for the field operation consisted of lectures, discussion, mock interviews and field practice on the filling up of questionnaire.

Census estimates are subject to sampling errors because the data are based on a sample of holdings and not all holdings. The size of the sampling errors can be estimated from the sample estimates. Non-sampling errors are likely to be the major source of concern, and every effort was made at all stages of the survey to minimize these non-sampling errors.

3.2.1.4 Statistical Report

The Central Bureau of Statistics published 85 Statistical reports (75 District reports, 1 District Summary report, 5 Development region reports, 3 Ecological belts reports and 1 National report) containing 22 output tables with explanatory text and two analytical reports- Highlight and Agriculture Monograph. The District level statistical reports tables were also available to users on diskettes/ CD-Rom.

The release of such an extensive set of census reports helped to promote wide use of census results.

3.2.2 Population Census (PC)

3.2.2.1 Overview

Since the first population count of 1911, nine more censuses have been conducted in Nepal. The earlier censuses of Nepal were not that precise as compared to the modern censuses. Four censuses taken before the 1952/54 census are known as "head counts". The 1952/54 census was taken in two parts of the country in two different years. Then a synchronized census was taken in 1961. After 1961, a census has been taken in every ten years. The next Population Census will be conducted in 2011.

The Population Census 2001 was a nationwide undertaking with the following objectives;

- to provide sex disaggregated data of the population and other variables related to households, demographic, social and economic conditions of the country,
- to provide data for small administrative areas of the country on population, housing and household facilities,
- to provide reliable frames for different types of sample surveys,
- to provide detailed information on women, children, the aged and the disabled.

3.2.2.2 Census Design

The Population Census 2001 was done in two phases - the household listing operation followed by the Census Enumeration of the short form (Schedule 1) and the Sample Enumeration of the long form (Schedule 2) only in the selected household simultaneously.

Sample frame

As mentioned earlier, the 2001 census collected data based on short form (**Schedule1**) for the complete enumeration of the benchmark information and the long form (**Schedule 2**) for the sample enumeration of other socio-economic and demographic information. The long form was administered for population dwelling in about 20 percent of the total housing units. Based on these samples, enumeration estimates were generated at the district level with reliable degree of precision. The primary sampling units were the housing units in each ward.

Sampling design/selection procedure

The summarized sampling scheme of the 2001 Population Census is as follows.

- The sampling covered the private households only. For the institutional population, Schedule-1 only was administered.
- For the sampling, 75 administrative districts formed the main strata and VDC's and municipalities within the district formed the domains.
- There were around 36,000 wards in the country at the time of the census. For the purpose of the census enumeration some of the large wards were further divided into sub-wards. These wards and sub-wards formed the EA's for sampling. The total number of EAs thus formed were around 40,000.
- Sampling was carried out in each EA; housing unit being the sampling unit.
- The list of housing units and households served as the sampling frame for the EA. The housing units were selected by systematic sampling method. The sampling interval taken was 8.
- The list of selected housing units was made available to the enumerator for the enumeration. All households and persons found in the selected units were enumerated.
- The ratio method was used in making estimates for the sample.
- Tabulation groups were created separately for tabulation of persons and those for households. The main control variables for the majority of tabulations for persons were two variables: age and sex. Tabulation groups for household tabulations were formed in a different manner: taking households as a tabulation group in the domain.
- To implement the ratio estimation, first weights were calculated. The weights for sample data were computed by dividing the 100 percent counts for the same tabulation groups in the domain by sample counts for the same tabulation groups in the domain. To avoid inconsistency due to rounding, the figures were converted to whole numbers.

Selection Procedure

Two visits were made for the sample enumeration. The first one was the listing; during the first visit, the census supervisors carried out house numbering. After the housing list thus prepared, the supervisors sampled housing units.

The enumerators made the second visit for census enumeration. Short questionnaire was used for every household in each EA and the long questionnaire was filled in for the sample housing units selected by the supervisor.

Sampling was adopted in all rural areas of 69 districts. The 6 districts in which sampling were not adopted are listed in the table below. Out of the 58 municipalities, sampling scheme was followed in 6 municipalities and the remaining municipalities were completely enumerated.

Districts and municipalities enumerated in the 2001 population census

	District	Municipality
Complete enumeration: Schedule 1 as well as Schedule 2 filled in for all housing units.	Rasuwa Mugu Humla Dolpa Mustang Manang	All municipalities except thoselisted below
Sample enumeration: Schedule 1 filled in for all households and Schedule 2 filled in for sample housing units.	All districts except those listed above	Biratnagar Dharan Lalitpur Kathmandu Birganj Pokhara

Sample selection was carried out in each census EA. The sampling frame for each EA was created during the initial listing operation. The listing form, among other items, contained serial number of the housing units and the serial number of households found within the housing units. This listing form of housing units formed the sampling frame for selecting the housing units, which constituted the sampling unit, and all households and persons found in the selected units were enumerated using both the short and long questionnaires. The sample of households and persons in each EA was thus a one-stage cluster sample, the cluster being the housing unit.

Systematic sampling carried sample selection of housing units in each EA. It was decided to sample one housing unit out of 8 housing units; every 8^{th} household was selected. So, the

sampling interval was 8.

The main control variables for the majority of tabulations for persons are the age and sex. The main tabulation group was formed for these two variables. Weights were calculated mainly on the basis of age and sex of the population.

Main data items/variables

The main data items included in Schedule 1 in the 2001 Population Census are Identification, Household Information (Type of housing unit, Tenure of housing unit, Whether any land operated for agriculture, Area of land operated, Whether any livestock/poultry raised, Number of livestock/ poultry, Whether any female members of the household own any house and/or land, Total area of land owned by the female, Whether any female members of the household own any livestock, Number of livestock owned, Whether household has any small scale economic activity other than agriculture, Type of small scale economic activity, Whether any individual absent in the household is living outside the country and Information about the absentee) and Individual Information (Serial number of the household member, Full name of the member, Male/Female, Age, Caste/Ethnicity, Relationship of the household head, Religion, Language spoken, Citizenship and Type of disability)

The main data items included in Schedule 2 in the 2001 Population Census are Identification, Household Information (Main source of drinking water, Main fuel used for cooking, Kind of lighting used, Toilet facility, Presence of household conveniences, Whether any deaths in the household and Information of the deceased person) and Individual Information (Serial number of the household member, Full name and sex of the member, Age, Place of birth, Duration of stay at the present place, Reason for staying in this district, Residence five years ago, Whether able to read and write, Level of education, Whether currently attending school, Marital status, Age at first marriage, No. of children ever born, Any live births in the past 12 months, Work usually done during the last 12 months, No. of months worked, Occupation (type of usual work), Industry (place of work), Employment status, Reasons for not usually working and Living arrangements of children below 16 years.

Reference period/ date of data collection

The household listing operation was done during the period May 14-28, 2001 followed by both the Census and Sample enumeration during the period June 10-26, 2001. The reference date of the census (or the census day) was the sunrise of 22nd June 2001. The homeless persons were counted on the day before the census day June 10-26, 2001.

Coverage

The Population Census 2001 covered all wards of all districts of the country. At the time of census there were 3,914 VDC's and 58 municipalities. VDC's contained a total of 35,226 wards while urban areas contained 806 wards. Thus total numbers of wards in the country were 36,032.

Geographical scope

National, Regional, Urban/Rural, District, VDC/Municipality and Ward Level.

3.2.2.3 Conduct, Operations and Data Quality Control

The Population Census is one of the largest statistical operation carried out by the Central Bureau of Statistics of Government of Nepal. In order to conduct a reliable census by covering hole country within a specified duration, a detailed calendar of operation was prepared and each activity was constantly monitored.

For census enumeration 76 District Census Offices were established in all the 75 districts including 2 in Kathmandu district. Each district was further divided into one to three Area Census Offices depending upon the population of the district. All the District Census Offices were supervised and controlled by the Bureau. For the Population Census 2001 multi-donors have contributed in different sectors.

In order to minimize non-sampling errors in the census, quality control measures are instituted at the varies phases of the activity, from the conceptualization stage down to analysis of the results.

To advise the Bureau on technical aspect of the census, an ' Technical Committee', under the chairmanship of the Director General, CBS was formed. This committee made significant recommendations during the various phase of the census operations. At the district level, a "District Census Coordination Committee" was formed under the chairmanship of the Chief District Officer". The committee was responsible for coordinating and supervising the enumeration work in the district.

Before the field work, various levels training were organized for District Census Officers, Enumerators and Supervisors. The training for the field operation consisted of lectures, discussion, mock interviews and field practice on the filling up of questionnaire.

Census estimates are subject to sampling errors because the data are based on a sample of holdings and not all holdings. The size of the sampling errors can be estimated from the sample estimates. Non-sampling errors are likely to be the major source of concern, and every effort has been made at all stages of the survey to try to minimize these non-sampling errors.

In Population Census 2001 for the first time various terms definitions used in the census were clarified and standardized. In this context, the Nepal Standard Classification of Occupation and Industry has been prepared with due consideration on gender issues.

3.2.2.4 Statistical Report

The Central Bureau of Statistics published 26 different 2001 Population Census publications (Population Census 2001, Development region reports; Population of Nepal ,Caste, Religion and Mother Tongue District level and Development Region, Population Census 2001, Economic Activity Tables Population Census 2001 Selected Urban Table, Population Monograph 2001 etc.).

Population Census 2001 sample data, Gender, Population Census 1991 Nepal and Population Census 1981 Nepal are also available to users on CD-Rom.

3.3 Metadata for each of the major surveys

3.3.1 Crop and livestock Survey (CLS)

3.3.1.1 Overview

The collection and dissemination of official data for current agricultural statistics in Nepal has been the responsibility of the Central Bureau of Statistics (CBS) since 1993. Prior to 1993 the responsibility was with the Ministry of Agriculture. Data on current agriculture statistics is collected through the Crop and Livestock Survey (CLS) which is a nationwide survey. The CLS was developed with the technical assistance of ADB. The objectives of the crop and livestock survey were:

- To provide estimates of crop production to monitor the progress of agriculture in each district.
- To provide an estimate of livestock and poultry inventory, and livestock and poultry products at least two times a year.
- To prepare forecasts of crop harvests for the estimation of quarterly national accounts.
- To make available current agricultural data for planning and policy formulation.
- To provide the general public timely estimates of agriculture data for research, business ventures and decision making.

3.3.1.2 Survey Design

The Crop and Livestock Survey (CLS) covers the whole of country. An agricultural holding, as defined in NSCA, is the statistical unit in the survey. Data on agricultural production activities of holdings operated by households are collected through structured questionnaires administered by enumerators.

Nepal has 75 districts in the three ecological zones of the country. For administrative purpose, the CBS has distributed the 75 districts into 33 groups consisting of either two or three districts, which are generally contiguous. A Branch Statistics Office (BSO) covers each group. The domain in the Crop and Livestock Survey (CLS) is the set of all Enumeration Areas (EA) under the coverage of a BSO. The set of EAs covered by a BSO is referred to as Branch Statistical Office Coverage (BSOC).

The CLS have been undertaken on a sample basis. A two-stage sample design was constructed to publish the data by BSOC .

Sample frame

The primary sampling units shall be selected from the list of enumeration area (EA) generated from the last Census of Population, showing the number of agricultural holdings for each EA.

Sampling design/selection procedure

The design is a replicated two-stage sampling, designed to generate equal probabilities of selection of elements (Epsom). This selection results in self-weighting samples which is achieved by selecting PSU's through sampling with Probability Proportional to Size (PPS) at the first stage and then drawing an equal number of SSU's per PSU at the second stage.

Each replicate is selected in two stages. Within BSOC, the sample holdings in a replicate are selected as follows:

Stage I.

An appropriate number of EAs are selected with probability proportional to the estimated number of holdings. The holding numbers, which are used as the measure of size, are estimated from the 2001 Population Census. The sample EAs is fixed at an average of 3 EAs for district in the BSOC. Thus, the number of EAs per BSOC is either 6 or 9, depending on whether the BSOC has 2 or 3 districts, respectively, in it's coverage. A computerized pps sampling procedure is implemented to generate the sample EAs. The EAs are laid out by district so that implicit stratification is achieved in the pps sampling.

Stage II.

Within each selected EA, a listing of all agricultural households is done. The listing will result in a compilation of agricultural holdings in an EA. A sample of 15 holdings is selected using the current method of systematic selection of holdings after stratifying them according to size. This method was inherited from the methodology used in the National Sample Census of Agriculture 1991/92.

Sample holdings are drawn using an equal probability of selection employing systematic sampling techniques. Standard field techniques for implementation systematic sampling are suggested. The sampling interval is computed by dividing the number of holdings in the EA by 15, the expected number of sample holdings per EA. Using a given random start and the computed sampling interval, the sample is selected from the list of holdings laid out from Stratum I through Stratum IV.

Main data items/variables

The items included in the CLS questionnaire are as follows: Parcel wise area of holding, Planted/harvested area under temporary crop, Production of each crop, Month of harvest, Farm gate price of major crop, No. of harvested fruit tree and production, Livestock population by age and sex, Milk production, Egg production and Wool production.

Reference period/ date of data collection

Two rounds of surveys are conducted to collect current agriculture statistics (summer and winter rounds). The first round of data collection is carried out in December-January and the second round in June-July.

Coverage

The Crop and Livestock Survey covered all districts of the country. Around 675 "Enumeration Area" EA (a ward or a group of wards) were first selected from 75 districts. The lists of all agricultural holdings were then prepared in each selected EA and a sample of holdings selected for inclusion in the survey and 15 holdings were sampled in each selected EA. In total, about 10125 agricultural holdings were enumerated in the survey.

Geographical scope

National, Branch Statistical Office Coverage and District level.

3.3.1.3 Conduct, Operations and Data Quality Control

The Crop and Livestock Survey undertaken by the Bureau was part of the Bureau's budget. The training of the survey field personnel was undertaken as a joint project with the Asian development Bank (ADB) under TA 2861 NEP: Supporting Agriculture Statistics Development. The ADB also provided some logistics support in the survey.

In order to minimize non-sampling errors in the survey, quality control measures are instituted at the varies phases of the activity, from the conceptualization stage down to analysis of the results.

Before the field work, there was an intensive different level training for Officers, Enumerators and Supervisors. The training for the field operation consisted of lectures, discussion, mock interviews and field practice on the filling up the questionnaire.

Survey estimates are subject to sampling errors because the data are based on a sample of holdings. The size of the sampling errors can be estimated from the sample estimates. Non-sampling errors are likely to be the major source of concern, and every effort has been made at all stages of the survey to try to minimize these non-sampling errors.

3.3.1.4 Statistical Report

Presentation of crops and livestock survey (1998/99, 1999/00), results and approaches with comparison – 2004 by Dr. Basudev Uprety, Local consultant.

3.3.2. Nepal living Standard Survey (NLSS)

3.3.2.1 Overview

The Central Bureau of Statistics (CBS) conducted the Nepal Living Standards Survey (NLSS) for the first time in 1995/96. The survey collected information on the extent, nature and determinants of poverty covering different aspects of household welfare, including consumption, income, housing, access to facilities, education, health, employment, access to credit and remittances.

The Government of Nepal has implemented the Tenth Five-Year Development Plan (2002-2007) formulated as Poverty Reduction Strategy Paper (PRSP) with the sole objective of poverty

alleviation. The government is also committed to achieving the Millennium Development Goals (MDGs). This initiated a strong need for the second round of Nepal Living Standards Survey to use the results to monitor the on-going progress in living standards of the people and to evaluate the impact of various government policies and programs on the living conditions of the poor.

The second round of NLSS (NLSS II) was originally scheduled for 2002/03 and conducted a year later during 2003/04.

The main objective of launching the NLSS II was to update comprehensive data on the living standards of the people and assess the impact of various government policies and programs on consumption poverty and social indicators over the last eight years.

3.3.2.2 Survey Design

The sampling design of the NLSS II included two components. The first one was the nationally representative random cross-section sample of 4008 households from six explicit strata of the country. The second one was the panel sample of 1232 households drawn from those households interviewed in NLSS I.

Sample frame

The 2001 Population Census of Nepal provided a basis for this survey's sample frame. The size of each ward (as measured by number of households) was taken as a unit of sample frame. Some larger wards were divided into smaller units (sub-wards) of clearly defined territorial areas supported by reliable cartography while some of the smaller wards with fewer than 20 households were appended to neighbouring wards in the same Village Development Committees (VDC). The resulting sampling frame consisted of 36,067 enumeration areas (wards or sub-wards) spread over 3 ecological zones, 5 development regions, 73 districts, 58 Municipalities and 3,914 VDCs of the country. The sample frame was sorted by district, VDC, ward and sub-ward and districts were numbered from geographical East to West.

Sampling design/selection procedure

The design of the cross-section part of NLSS II was similar to that of the NLSS I. The total sample size (4,008 households) was selected in two stages: 12 households in each of 334 Primary Sampling Units. The sample of 334 PSUs was selected from six strata using Probability Proportional to Size (PPS) sampling with the number of households as a measure of size. The numbers are all multiples of 12 with the intention of implementing a two-stage selection strategy with that many households per PSU in the second stage. Within each PSU, 12 households were selected by systematic sampling from the total number of households listed.

The NLSS II cross-section sample was allocated into six explicit strata as follows: Mountains (408 households in 34 PSUs), Kathmandu valley urban area (408 households in 34 PSUs), Other Urban areas in the Hills (336 households in 28 PSUs), Rural Hills (1,224 households in 102 PSUs), Urban Tarai (408 households in 34 PSUs) and Rural Tarai (1,224 households in 102 PSUs).

The NLSS II panel sample is composed of 100 PSU's of the 275 PSUs visited in the NLSS I in 1995/96. The panel PSUs were selected with equal probability within each of the four strata defined by NLSS I, as follows: 12 (out of 33) in the Mountains, 18 (out of 50) in the Urban Hills, 33 (out of 92) in the Rural Hills and 37 (out of 100) in the Tarai.

Main data items/ variables

The Nepal Living Standards Surveys collected a wide range of information on the extent, nature and determinants of poverty covering different aspects of household welfare, including consumption, income, housing, access to facilities, education, health, employment, access to credit and remittances.

Reference period/date of data collection

Data collection was carried out from April 2003 to April 2004 in an attempt to cover a complete cycle of agricultural activities and to capture seasonal variations in different variables. The majority of the process was completed in three phases: the first one from April 2003 to July 2003, the second one from August 2003 to November 2003 and the final one from December 2003 to February 2004.

Coverage

The Nepal Living Standards survey 1995/96 covered of 3373 sample households from 274 primary sampling units (wards). The NLSS II was extended to a sample size of 3912 households from 326 primary sampling units (wards) for cross-section analysis and 962 households from 100 primary sampling units (wards) for panel analysis.

Geographical scope

National, Eco-development Region, Urban and Rural level

3.3.2.3 Conduct, Operations and Data Quality Control

The first round of Nepal Living Standards Survey has been conducted with the technical and financial support of The World Bank. The second round of Nepal Living Standards Survey has been conducted with the technical and financial support of The World Bank and the UK Department for International Development (DFID).

Data collection was carried out from April 2003 to April 2004 in an attempt to cover a complete cycle of agricultural activities and to capture seasonal variations in different variables. The majority of the process was completed in three phases: the first one from April 2003 to July 2003, the second one from August 2003 to November 2003 and the final one from December 2003 to February 2004. The samples were equally distributed among phases for both cross-section and panel PSUs considering their geographic distribution. Breaks between these phases were used for discussions over difficulties in the field and preparation for the next phase.

In order to minimize non-sampling errors in the survey, quality control measures are instituted at the various phases of the activity, from the conceptualization stage down to analysis of the results.

An advisory committee was formed under the chairmanship of Honourable member, NPC and a technical committee was formed under the chairmanship of Director General of CBS to direct and guidance the survey activities especially on questionnaire design, data collection in the field and analysis of the results. A core tem was formed at the central level and constituted the Director General, Deputy Director General, Deputy Directors of Social Statistics Division and Statistical Officers of the Household Survey Section.

There were separate sets of questionnaires for urban and rural communities, as in NLSS I. The questionnaires were revised intensively with the feedback from pre-test in the field. The pre-test was done in different ecological zones, development regions and urban/rural areas during July-August 2002.

After selection of field staffs, there was a month long intensive training on survey operation and various topics covered in the survey, related to living standards and socio-economic condition of the people for both the supervisors and enumerators. In addition, there was a separate trainings for supervisors on community questionnaire and for the data entry operators on data entry and verification. The trainings emphasized thorough discussion of each questions, mock interviews and practical interviews in the field. Before the supervisor and enumerator's training, master's training was also provided to all the statistical officers of BSOs for thorough understanding of the questionnaire and effective supervision at the district level.

The role of supervision was very crucial in accomplishing such a comprehensive and multi-topic survey. Thus, extensive field supervision both from the centre (CBS) and from the districts (BSOs) was carried out during the survey period. Moreover, the central supervision was carried by the core team members the Household Survey Section while the district level supervision was made by the Statistical Officers of the BSOs.

A distinctive feature of NLSS II was the use of computers for data entry in the field. The main goal of the fieldwork was to get actual figures from the respondents. To get the true figures from the respondents before the teams returned from the field (assigned ward), they had to go through all inconsistencies, errors or warnings. The enumerators revisited the households to correct the information whenever the data entry program showed any types of error. The data entry program developed in LSD composed of inconsistency corrections and error checks. The intensive field supervision from CBS included checking and verifying of the data entered comparing it with the filled-in data in the questionnaire.

3.3.2.4 Statistical Report

The Central Bureau of Statistics published two volumes of Statistical reports for Nepal Living Standards Survey 2003/04. Volume One contains Methodology and Implementation and results on Demography, Housing, Access to Facilities, Education, Health, Family Planning and Maternity and Migration and Children Away from Home . Volume Two of the report contains results on Agriculture, Consumption, Income, Employment Status, Wage Employment, Non-farm Enterprises, Remittances, Household Loans, Adequacy of Consumption and Income, and Government Services.

The statistical reports and raw dada are also available to users on diskettes/ CD-Rom.

3.3.3 Nepal Labor Force Survey (NLFS)

3.3.3.1 Overview

Nepal Labor Force survey (NLFS) 1998/99 was the first bench mark survey carried out by the Central Bureau of Statistics (CBS) in the field of Labour Force Statistics. The NLFS had carried out with the following objectives:

- Benchmark statistics provides first time detailed information on employment, underemployment and unemployment situation in the country.
- Formulation of plan and policies for employment generation.
- Monitoring employment and labor market conditions to fulfill the objective of Ninth Five Year Plan (1997-2002), which gave priority to alleviation of poverty through employment generation, skill enhancement and rural development.
- Measure supply and use of labour force in different economic activities

3.3.3.2 Survey Design

The design selected was a two stage sample, with wards forming the first stage of selection. The wards were selected with probability proportional to size (PPS), where the number of households recorded in the 1991 Population Census was the measure of size.

Sample frame

Two sampling frames were used for this survey, one covering urban areas and the other rural areas. These frames consisted of the list of enumeration areas (Wards) from the 1991 Population Census, along with the census count of the number of households in each.

Sampling design/selection procedure

The sample design adopted in the survey was a two stage sampling technique. In the first stage, wards were selected with probability proportional to size (PPS), where the number of households is the measure of size. In the second stage, equal number of households were selected from each ward with the systematic sampling procedure.

In first stage 360 PSUs (wards) were selected from urban areas and 360 PSUs (wards) were selected from rural areas. These selected PSUs were speeded over the entire country. Then in second stage, 14400 households were selected with 20 households from each selected PSU. There were equal households in the urban and rural areas comprising 7200 households.

Main data items/variables

The Nepal Labor Force survey (NLFS) 1998/99 has a wide range of contents on demographic characteristics of the population, education and training, different aspects of current activity: economical active and inactive, employment, underemployment and unemployment information, usual activity of population, range of employment indicators at the sub national levels, informal sector activities, past employment record, employment in the informal sector, work activities of children and the contribution of men, women and

children to household maintenance activities and seasonal variation of employment in the country.

Reference period/ date of data collection

In collecting data on work activities, two reference periods (short and long) have been used. A week (i.e. the seven days leading up to the interview) has been used as a short reference period, and a year as the long reference period. The short reference period is used to measure the current activity, while the long reference period is used to measure the usual activity.

Coverage

The survey covered a large national representative sample of more than 14,000 households spread all over the country covering 73 districts with data collection period extending over 12 months. It also adopted the current International Standards for measuring economic activity, as recommended by the ILO.

Geographical scope

National, Eco-development Region, Urban and Rural level.

3.3.3.3 Conduct, Operations and Data Quality Control

The Nepal Labour Force Survey has been conducted with the technical assistance of the International Labor Organization (ILO) and financial support from United Nation Development Programme (UNDP).

In order to minimize non-sampling errors in the survey, quality control measures are instituted at the varies phases of the activity, from the conceptualization stage down to analysis of the results.

To guide the survey team in planning and conducting the survey, a high level steering committee was established, with representatives from several key interest groups. This steering committee provided valuable inputs to design questionnaire and sampling scheme, and to the planned outputs from the survey.

After selection of field staffs, there was a three-week long intensive training for survey operation The training went heavily on thorough discussion of each questions, mock interviews and practical interviews in the field.

In a survey of these size, the robustness of the sample design means that the sampling errors for statistics at the national level are likely to be fairly small. Non-sampling errors are likely to be the major source of concern, and every effort has been made at all stages of the survey to minimize these non-sampling errors.

3.3.3.4 Statistical Report

The Central Bureau of Statistics has published the report on the Nepal Labour Force Survey 1998/99.

The statistical reports and raw dada are also available to users on diskettes/ CD-Rom.

3.4 Metadata for each of the major administrative registers

This section is to briefly describe how, where, and of what type of administrative records are used for production of agricultural statistics. Cadastral survey records were used to prepare sampling frames. As these records are not updated frequently enough, the surveys these days are based on the frame established through population census which are updated every 10 years.

3.4.1 MOAC Administrative Records

The Agri-business Promotion and Statistics Division of the Ministry of Agriculture and Co-operatives (MOAC) regularly publishes comprehensive statistical information on agriculture. These data are based on subjective assessment of the extension workers and administrative records which is prepared by extension workers; Junior Technicians (JT) and Junior Technical Assistants (JTA) for the Village Development Committees (VDC) they are assigned to, based on interviews with farmer groups. The Vegetables Development Division of the Department of Agriculture is in charge of compilation of reports on area, production and yield of selected vegetables.

The data published are advanced estimation of district level statistics on cereal crops, cash crops, pulses, livestock, poultry, fishery and horticulture. These estimates are used for compilation of preliminary estimates of national accounts needed prior to the Budget speech.

The data items covered are area and production of cereal crop, cash crop, pulse crop, estimates of horticulture crops, vegetable crops, and fish production, livestock number and their products, inputs, price, and irrigation.

3.4.2 Use of administrative records

Agricultural surveys do not use administrative records to prepare frames. Only in case of economic and establishment surveys are administrative records used. The frames thus obtained are, however, updated prior to conduct of surveys.

There is no specific administrative regulation which makes it obligatory to provide administrative information. However, the Statistics Act and requests through the apex statistical advisory body 'National Statistical Council' suffice to avail administrative information for the purpose of agricultural statistics.

In Nepal there are no provisions or procedures for making administrative statistics unbiased. These statistics are published and accepted as reliable on the basis of consistency checks.

As data are not captured through statistical surveys, at times CBS has to rely on administrative records. In some cases concerned agencies are advised or suggested to compile data in the format CBS would like to have. Consistency checks with the time series data and conformity with the episodic events are the only means of quality assurance applied before calling the administrative information as "statistics".

3.5 Coordination between the Agricultural and Population Censuses

Both the National Sample Census of Agriculture (NSCA) and Crop and Livestock Survey (CLS) undertaken by CBS are based on the sampling frame established from the latest population census. The NSCA is undertaken immediately (six months) after the field work of the population so that the frame established from it is not outdated.

3.6 Number and names of census and surveys:

Number and names of census and survey	Year of the census and survey	Year of the next census and survey
5 / National Sample Census of Agriculture (NSCA)	2001/02	2011/12
10 / Population Census (PC)	2001	2011
Crop and Livestock Survey (CLS)	Annual	Annual
Household Budget Survey	2005/06	2015/16
2/Nepal Living Standards Survey (NLSS)	2003/04	2008/09
1/Nepal Labor Force Survey (NLFS)	1999	2007

Annex 1

His Majesty's Government
National Planning Commission Secretariat
CENTRAL BUREAU OF STATISTICS
Nepal

STATISTICS ACT, 2015 (Year 1958)
(As Amended)

Royal Seal Affixed on 2015-8-10

Date of Publication in the

National Gazette 2015-8-18

Amendments

Amending Acts		**Royal Seal Affixed on**	**Date of Publication in the National Gazette**
1.	Statistics (Amendment) Act, 2018	2018- 9-13	2018- 9-13
2.	Certain Nepal Laws (Amendment and rearrangement) Act, 2020	2020-11-16	2020-11-16
3.	Summary Proceedings Act, 2028	2028-12-20	2028-12-20
4.	Statistics (Second Amendment) Act, 2030	2030-12-11	2030-12-11
5.	Judicial Administration Reform Act, 2031	2031- 4-18	2031- 4-18

Act No. 20 of 2015

An Act made to facilitate the collection of Statistics

Whereas, in order to formulate policies that may bring forth substantial to the people in grater extent, enhance the administrative efficiency of the government departments and acquire actual informations regarding the economic activities in the country. His Majesty's Government requires realistic basis and, to acquire such basis, it is expedient to make provisions to facilitate the collection of statistics and to establish a Central Bureau for the collection, consolidation publication and analysis of statistics, and thereby * to maintain peace and tranquility and provide

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***/** *Amendment by certain Nepal Laws (Amendment and rearrangement) Act, 2020*

for the comfort and economic well-being of the people in general, Now, therefore His Majesty the King has, with the advice of the Cabinet, made and promulgated this Act.

1. Short Title, Extent and Commencement

(1) This Act may be called the "Statistics Act, 2015"

(2) It shall extend throughout the Kingdom of Nepal.

(3) It shall come into force immediately.

2. Definition

In this Act, unless the subject or context otherwise requires:-

(a) "Authorised Officer" shall mean the officer authorised by a notified order to collect statistics and details of informations pursuant to the provisions of this Act.

(b) +"Director General" shall mean the Director General of the Central Bureau of Statistics appointed by His Majesty's Government.

(c) "Notified Order" shall mean an order published in the Nepal Gazette.

(d) "Officer of the Bureau" shall mean an officer specifically appointed as the officer of the Central Bureau of Statistics.

+ As changed by statistics (Second Amendment) Act, 2030.

(e) "Prescribed" or "as prescribed" shall mean prescribed or as prescribed in the rules framed under this Act.

3. Power to require production of details

His Majesty's Government, by a notified order, may require any persons of any class to supply to the Director General such information, schedules and statistics in their possession or control in such format and within such time as may be specified in the notified order.

4. Power to give direction to collect statistics

(1) His Majesty's Government may, by a notified order, issue direction for the collection of statistics concerning any matter as provided in this section.

(2) The following arrangements may be made by an order notified pursuant to sub-section (1):-

(a) Specify the details of information to be collected;

(b) Appoint or designate officers authorised to collect information, prescribe the functions, duties and powers of such officers, and prescribe procedures for the exercise and carrying out of such functions, duties and powers of such officers, and prescribe procedures for the exercise and carrying out of such functions, duties and powers; and,

(c) Provide for all other contingent situations or make such provisions which in the opinion of His Majesty's Government would facilitate the collection of statistics to be collected pursuant to such order.

5. Power of the director General to require production of details

The Director General may by himself or through any other officer issue a written notification and inform to require any person to submit any information, details and statistics, in such format and within such time as may be specified in the notification.

6. Power to inspect records

The Director General, or any of the authorized officers working under his jurisdiction, or any officer exercising powers conferred by the Director General in writing pursuant to Section 5, may, either for the purpose of collection of statistics concerning anything that may be specified in the order issued pursuant to Section 3 or 4 or under the notification issued pursuant to Section 5 of for the purpose of ascertaining the veracity of schedules, particulars, detail or information collected pursuant to such order or notification take any of the following steps:-

(a) To enter, by giving prior information and within a reasonable time, in any land or house in the possession or control of any person under the duty to provide any information or detail;

(b) To order production before himself of any document or article in the possession or control of such person and to examine such document or article; and

(c) To ask any question to any person about whom he has reasonable ground to believe that he has information about any data to be collected pursuant to the provisions of this Act.

7. Power to demand for details:

The Director General may, by notification published in the Nepal Gazette, request persons of any class to submit before him such information or data in such format and within such time as may be specified in the above notification.

+7 A. Permission of Central Bureau of Statistics required to collect data

(1) Any government office, government owned such other organizations receiving government aid for this purpose or foreign national or any other institution desiring to collect any detail, information or data for professional purpose shall have to obtain permission from the Central Bureau of Statistics.

(2) Any person or organization, desiring to obtain permission for the purposes of collecting data under subsection (1), shall provide detailed informations to the Central Bureau of Statistics regarding the purpose of collection of data, the area in which the collection is to be made, the methodology for the collection of data and the programme for carrying out such activities.

(3) If the request to collect data pursuant to subsection (1) appears to be reasonable, the Central Bureau of Statistics shall give its permission. The Bureau may specify in its permission the methodology and other conditions deemed to be essential for such collection.

+ As inserted by the Statistics (Second Amendment) Act, 2030.

+7 B. Data to be authenticated before use or publication

(1) Any person organisation, having obtained permission pursuant to Section 7A to collect data, shall before making use of or publishing such data, cause them to be authenticated by the Central Bureau if Statistics.

(2) In case the Central Bureau of Statistics has to incur expenses in connection with the authentication of the data pursuant to subsection (1) above, the person or organisation which seeks such authenticity shall pay the cost to the Bureau.

(3) No statistical information shall be given to any foreign national or institution or international institution without the permission of the Central Bureau of Statistics.

8. Restriction on publication of information and details

(1) Any information or details relating to any person, family, firm or company, which has been supplied, obtained or prepared pursuant to section 3, section 4, section 5, section 6 ot section 7, or any part of such information or details, shall not be disclosed or published directly except to the Director General or to any officer of the Bureau without the written person or of his authorised representative supplying such information or details.

(2) For the purpose of instituting any suit under this Act, nothing mentioned in sub-section (1) shall be deemed to prevent production of such information before any court of law.

9. Punishment

(1) Any person, having the duty to supply information or details pursuant to section 3, section 4 or section 5 committing any of the following offences shall be liable to be punished with *fine up to two hundred rupees or imprisonment up to two months or both for each offence.

*(a) Deliberately withholding or refusing to supply information or details within the prescribed period;

(b) Deliberately giving or causing to give false information or details.

Provided that if any offence under this sub-section is committed by any company or any corporate organisation, except when it is proved that the crime was committed without their knowledge or that they had done their utmost to prevent such crime, the Director, Manager, Secretary or any other Officer or representative of such company shall be punishable with +fine up to three hundred rupees or with imprisonment up to three months or both.

(2) Any person obstructing the exercise of power of the Director General or any other officer authorised by him under section 6 to make entry into any house or land pursuant to clause (a) of the same section, or deliberately refusing to produce any document or article required to be produced pursuant to clause (b) of the same section, or refusing to answer any queries or deliberately giving false answers to inquiries made pursuant to clause (d) of the same section, shall be liable to be fined upto rupees one hundred or imprisonment upto one month or both.

+ As inserted by the Statistics (Second Amendment) Act, 2030.

* As amended by the Statistics (Amendment) Act, 2018.

*(2.A) Any person or organisation, who collects data without obtaining prior permission in accordance with section 7 A, or who collects the data against the methodology or the conditions stipulated while granting permission or who makes use of any data or published it without obtaining prior authentication pursuant to section 7 B. Before using or publishing them, shall be punishable with a fine upto five thousand rupees for each such offence.

Provided that if any offense is committed under this subsection by any corporate organisation, the punishment under this section shall be imposed on the General Manager, Manager of the chief of the organization except it is proved that the offence was committed without his knowledge.

(3) In case the Director General or any officer of the Bureau or any officer authorised under this Act commits any of the following offences he shall be liable to punishment for each such offence with a fine upto two hundred rupees or with imprisonment up to two months or both:-

(a) Has published any information or details or any part thereof in contravention of Section 8.

(b) Does not carry out or refuses to carry out any order issued in pursuant to this Act or the rules there under, or does not exercise due care or show promptness; or

(c) Has destroyed statistical records negligently, or deliberately or has caused damage to such record in any manner, or has fabricated or used in any other manner, so as to cause wrong results, or has used such record for his personal gains or unauthorised purpose.

(4) Any person who obtains information or details from any authorised officer or any officer of the Bureau in contravention of Section 8, shall be liable to punishment with fine upto two hundred rupees or with imprisonment upto two months or both.

Provided that if the information so obtained has been published as well, the punishment shall extend upto five hundred rupees as fine or imprisonment upto two months or both.

(5) Any person who induces the general public not to obey any order issued pursuant to this Act or not supply information or details lawfully demanded by any authorised officer, shall be liable to be punished with *fine upto five hundred rupees or imprisonment upto five months or both.

+10. Power to hear cases and appeals

(1) The Following officer or court shall have the power to try cases and impose penalty for the following offences:

(a) The Chief District Officer with regard to offences mentioned in sub-section (1), (2) and (5) of section 9.

(b) The Director General with regard to offenses mentioned in sub-section (2A) of section 9.

(c) The Zonal Court with regard to offences mentioned in subsection (3) and (4) of section 9.

* As amended by the Statistics (Amendment) Act, 2018.
+ As amended by the Statistics (Second Amendment) Act, 2030.

(2) No complaint for any offence punishable under this Act shall be filed without the prior approval of His Majesty's Government if it is against any officer of the gazetted rank and without prior approval of the Director General if it is against any employee working under the Central Bureau of Statistics.

+(3) Any decision made by the Chief District Officer or Director General pursuant to subsection (1) shall be appealable to the Regional Court.

***10.A Delegation of power**

His Majesty's Government may, with regard to any power vested in the Director General by clause (b) of sub-section (1) of section 10, delegate such power to any officer by a notification published in the Nepal Gazette.

+11. His Majesty's Government to be complainant

Offences to be tried under this Act shall be proceeded as state cases of His Majesty's Government.

12. Orders not open to challenge

No order given in pursuance of the power vested by this Act shall be challengeable in any court of law.

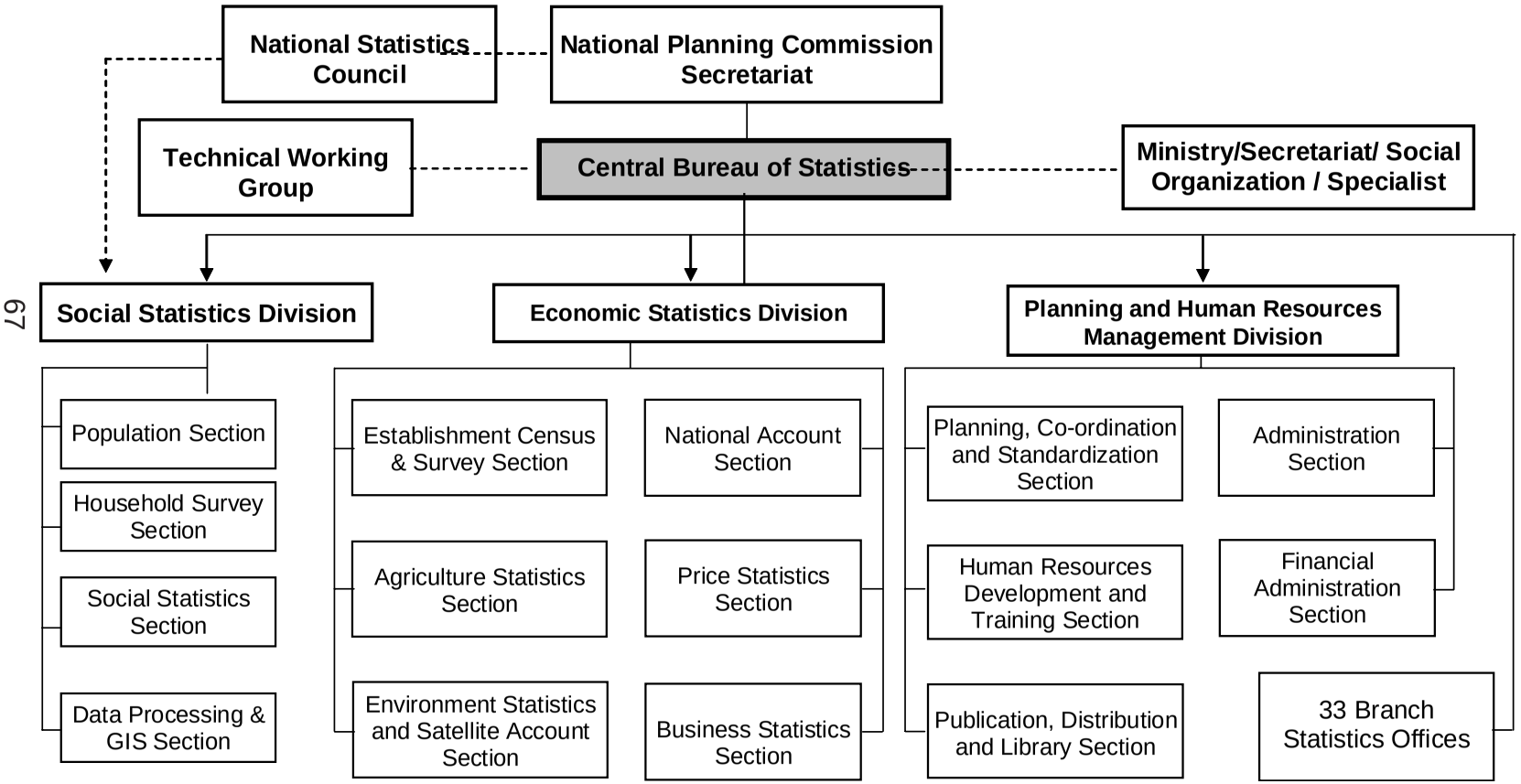
13. Power to frame rules

His Majesty's Government may frame rules to carry out the purpose of this Act.

14. Repeal

Census Act, 2013 has been repealed.

+ As amended by Judicial Administration Reform Act, 2031.
* As inserted by Statistics (Second Amendment) Act, 2030.
+ As amended by the Statistics (Second Amendment) Act, 2030.

Annex 2

Organization Chart of Central Bureau of Statistics