



METADATA FOR NATIONAL AGRICULTURAL STATISTICS

IRAN

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List of Acronyms

BSIT	Bureau of Statistics and Information Technology
FAO	Food and Agriculture Organization
GIS	Geographic Information System
GPS	Global Positioning System
LANs	Local Area Networks
OAS	Office for Agricultural Statistics
RDES	Regional Data Exchange System
SCI	Statistical Center of Iran
TPS	Transaction-Processing System

CHAPTER 1. NATIONAL SYSTEM OF AGRICULTURAL STATISTICS

1.1 Legal Framework and Statistical Advisory Bodies

The **Iran Statistical Center Act** provides for the following:

Article 2. Statistical Center of Iran (SCI) is affiliated with the Management and Planning Organization and is supervised by the Director of Management and Planning organization. Iran Statistical Center has the following authority and responsibilities:

- Conducting census and sample surveys on economic and social matters
- Preparing the statistics necessary for planning requirement and national development project targets'
- Design and updating of statistical frameworks
- Extraction, examination and publication of census data
- Preparation of national price indicators and calculation
- Preparation, definition and determination of statistical concepts, criteria and classifications
- Collection of necessary statistics from both public and private sector
- Preparation and publication of National Statistical Yearbook.
- Consolidation of statistical documents and information
- Provision of technical advice to statistical units within government ministries, agencies and corporation as well as private companies
- Providing statistical services for both public and private sectors on fee basis.

N.B. Any revenues generated from the statistical services is thus recognized as special revenue exclusive to Iran Statistical Center and is thus consolidated under a separate account held with the treasury. It can be spent in accordance with the budget plan approved by he director of the management and planning organization.

Article 4. National census will be conducted by [executive] order; manner of implementation will be decided by the Board of Ministers. General Census must be conducted every ten years and the first such census following the ratification of this bill will be conducted in 1976.

Article 5. All government ministries, agencies, companies and affiliates are obligated to provide Iran Statistical Center with the personnel, transportation, communications and other equipments required for general census for a specific duration and in a manner set out by the board of ministers

Article 6. In cases where government servants, whether active or retired, are employed for general census, Iran Statistical Center is authorized to pay them special census bonus for he duration of the census.

Article 7. Every person domiciled in Iran as well as the Iranian citizens residing abroad are required to truthfully answer to all questions within the censuses and surveys conducted by Iran Statistical Center.

All facts and figures collected from individuals and corporations in course of various surveys would be confidential and should be used only in preparation of general statistics. Use, subpoena or citation of data collected from individuals and companies, by judicial, administrative, taxation authorities or any such authorities, is strictly prohibited.

Article 8. Government Ministries, agencies, companies and affiliates are required to follow the statistical definitions, concepts, methods, criteria and classifications set out by Iran Statistical Center when carrying out their own surveys.

Article 9. Government Ministries, agencies, companies and affiliates are required to provide Iran Statistical Center with any statistical information that it requires.

*** Section E- Associative Document for the Bill of the Fourth 5-year Economical, Social and Cultural Development Plan**

- Making necessary arrangements for reform and streamlining of the structure of Iran Statistical Center as well as statistic and data units within the executive branch
- Setting out plans and policies for administrative bodies using and citing the official figures validated by Iran Statistical Center.

National Statistics Advisory Body

The National High Council of Statistics is responsible for providing advisory in statistics and its meetings area held every 3 months and in other cases in accordance with invitation of National High Council of Statistics. Its duties and member compositions are as follows:

- Determination of general policy governing national statistical programs and the distribution of statistical activities among the responsible organizations
- Setting the priorities for national statistics
- Determination of comprehensive policies for coordinating government ministries and agencies to utilize modern technologies.
- Provide comments about financing of statistical projects and activities by ministries, government agencies and affiliated bodies.
- Provide comment on the procedures and bills concerning statistics.
- The High Council of Statistics is headed by the Vice President and Director of Management and Planning Organization. Its membership is comprised of the following:

- Deputy Minister of Finance and Treasury
- Deputy Minister of Interior
- Deputy Minister of Agriculture Jihad
- Deputy Minister of Cooperatives
- Deputy Minister For Labor and Social Services
- Deputy Minister of Industries and Mines
- Deputy Minister of Commerce
- Deputy Minister of Health, Medical Services and Education
- Deputy Director of Management and Planning Organization
- Director of Iran Statistical Center who also serves as the council secretary.

1.2 Structure and Organization of the Major Agricultural Statistical Agencies

Office for Agricultural Statistics, Iran Statistical Center

The Statistical Center of Iran (Figure 1) is affiliated to the Management and Planning Organization. The Head of the SCI is Deputy Chief for the Organization. Considering stages of each statistical project, such as preparation of subject-matter design, preparation of technical design, implementation and data processing, the organizational system of the Centre comprises four Deputies:

- Deputy for Statistical Projects
- Deputy for National Accounts and Studies
- Deputy for Information Dissemination and Data Processing
- Deputy for Administrative Affairs and Logistics

Deputy for Statistical Projects

Study and recognition of Statistical requirements of the country, determination of priorities based on pressing needs for managerial staff and updating of Statistics on population, manpower, household expenditure and income, agriculture (farming, animal husbandry and fishery, etc.), manufacturing, mine and energy (electricity, gas and water, etc.) construction (residential and non-residential), communication (transportation, cargo, passenger and communication), trade and services, etc. are among major duties of this Deputy . Departments related to the deputy:

- General Department of Household Socio-Economic Statistics
- Department of Trade and Services Statistics
- Department of Industrial, Mineral and Environmental Statistics
- General Department of Agricultural Statistics
- Department of Infrastructural Statistics
- Department of Social Services and Cultural Statistics
- Department of Prices Indices

Deputy for National Accounts and Studies

Major duties of the Deputy include study of international recommendations on national accounts and their adjustments to the countries conditions with regard to national accounts system, study and recognition of statistical requirements on price indices , identification of sources of statistical production , collection of statistics produced and study on process of administrative records produced (registers) in executive organizations , preparation of statistical projects in different fields etc. Departments and Bureaus functioning under the Deputy:

- Bureau of Registers
- Bureau for Preparing of Technical Designs and Statistical Frames
- Bureau of Economic Accounts
- Department of Statistical Definitions and Standards

Deputy for Information Dissemination and Data Processing

Analysis, preparation and adjustment of electronic and non-electronic systems for subject-matter and statistical projects, coordination and comment on the designed systems, mechanization, correction and updating of statistical maps, preparation of subject-matter list for the varieties of codes, preparation of publication patterns, appropriate dissemination of statistical information, preparation and sale of publications and statistical yearbooks, giving necessary guidance to the visitors to the SCI to obtain their required statistical data , etc. are major duties of the Deputy . Related Departments are as follows:

- Bureau of Map-Related Affairs and Statistical Documents
- Bureau of Publications and Information Dissemination
- Bureau of System Designing
- Bureau of Network and Computer Services

Deputy for Administrative Affairs and Logistics

Major duties of the deputy consist of study and examination of staff training requirements, collection of the SCI credits on the basis of funds allocated by the Management of Planning Organization, supervision over related departments within the framework of rules and regulations, enforcement of administrative and employment regulation, preparation and issuance of all employment orders, preparation and provision of office supplies, registration and distribution of the letters received, etc. The departments under this Deputy are as follows:

- Department of Training and Management Services
- Department of Financial Affairs

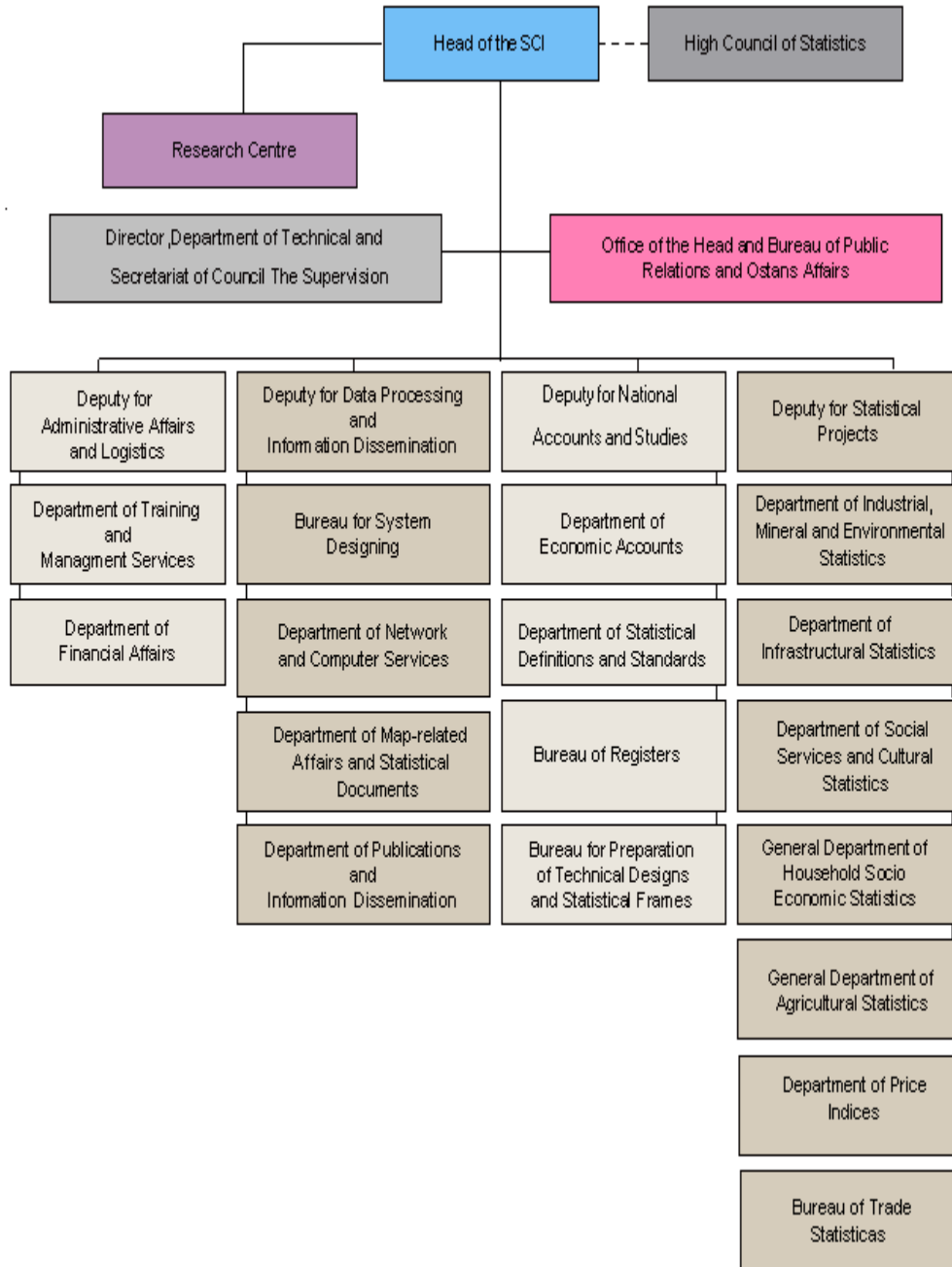


Figure 1. Office for Agricultural Statistics, Iran Statistical Center

Bureau of Statistics and Information Technology (BSIT), Ministry of Jihad-e-Agriculture (Figure 2)

Bureau of Statistics and Information Technology is one of the subdivisions of Deputy Planning and Economy, Ministry of Jihad-e-Agriculture which takes overall responsibility for information management of agricultural sector. In order to fulfill this purpose, creating and collecting, organizing and processing of statistics and information, analysis and interpretation of satellite data, establishment of required statistical information and computer systems, presenting computer services, and data processing, and creation of information network are on Bureau's agenda. Activities and services of this bureau are divided into the following four sections:

- Deputy of Statistics
- Deputy of Information Technology
- Remote Sensing Group
- Statistical Information Department

Deputy of Statistics

Statistical activities of this bureau include survey and recognition of the statistical requirements of different subdivisions, that is, design, formulation and execution of the required statistical projects, establishment of a system for registered statistics of Ministry and promotion of statistical knowledge among agricultural officials and holders. Main activities in this field are as follows:

Statistical Study and Surveys

- Surveying and recognizing statistical requirements
- Surveying the procedures and presenting optimum solutions to promote quality of produced statistics
- Research on using new statistical sampling methods

Planning and Formulation of Statistical Projects

- To study, survey and select required plans and projects
- To design, plan and specify statistical methods and provide typical and technical plans
- To analyze the collected data

Performing Fieldwork and Data Collection

- Determining required facilities and organization of statistical projects
- Preparing questionnaires and statistical sampling instructions, supervision, technical review, text editing and obtaining the results
- Supervising the execution of fieldwork and presenting the required solution during the execution of statistical projects

- Annual statistical data collection programs for wheat, barley, rice, and other crops are being implemented. Estimation of crops production cost is also implemented.

Design and Implementation of Required Systems for Registered Data

- Identification and classification of (registered) statistical requirements of all Ministry's subdivisions
- Customizing the methodology of design and implementation approach

Deputy of Information Technology

Activities in this section involve the following:

Computer Software & Hardware Services

These Services including information network establishment, creation of central database and presenting through internet, design & development of required computer systems, promoting informatics knowledge within the ministry, providing standards for applying information systems and giving services to the provincial jihad-e-Agriculture organizations and other sections.

Software Design and Services

- Analysis, design and implementation of software application.
- Consultation & supervision of selection and execution of software projects consultants.

Software and Hardware Support

- Updating agricultural databanks according to the results of agricultural projects.
- Providing technical services for designing, development and supporting and also implementation of programs and agricultural special databanks to organizations and different offices of the Ministry.
- Technical troubleshooting of computers
- Supervision over hardware equipments in the Ministry Local Area Network and also in the provinces, supervision over design and implementation of these networks.
- Hardware maintenance of local Area Networks, qualitative and quantitative upgrading of these networks.
- Management and maintenance of connection lines and channels of Local Area Networks and remote connections of provinces and internet connections.

Internet and Intranet Services

This bureau offers most of its services by relying on experts' technical knowledge and by using technology of communication era in order to provide appropriate methods to equip computer networks and communication systems and also to promote the scientific and technical information levels of colleagues within the Ministry. These services include:

- Local Area Network design and implementation within the Ministry's headquarter and related organizations.
- Wide Area Network connection establishment through leased lines and wireless modems.
- Sub-domain registration from agri-jahad.org
- Space allocation for web hosting.
- E-mail address allocation to internet users.
- Designing web-based applications

Remote Sensing and GIS Group

Remote sensing and Geographic Information System (GIS) unit of Bureau of Statistics and Information Technology (BSIT), Ministry of Jihad-e-Agriculture, Tehran, Iran is one of the premier institutions in Iran in the field of Remote Sensing and GIS technologies.

It was established in 1973 when Iran was known as the fourth country in the world having satellite ground station to receive satellite data.

This unit started its activities with small projects and used visual & digital interpretation of satellite images to generate land use/cover maps for different parts of Iran. In 1986, GIS activities of this unit were started.

As a result of technology advances, the experts in this unit used digital satellite data to extract different information from these data after getting enough training on different digital image processing software through joint projects with FAO and other international organizations.

The main objective of this unit is to provide timely statistical information for agricultural related subjects including crop acreage, crop maps, and land use/land cover through remote sensing and GIS and Global Positioning System (GPS) technologies.

In this regard, there have been a lot of efforts to get latest information for the agricultural status of different areas of the country through defining and implementing several projects. These led to complete a number of projects.

The main activities of this group include implementing several agricultural applied projects with the aim of producing land use/land cover maps, providing an estimation of area under cultivation for different crops, change detection studies for cultivated land/orchard land and development of provincial GIS. Some more detailed activities of this section are as follows:

- Producing land use/land cover maps for different provinces.
- Updating the existing maps using recent satellite data.
- Land use/land cover change detection studies.
- Estimation of area under cultivation using remotely sensed data.
- Development of crop forecasting system.
- Development of provincial GIS.
- Financial support and training to provincial organizations for initiating remote sensing and GIS activities.
- Cooperation with international organizations such as FAO&ITC.

Statistical Information Department

The other tasks of this bureau include processing, organizing and disseminating statistics and information related to agricultural sector (e.g. publication, CDs, brochures and databanks) to officials, researchers and international organizations. Here are some main activities of this department:

- Presenting agricultural data banks
- Extraction, processing and dissemination of statistical information in agriculture sector
- Providing and presenting statistical reports and publications
- Compiling agricultural newsletters in INTERNET
- Preparing and distribution of statistical and information brochures
- Providing library services on statistics and related fields
- Providing statistical information for international organization (e.g. FAO)
- Presenting statistical information through network, data bank and web applicable program

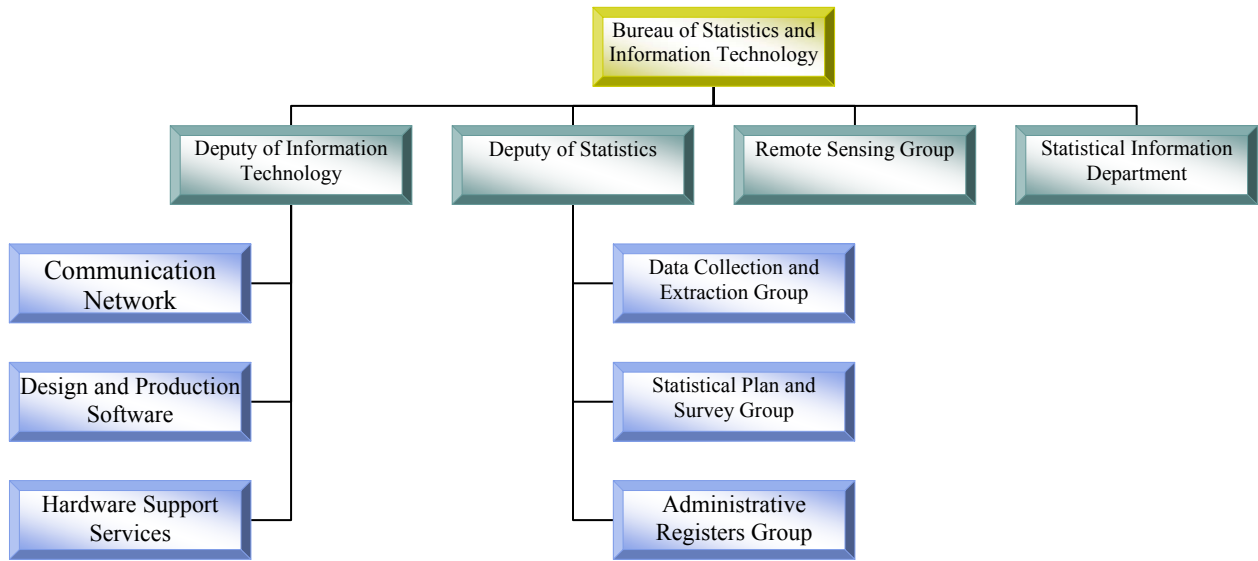


Figure 2. Bureau of Statistics and Information Technology (BSIT), Ministry of Jihad-e- Agriculture

BSIT is responsible for research and publishing of statistics pertaining to the agricultural sector. Furthermore, Office for Agricultural Statistics (OAS) at Iran Statistical Center also research and publish some of the needed statistics.

There is no overlapping of activities between two statistical agencies since the authorities and responsibilities of these agencies have been determined by Program for National Statistics.

1.3 Outputs and Dissemination of Agricultural Statistics

The contact information of the agencies are given below:

Office for Agricultural Statistics, Iran Statistical Center

Director: **Gholamali Kheiri**
 Telephone number: 0098 21 88964476
 E-mail: g_kheiri@sci.org.ir

Bureau of Statistics and Information Technology (BSIT), Ministry of Jihad-e- Agriculture

Director: Ebrahim Sarmadi
 Telephone number: 0098 21 88963025
 E-mail: e.sarmadi@agri-jahad.org

FAO Project GCP/RAS/184/JPN

Focal Point: **Babak Nazarzadeh**
 Telephone number: 0098 21 81362141
 E-mail: b.nazarzadeh@agri-jahad.org

Internet addresses of websites of national agricultural statistical database are as follows:

<http://www.sci.org.ir>
<http://www.maj.ir>

Dissemination of data through the Regional Data Exchange System (RDES) is for 16 tables as follows:

Rice	Potato	Cotton	Sheep
Wheat	Olive	Sugarcane	Goat
Maize	Tomato	Tea	Milk
Barley	Onion	Cattle	Egg

Moreover, tables of agricultural statistics of 2004-2005 are presented in the country page in RDES.

List of OAS Publications

Title of Publication	Format	Frequency	Release Calendar
<i>Directory of Poultry Breeder and Pullet Production Farms</i>	Book	occasionally	1999-2001
<i>Directory of Poultry and Chicken incubation facilities</i>	Book	occasionally	1999-2001
<i>National Statistics for Abattoirs</i>	Book	yearly	1999-2001
<i>Country Farms Statistics</i>	Book	occasionally	1973
<i>Poultry Broiler Farms statistics</i>	Book	yearly	1995
<i>Agricultural Services and Product Price Index in Rural Areas</i>	Book	yearly	1999
<i>Comprehensive Results of Agricultural Surveys</i>	Book	occasionally	1988
<i>Survey of Chicken Incubation Facilities</i>	Book	yearly	2000

Title of Publication	Format	Frequency	Release Calendar
<i>Survey of Poultry Breeder Farms</i>	Book	yearly	1999
<i>Survey of Poultry and Pullet Farms in Iran</i>	Book	occasionally	1999
<i>National Survey of Imported Frozen Meat Distributed</i>	Book	occasionally	2000
<i>General Agricultural Census</i>	Book	Every ten years	2003
<i>Comprehensive National Output</i>	Book	Every ten years	2003
<i>Directory of Flower and Decorative Plants Harvesting Unites</i>	Book	occasionally	1997
<i>Socioeconomic Survey of Migrant Tribes</i>	Book	occasionally	1987-1998
<i>Concepts and Methods in Environmental Statistics Technical Report on Human Habitat Statistics</i>	Book	occasionally	2000
<i>National Survey of Industrial Cattle Farms</i>	Book	occasionally	2000
<i>Environmental Impact of Industrial and Mining Activities: A Statistical Review</i>	Book	occasionally	1994-1998
<i>Survey of Edible Mushroom Cultivation Companies</i>	Book	occasionally	1980-2001
<i>Selected Results from General Agricultural Census</i>	Book	Every ten years	2003

List of BSIT Publications

Title of Publication	Format	Frequency	Release Calendar
<i>Agricultural Statistics Book, Vol. 1, (Agricultural and Horticultural Products)</i>	Book	yearly	1980-2005
<i>Agricultural Production Costs</i>	Book	yearly	1990-2005
<i>Agricultural Statistics Book, Vol. 2, (Agricultural and Horticultural Products, Livestock and Poultry, Fisheries and Aquaculture, Natural Resources, rural industries, tribal affairs)</i>	Book	yearly	2000-2005
<i>Iran and Global Agricultural Database</i>	Book	irregularly	1993/1997-1999/2003
<i>Statistical Review of Crops (wheat, barley, rice and corn)</i>	Book	irregularly	1995
<i>Statistical Review of Cereals and Colza</i>	Book ,CD	occasionally	1995-2000
<i>Horticultural Products (tea, pomegranate, citrus fruits, dates, olive)</i>	Book	occasionally	1998
<i>Agro Industrial Products (sugar beet, cotton, sunflower, sugar cane)</i>	Book	occasionally	1999
<i>Sampling Methods for Agricultural Surveys</i>	Book	occasionally	2000
<i>Surveying Industrial Cattle Farms</i>	Book	occasionally	2005
<i>Review of Spectral reflection of various agricultural products in Razan-va-Bahar region</i>	Book	occasionally	1998
<i>Review of the Impact of Topographical Factors in Determining the Area Under Cultivation (Tea Farms in Langrood Areas) Using Satellite Information and GIS</i>	Book	occasionally	1998
<i>Natural Geography of Hamedan Province (Ecological</i>	Book	occasionally	2001

Title of Publication	Format	Frequency	Release Calendar
<i>Studies, Seismic and Landslide Susceptibility)</i>			
<i>Estimation of Palm Date Plantation Area in Hormuzgan Province</i>	Book	occasionally	2001
<i>Hamedan Agricultural Geographic Information Management System</i>	Book	occasionally	2000
<i>Mapping the Environmental Application of Urumiyeh Lake Ecosystem</i>	Book	occasionally	2002
<i>Qum Agricultural GIS Management System</i>	Book	occasionally	2002
<i>Estimation of Palm Date Plantation Area in Fars Region Using Satellite Data</i>	Book	occasionally	2004
<i>Applications and land coverage Atlas for Mazendaran, Golestan and Isfahan (1:200000 and 1:100000 scale)</i>	Book	occasionally	1997
<i>Land Coverage and Zoning map for Mazendaran, Golestan, Isfahan and Gilan Provinces</i>	Book	occasionally	2002

1.4 Dialogue with Data Users and Cooperation with International Organizations

In the field of agricultural statistics, some projects are implemented in collaboration with FAO. These projects include RDES and the Agricultural Survey Improvement Program.

1.5 Strategic Framework

Following are among the strategic plans/actions of the country's statistical system:

- Coordinating and enhancing efficiency of statistical framework for improving statistical products,
- Conducting necessary plans for programme of producing statistics, comparability and accumulation of statistical data and improving the quality in results of statistical plans,
- Systemizing and implementing of registered data system with the aim to provide data for statistical databank in country,

- Systemizing statistical research program,
- Accelerating, facilitating and consolidation in process of producing, accumulating and information services of official data for programming, policy and decision makings,
- Investigation and presentation of executive methods for evolution of statistical culture, and
- Enhancing of international communication in the field of official statistics, statistical capacity building and enhancing of technical knowledge of experts.

CHAPTER 2. MAJOR DOMAINS AND SELECTED INDICATORS OF AGRICULTURAL STATISTICS

2.1 List of Major Domains and Selected Indicators

Domain	Statistics / Indicator
Production Crops	Volume of production, yield, area harvested
Horticultural products	Volume of production, yield
Flowers, decorative and medicinal plants	Volume of production
Livestock and poultry	Volume of production
Fishery and aquaculture	Volume of production
Agricultural machinery and implements	Agricultural machinery inventory
Supply of agricultural inputs	Volume of production of fertilizer Volume of production of pesticide
Health and medicine (veterinary medicine)	Performance of plan
Processed goods	Volume of production
Prices of protein supplies and inputs	Average price of one kilogram of livestock and poultry main products Average price of one kilogram of livestock and poultry feeds
Forests and rangelands	Areas of forests, pastures and deserts Forest production by regions By production of forests and pastures
Land administration	Performance of plan
Rural industries	Volume of production
Tribal affairs	Performance of plan
Agricultural Extension and asset management system	Performance of plan

Domain	Statistics / Indicator
Research and education	R & D
Rural cooperation	Present services

2.2 Metadata for the Major Domains

2.2.1 Concepts, Definitions and Classifications

Definitions and classifications used in statistical surveys comply with the standards set by Iran Statistical Center. Furthermore, in every statistical project the pertinent sub-sections are used for specialized terms and concepts.

Crops and Horticultural Products

In general the agricultural surveys conducted in this domain are aimed at providing statistics on the land area planted, production level, amount of inputs used, amount of seeds used, yield in area, harvesting levels, area lost or damaged and annual production costs. These data are broken down by plantation, harvesting, products values, operator's income (net profit) and consumable costs (fertilizer, pesticide, water, seeds, etc.).

These projects are carried out each year to furnish the information desired by the users. The sample population covers both rural as well as urban areas. The framework employed for selection of sample units are based on the data garnered from the general agricultural census. It uses the planted area for the desired crops as a factor at village level. The statistical units used in these surveys are village and holder.

Flowers, Decorative and Medicinal Plants

The statistical data are collected from all flower and plant distribution centers throughout the country at province and township level and disseminated once processed. Major areas covered include the production status of flower and decorative plants, edible mushrooms and medicinal plants and herbs.

Livestock and Poultry

The statistical data are collected from all livestock and poultry centers throughout the country at province and township level. These data are constantly monitored and reviewed before dissemination to the intended target audience. Major statistical data covered include:

- estimate on livestock population based on livestock type and holding unit

- state of poultry farms throughout Iran
- poultry production capacity for broilers, breeders, egg production
- status of apiaries throughout the country
- production of protein products broken down by type

Fishery and Aquaculture

All centers involved in breeding, preparation and production of fishery products throughout the country at province and township level supply the information according to certain definition, concepts and standards. Dissemination to target audience is made once the data are consolidated and reviewed. Major statistical data covered are as follows:

- number of vessels broken down by type of vessel operating from southern and northern coasts of Iran
- number, area and production level of fish and shrimp breeding farms
- production of marine creatures spawned in breeding centers broken down by type
- number of fish spawned for breeding and release
- number and capacity of fishing permits issued broken down by type of activity
- number of cooperatives
- number of fishermen and fishing vessels
- amount of fishing in caspian sea divided by species
- amount of fishing in the persian gulf and oman sea divided by species
- production level in inland waters
- caviar and meat taken from different types of sturgeons.
- consumption of fishery products
- number of workers in this sector
- amount of capital investment made in relevant sub-section
- value of exports and its amount broken down by product type
- number of fishery industries and their capacities
- average commercial and retail price for products

Agricultural Machinery and Implements

The statistical data in this area is prepared by collecting data from all mechanization development offices throughout the country at province and township level. Once consolidated and reviewed this data is disseminated among the users. The data collected in this area are as follows:

- agricultural machinery inventory
- state of production, distribution and sales of tractors and harvesters
- all types of autonomous agricultural machineries supplied domestically
- state of mechanized agricultural services offered and project report on the mechanized agricultural service firms

Supply of Agricultural Inputs

The statistical data in this area is prepared by collecting data from all Agricultural Services companies throughout the country at province and township level. Once consolidated and reviewed this data is disseminated among the users. The data collected in this area are as follows:

- distribution level of micro and macro fertilizers as well as chemical pesticides and herbicides
- types of seeds and saplings
- production level of seedlings
- level of import and domestic production of chemical fertilizers
- level of import and domestic production and distribution of all chemical pesticides
- amount of seeds purchased

Health and Medicine (Veterinary medicine)

The data are collected from veterinary general offices throughout the country at province and township level. Statistics are released once consolidated and reviewed. The data covers the following topics:

- performance in fighting and control of various animal diseases such as brucellosis, tuberculosis, rabidness, glander, parasite disease including fmd, cow plague, cow pax, anthrax and small ruminants plague.
- livestock inoculations
- poultry diseases control
- amount of subsidized medicine distributed among apiary farms
- health performance status in aquaculture farms
- number of poultry slaughtered and requisitioned
- amount of livestock slaughtered
- health control and monitoring of livestock products manufacture, distribution, storage and distribution
- clinical activities and active clinics

Processed Goods

These data are gathered from all units affiliated with the Dairy Industries Corporation throughout the country at province and township level. These include:

- milk and other dairy goods production level
- status of dairy industries corporation subsidiaries
- amount of milk purchased from dairy farms by dairy industries corporation subsidiaries

Prices of Protein Supplies and Inputs

Livestock Affairs Support Company collects the pertinent data throughout the country at province and township level. Statistics are released once consolidated and reviewed. These data is disseminated among the user. The data covers the following topics:

- average price for a kilogram of major livestock and poultry products
- average price for a kilogram of feedstock for poultry and livestock
- average free market price for some of the products
- price of milk and meat market
- status of fodder storage bunkers/silos

Forests and Rangelands

The statistical data in this field are collected through collaboration with all general offices for Natural resources and watershed management throughout the country at province and township level. These data is disseminated among the user. Major statistical data prepared are as follows:

- forest, rangeland and desert areas
- production level of forest products
- forest and rangeland by-products
- area of national resource and government lands granted
- performance of plans for design and implementation of combating desertification projects
- dune stabilization
- rangeland management and managing the herd/graze land balance
- rangeland improvement and development
- silva culture and restoration of Northern Forests
- preparation of comprehensive plans for North Forest regions and implementation of development operation
- organization of moving livestock out of forests
- protection and development of Northern Forests
- protection and development of Zagros Forests
- forestry resource management and planning
- restoration and enrichment
- forestry and maintenance and control of forest parks
- construction of forest routes
- monitoring the commercial development of forests in northern iran
- land audit and demarcation of enclaves
- forestry and rangeland pest and plant disease control, protection and conservation
- Tuba Project including hand planting of trees such as walnut and olive
- watershed management

Land Administration

Pertinent regional land administration offices throughout the country at province and township level are responsible for providing the data needed for development of statistics. These data is disseminated among the user. The data includes:

- performance in identification and acquiring title to the land
- land surveys
- national land capacity identification
- land grants awarded to cooperatives, economic projects and individuals
- village zoning
- resolving the issue of unclaimed lands that were the subject of the bill passed by the Council of Expediency
- Tuba Project
- Tuba Project (including hand planting of trees such as walnut and olive) land grants and revenues generated thereof.

Rural Industries

Administrative units in charge of agricultural rural industries throughout the country at province and township level provide the necessary data. The data is consolidated and constantly monitored and disseminated among the user. These include:

- Number and extent of process and post-process industries for orchard, crop, fishery, livestock and poultry products.
- Number, extent of capitalization and employment for the licenses issued sorted by process industrial group
- Number, extent of capitalization and employment for the manufacturing units sorted by process industrial group
- Status of rural industrial zones under construction or launched

Tribal Affairs

Data collected from general offices of tribal affairs throughout the country at province and township level are consolidated, reviewed and constantly monitored before being released. Main data include: Status of tribes throughout Iran, Number of family housed who enjoy fossil fuels, performance of the projects dealing with housing, Comprehensive study of tribal areas, substitution of traditional firewood with fossil fuels and provision of logistical services to nomadic tribes.

Agricultural Extension and Asset Management System

Data is collected as before through pertinent administrative units responsible for agricultural extension and asset management system throughout the country at province and township level. These are consolidated, processed and reviewed before being released to their intended clients. They provide statistics on:

- educational, cultural and extension capacities
- enrolment of construction soldiers as an alternative to conscription
- performance of informal extension education and skill training
- performance of agricultural extension and asset management system
- performance of youth mobilization or *Basij* in construction
- performance of rural manufacturing cooperatives
- planted area and performance of some of the crops cultivated by rural manufacturing cooperatives
- general characteristics of companies and Rural Manufacturing Cooperatives Unions.
- performance of training projects in villages
- training of rural women and development of cottage employment

Research and Education

All agricultural research centers as well as agricultural education campuses contribute to the data collection effort throughout the country at province and township level. The data collected is indicative of the following:

- performance in agricultural research and education
- number of educational centers sorted by activities
- number of research centers sorted by area of research
- status of Agricultural Education Centers
- number of graduates of long-term training program offered at Higher Education institute and the number of new research projects approved including dissertations

Rural Cooperation

Data are collected at province and town level by general offices of rural cooperatives. Major areas covered include:

- general particulars of agricultural as well as rural cooperatives within a province
- women rural cooperative companies
- township rural cooperatives unions
- rural cooperatives State Unions and Agricultural cooperatives Unions
- state of guaranteed purchase and sales of agricultural goods by rural cooperatives
- state of non-guaranteed purchase and sale of agricultural goods by rural cooperatives
- poultry activities conducted within the network of rural cooperatives
- evaluation of activities of milk collection centers affiliated with such cooperatives
- service status pertaining to agricultural machinery and mechanical units

- performance of the said cooperatives and unions in distribution of agricultural machineries and spare parts.
- performance of agricultural machinery and mechanical units
- supply and distribution of agricultural inputs by network of rural cooperatives.

2.2.2 Coverage, Availability, Data Sources and Responsible Agencies

Statistics/ Indicators	Domain	Coverage	Available Data Series	Data Source
Volume of production	Crops and horticultural products	national	1979 to 2005	Sample survey
Volume of production	Survey of annual crops production costs	national	1979 to 2005	Sample survey
Performance of plan	Soil and water	national	2000 to 2005	Expert estimation
Number of supply, distribution and sales	Agricultural machinery and implements	national	2000 to 2005	Expert estimation
Volume of distribution and imports	Supply of agricultural inputs	national	2000 to 2005	Expert estimation
Performance of plan	Fighting pests and diseases	national	2000 to 2005	Expert estimation
Volume of production	Flowers, decorative and medicinal plants	national	2000 to 2005	Expert estimation
Volume of production	Livestock and poultry	national	2000 to 2005	Expert estimation
Volume of production	Fishery and aquaculture	national	2000 to 2005	Expert estimation
Performance of plan	Health and medicine (Veterinary medicine)	national	2000 to 2005	Expert estimation
Volume of production	Processed goods	national	2000 to 2005	Expert estimation
Average prices	Price of	national	2000 to	Expert

Statistics/ Indicators	Domain	Coverage	Available Data Series	Data Source
	protein supplies and inputs		2005	estimation
Performance of plan	Forests and rangelands	national	2000 to 2005	Expert estimation
Performance of plan	Land administration	national	2000 to 2005	Expert estimation
Volume of production	Rural industries	national	2000 to 2005	Expert estimation
Performance of plan	Tribal affairs	national	2000 to 2005	Expert estimation
Performance of plan	Agricultural Extension and asset management system	national	2000 to 2005	Expert estimation
R&D	Research and education	national	2000 to 2005	Expert estimation
Present services	Rural cooperation	national	2000 to 2005	Expert estimation

2.2.3 Data Processing, Estimation and Revision Methodology

Remote Sensing & GIS Applications in the Field of Agriculture in Iran

Brief Description About Activities of the Remote Sensing & GIS

1. Preparation of land use/land cover map for different provinces using satellite data

- Preparation of land use/land cover maps of MAZANDARAN province based on visual & Digital interpretation of satellite TM data and GIS, GPS techniques, scale 1: 100000.
- Preparation of Land use/Land cover maps of ISFAHAN province based on visual an digital interpretation of satellite TM data and GIS, GPS techniques, scale 1: 100000
- Preparation of Land use/Land cover maps of MARKAZI province based on visual & digital interpretation of satellite TM & IRS data and GIS techniques, scale 1: 100000
- Preparation of Land use/Land cover maps of QOM province based on visual & digital interpretation of satellite TM IRS data and GIS techniques, scale 1: 100000

- Preparation of Land use/Land cover maps of GOLESTAN province based on visual & digital interpretation of satellite TM data and GIS techniques, scale 1: 100000
- Preparation of Land use/Land cover maps of HAMADAN province based on visual & digital interpretation of satellite TM data and GIS techniques, scale 1: 100000
- Preparation of Land use/Land cover maps of GILAN province based on visual & digital interpretation of satellite TM data and GIS techniques, scale 1: 100000
- Preparation of Land use/Land cover maps of HORMOZGAN province based on visual & digital interpretation of satellite TM data and GIS techniques scale 1: 100000
- Preparation of Land use/Land cover maps of ZANJAN province based on visual & digital interpretation of satellite ETM data, scale 1: 1 00000

2. Area estimation using remote sensing data

- Date palm area estimation in BUSHEHR province using ETM digital data.
- Flooded area estimation in GOLESTAN province using satellite data.
- Pistachio area estimation in KERMAN province using remotely sensed data.
- Crop area estimation using AFS method for HAMADAN province.
- Evaluation of different classification algorithms for area estimation using remote sensing data in MARKAZI province.
- Orchard area estimation using satellite TM data & GIS and GPS techniques for HAMADAN province.
- Rice paddy area estimation using remote sensing & GIS and GPS techniques for AMOL & BABOL Township, MAZANDARAN province.
- Date palm area estimation using satellite TM digital data & GIS, GPS techniques in KHOZESTAN province.
- Date palm area estimation using satellite TM digital data & GIS, GPS techniques in HORMOZGAN province.
- Date palm area estimation in KERMAN province using ETM data.
- Pistachio Area estimation in SEMNAN province using ETM data.

Methodologies

For making land use/ cover maps which are used to extract statistical information, a framework was defined. This framework includes, as first step, the definition of a legend in which most of the interested categories are appeared. In second step, based on the scale of the final maps and type of interpretation (digital or visual), satellite data are purchased and a first visit to sites is conducted to get familiar to the categories on the land. After interpretation is done, a mid term field check is conducted to correct any interpretation errors and then a final field check is conducted to check the accuracy of the interpretation. Statistics could be easily extracted from outputs of this work.

A common procedure is followed for extracting statistical information on the areas of different crops.

This includes purchasing satellite data, preparing them for interpretation (mostly digital), initial visit to the sites, geometric correction of images, pre-classification of satellite data, design and selection of samples, collection of information about samples, final classification, final field check and classification accuracy assessment based on error matrix and Kappa coefficient.

To develop a local GIS, initially, all the needs of the local users are studied. Based on this study, necessary user's information are defined and collected. After preparing, organizing and making link between data, subsystems and applications are developed using Arcview avenue script language. Programming and executing applications are done and subsystems are tested and finalized. A documentation and manual is then given to actual users.

Departments of Ministry of Jihad-e-Agriculture that have been Involved in Application of Remote Sensing and GIS Technologies

- Bureau of Statistics & Information Technology (Remote Sensing & GIS Group)
- Agricultural Planning & Economic Research Institute
- Research & Engineering Office of Forest & Range land Organization
- Bureau of Planning & Coordinating of Watershed Management Deputy
- Soil & Water Research Institute

CHAPTER 3. MAJOR DATA SOURCES FOR AGRICULTURAL STATISTICS

3.1 List of Major Agricultural Censuses, Surveys and Registers

Censuses

- 1993 General Agricultural Census
- 2003 General Agricultural Census
- Census of Poultry Breeder Line Companies
- Census of Poultry Breeder Farming

Surveys

- Survey of Wheat and Barley Survey Project
- Survey of Rice Output in Rice Producing Provinces
- Survey of other Agricultural Products
- Survey of Agricultural Products (2000-2005)
- Survey of Flowers and Decorative Plants production holdings
- Sample Survey of Broiler Poultry Farms in Iran
- Surveying of Chicken Incubation Facilities
- Surveying Industrial Cattle Farm
- Survey of Livestock Slaughtered in Slaughterhouses
- Surveying of Edible Mushroom Cultivation Companies

3.2 Metadata for Major Censuses

3.2.1 1993 General Agricultural Census and 2003 General Agricultural Census

3.2.1.1 Overview

Historical Background

Iran Agricultural Census is periodically conducted as decennial program. The first national census of agriculture was conducted in 1960 on a sample enumeration basis.

The general census of agriculture 2003 was the latest census carried out in Iran. The first was conducted in 1973, the second in 1988 and the third in 1993. The censuses provide precise data and information on the structural aspects of agricultural holdings.

By definition, agricultural holding had been the main statistical unit and agricultural holder and village were two other statistical units used.

Objectives

The objectives of the Agricultural Censuses are:

- to provide a frame for other agricultural sample surveys;
- to provide statistics for small administrative divisions such as villages; and
- to provide data for comprehensive and multidimensional classification of the structural features of agricultural units within 30 days.

3.2.1.2 Census Design

Frame: A list of agricultural holdings, which was prepared at the beginning of the fieldwork

Sampling Design: Complete enumeration

Reference Period / Date of Data Collection

The reference period of some census items refer to date of enumeration, while some others refer to previous calendar year. The 1993 agricultural census was conducted during the period of 17 October to 21 November 1993. The 2003 agricultural census was conducted during 27 September to 26 October 2003.

Coverage

The agricultural census covered all agricultural sectors in rural and urban areas of entire country, except forestry and pastures.

3.2.1.3 Conduct, Operations, Data Quality Control

Census and Some of its Features

General Agricultural Census in Iran complied with the accepted norms of international organization and had been based on foundations detailed below:

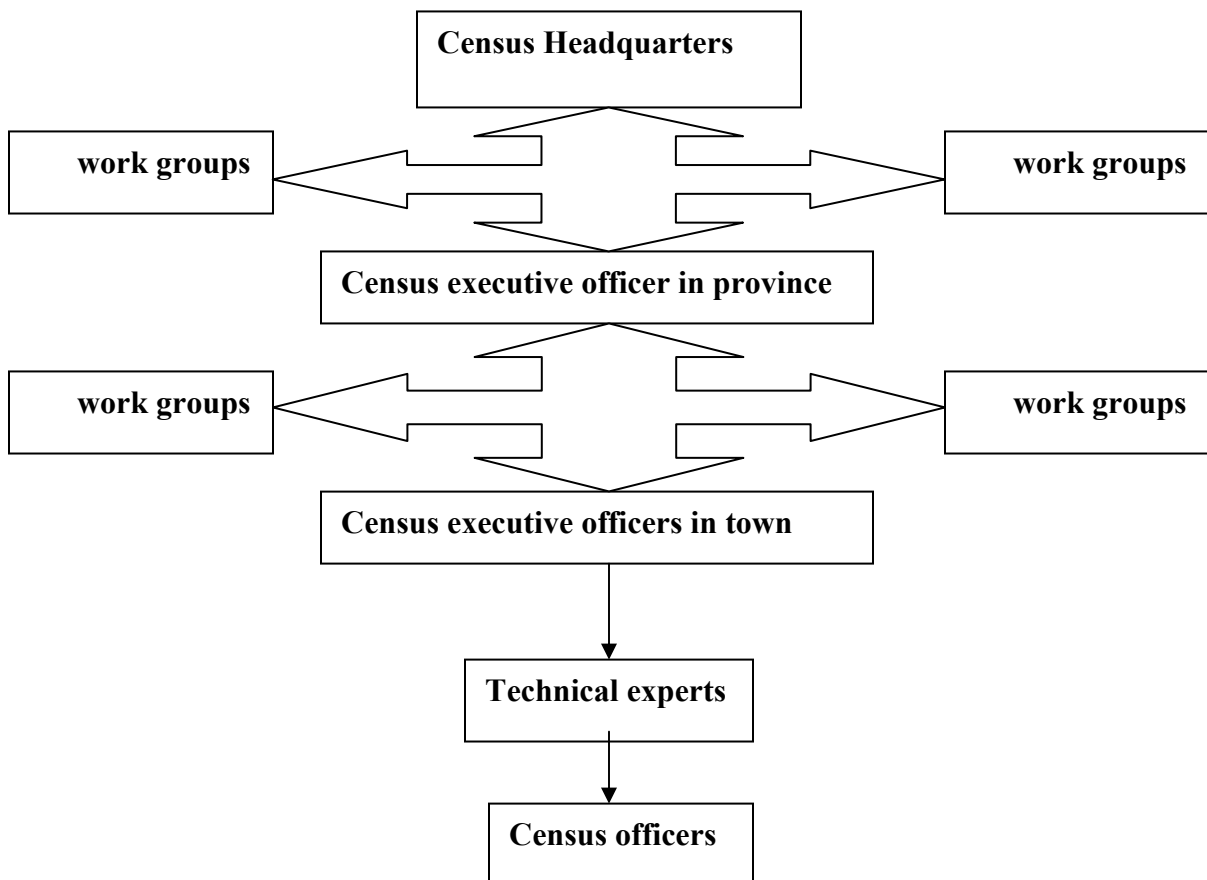
- The basis of data acquisition had been direct interview with the holder and completion of a questionnaire. In cases when the holder was not available, other individuals who were somehow related to the holder were used
- Data, whose enumeration unit had been “village”, were collected during interview with village elders and authorities.
- List of stakeholders in inhabited rural areas and most of the towns were collected by direct house calls using a questionnaire. Due to the town

area and low ratio of agricultural activities, in 108 selected towns the data were collected by calling on administrative resources, registries and local sources using operational research method by Jihad-e-Agriculture.

- Due to the very nature of the job, the information presented are accompanied to some extent with uncontrollable statistical errors. Such errors are more significant in some smaller geographical levels.
- Interviewers were often drawn from young people seeking employment. They were selected from among high school graduates and those who had studied agricultural science. They were supervised by staff from Jihad-e-Agriculture offices or local offices of management and budget organization within a province.

Following the data entry, untrue and erroneous data were reviewed by experts drawn from Jihad-e-Agriculture administrative and planning organizations in provinces. When necessary, given the existing evidences and indicators, these data were amended in accordance with a technical guideline.

Organogram for Agricultural Census



3.2.1.4 Statistical Reports

Selected Results of Agricultural Census

- 1- Agricultural holdings sorted by province
- 2- Agricultural holders sorted by level of literacy and educational degree as well as age group in each province
- 3- Agricultural holdings engaged in any range of agricultural activities sorted by province
- 4- Planted area in each province divided by irrigated and rainfed
- 5- Planted area of orchard in each province divided by irrigated and rainfed
- 6- Planted area and annual production level of selected items in open air agricultural holdings, sorted by product name
- 7- Level of production of selected permanent goods in open air agricultural holdings based on product name and province
- 8- Greenhouse area and production of some greenhouse goods in agricultural holdings sorted by province
- 9- Number of livestock types in holdings on the basis of province
- 10- Volume of milk yield based on livestock and province

3.3.2. Other Censuses

Title of Census	Statistical Unit	Main Data Items / Variables	Reference Period	Coverage
Census of Poultry Breeder line companies	holder	production	1999	national level
Census of poultry breeder farming	holder	production	1999	national level

3.3 Metadata for Major Surveys

3.3.1 Overview

Current and Sampled Survey

As the most important producer of official statistics in the country as well as the secretariat for High Council of Statistics, Iran Statistical Center is required by article 56 of the Bill of the Fourth Economic, Social and Cultural Development Plan to have the task of preparing and compiling a program for national statistics on its agenda. To this end, Iran Statistical Center has divided statistical activities into 9 programs and assigned each to a work group. The Planning Commission is comprised of the work group leaders, representatives of major agencies generating statistics and Management and Planning Organization. Once the commission programs have been confirmed in expert sub-committees, they are put on High Council of Statistics agenda for final approval.

Current agricultural survey projects that are used for generating statistics for agricultural products are assigned to administrative agencies following the programs set out in the national statistical document.

The general aims of these projects are to estimate the planted area, production yield, performance analysis and assessment of damages. Survey of Horticultural products is currently on the agenda of the Ministry of Jihad-e-Agricultural for the year 2007.

Survey of Annual Crops Production Costs

The survey aimed to estimate the average cost of production for one hectare of cropping per year broken down by various stages of planting, growing and harvesting. It also aimed to estimate the production cost per kilogram of crops. This survey covered all crops in the country.

3.3.2 Survey Design

Survey of Annual Crops Production Costs

This survey employs a two-stage sampling design where the sample village is the primary sampling unit and the sample operators serve as the secondary sampling units.

Crops and Horticultural Products

The projects employ two-staged sampling where the village is determined as a statistical unit using Daelinus method. The population surveyed is divided into sub-

divisions. Considering an acceptable five percent error, the number of villages in the sample is then determined. The samples are determined in each class using the optimum allocation method,

In order to select the sample units during the second stage, the sample villages are listed using spot checks so that the holder living in the villages could be identified. At the end, non-resident beneficiaries are also listed. Finally, the sample holders are chosen systematically.

Other surveys

Title of Survey/Census / Statistical Activity	Sampling Design / Statistical Unit; Selection Procedure	Main Data Items/Variables	Reference Period	Coverage
Survey of Agricultural Products (2000-2005)	village / holder	area and production of crops and horticulture	2000-2005	village level
Survey of Flowers and Decorative Plants Production Holdings	village / holder	area and production	1997	village level
Sample Survey of Broiler Poultry Farms in Iran	holder	production	1999	national level
Surveying of Chicken Incubation Facilities	holder	production	2000	national level
Surveying Industrial Cattle Farm	holder	production	2000	national level
Survey of Livestock Slaughtered in Slaughterhouses	holder	production	1999	sub-national level
Surveying of Edible Mushroom Cultivation Companies	holder	number of companies & production	2001	sub-national level

3.3.3 Conduct, Operations, Data Quality Control

The Ministry of Jihad-e-Agricultural is currently conducting three sampled survey projects in each province:

1. Survey of Wheat and Barley Survey Project
2. Survey of Rice Output in Rice Producing Provinces
3. Survey of Other Agricultural Products (*the project reorganizes its activities every year*)

These surveys are prepared and assigned by the BSIT. In the end, the statistical units based within the local agricultural agencies and centers for agricultural extension and services serve as the lowest organizational ranks in generating statistics. They are considered the executive arms for statistical surveys within the ministry of Jihad-e-Agricultural.

Upon determining the requirements and priorities in the implementation of appropriate surveys, the general frameworks based on agricultural census are outlined and produced. Next, the questionnaire for each phase of activity is devised. Then training seminars are set up around the country. Survey officers, who are agricultural experts, are enrolled in the said seminars. They become familiar with the frameworks and in filling up the questionnaire.

In surveying agricultural and horticultural products, planning should be such that the officers are dispatched to the farms at the end of the harvesting season. In course of the questionnaires being completed and data extracted, BSIT and Iran Statistical Center constantly monitor the best practice on national level using province supervisors.

3.4 Metadata for Each of the Major Administrative Registers

Statistical standards, statistical research, manpower, survey quality, statistical culture, generating statistics, an IT base and national database are among the planned strategic and administrative measures assigned to ministries who are major producers of statistics. These set of requirements have been approved by the cabinet and incorporated in the paragraph of the document merging overall development documents pertaining to the fourth development plan of the Islamic Republic of Iran. In 2005, Iran Statistical Center had initiated measures to implement the national statistical program with cooperation of administrative agencies that generated statistics. This method is based on Transaction-Processing System (TPS). Under TPS, collection, storage and processing of data generated through interactions within an organization are based on the following items:

- basic systems based on activities within an organization

- daily transactions within the performance boundary of each unit would finally result in generation of administrative statistical data

This system with base of primary definitions and fundamental concepts besides implementation of studying projects focused on data and operation 1995 till 1999 and carried out by focusing on statistical items.

By focusing on TPS information systems, extraction of statistics from systems, identification of organization sphere of operation, recognition, analysis and design of administrative registry records systems, comprehensive analysis, design and implementation of administrative registry coupled with instilling of the necessary culture and provision of training by Iran Statistical center, the system is currently being carried out on a pilot scale in administrative agencies. Monitoring the sound implementation of the project for organizing the administrative registry system within administrative agencies is as follows:

According to article 6 of the national statistics program, the administrative agencies are required to set up at least two TPS systems by the end of the fourth National Development Plan. Furthermore given Article 5, section E as well as Article 11th of the said plan, implementation of various stages of statistical projects as well as organization of the administrative registry information of executive agencies and exchange of letter of agreement and allocation of funds for these projects, would be carried out within the framework of supervisory procedure that will be approved by High Council of Statistics.

The manner of supervising organization includes stages, activities and responsibilities pertaining to implementation of the project for organizing the administrative registry system, which in turn would coordinate the workflow among the agents in various agencies.

Supervising the Projects Pertaining to the System of Administrative Registries

The project has two phases:

Phase One: Identification, analysis and general design of administrative registry system. The outcome of this phase is preparation of an RFP for the proposed systems for the target organization that would be implemented during phase two.

Phase Two: Design, implementation and set up of proposed systems for administrative registry identified earlier in phase one.

The methodology governing the process automation of administrative registry comprising of operational definition, design and implementation is carried out as follows:

- 1- Identifying the present state
- 2- Analysis and general design
- 3- Detailed identification
- 4- Detailed analysis
- 5- Detailed design
- 6- Implementation
- 7- Documentation
- 8- System training and handover

Activities to Date

- Setup of process monitoring system for raw animal products at National Veterinary Organization
- Setup of process system for issuing license for establishing and holding process industries within the Directorate of Development and Rural Industries
- Setup of process system for issuing operating license within Directorate of live stocks
- Setup of process system for issuing fishing permits within Iran Fisheries Organization