



Improving and using administrative data in agricultural statistics

**Achieving quality and better use of administrative data
for informed decision-making**



What is agricultural administrative data?

Administrative data refers to information collected primarily for administrative (not statistical) purposes by government departments and other organizations, usually during the delivery of a service or for the purposes of registration, record-keeping or documentation of a transaction.

Agricultural administrative data refers to administrative data can be used to produce agricultural statistics, that is, statistics on the economic, social and environmental domains of agriculture.

IN THE AGRICULTURAL AND RURAL CONTEXT, THERE ARE TWO CLASSES OF ADMINISTRATIVE DATA:



TRADITIONAL ADMINISTRATIVE DATA

These data are measurements of well-defined farm entities, and arise naturally through participation in any government or private programme.

Examples include information collected through taxation, regulatory processes (that is, farm inspections), farm assistance programs (subsidies and insurance) and monitoring programs.



ADMINISTRATIVE REPORTING SYSTEMS FOR AGRICULTURE

These data are normally based on observation or expert judgement, often administered through the Ministry in charge of agriculture, livestock, forestry and fisheries on a regular basis. Thus, an extension officer (in delivering assistance services to producers), village chief or another agricultural field officer makes a determination based on his or her observations and expertise, and routinely produces a report on the agricultural sector.

Why using administrative data in Agricultural Statistics?

Benefits of administrative data

Cost savings

- Data collection costs are reduced, as the cost of producing these data is already absorbed by the administrative process they serve
- Costs associated with the acquisition and maintenance of administrative data are lower than those incurred in conducting traditional surveys or censuses

Improvements in the efficiency of macro-level estimators

- The efficiency of estimators at higher levels of aggregation may be improved even if information at the microdata level is sparse or difficult to obtain
- Administrative data produced at regular time intervals can improve the consistency of published time series

Small-area statistics

- This data can be used to improve small-area estimates and expand the level of detail in published reports

Timeliness

- Administrative data are often updated more frequently than surveys or censuses

Improvements in the quality of microdata

- The accuracy and completeness of the resulting microdata are increased

Improve data coverage

- They allow for the collection of information on populations that is not necessarily covered by surveys or censuses
- They can enhance the content of existing data sets

Reduced respondent burden

- Respondent burden and non-response rates are reduced



Information obtained from administrative data can contribute in many ways to the improvement of public policy, in areas such as food security, poverty, environment, health and economic development.

What are the uses of agricultural administrative data?

Agricultural administrative data are naturally collected for non-statistical purposes. However, they can be used as a final statistical product and in forming and improving statistical products.

Examples of indirect and direct uses of agricultural administrative data

USE AS A FINAL PRODUCT (DIRECT USE)

- ▶ Direct tabulation
- ▶ Crop forecasting
- ▶ Policy formulation implementation and monitoring
- ▶ Supporting investment decisions
- ▶ Food security planning and monitoring
- ▶ Providing information to users
- ▶ Measuring progress of international agreements and goals
- ▶ Attainment of efficient markets

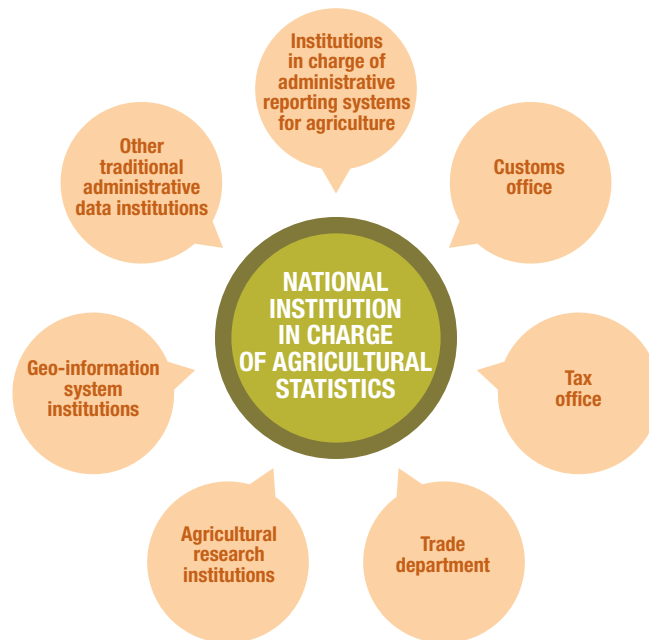
FORMING THE STATISTICAL PRODUCT (INDIRECT USE)

- ▶ Frame construction/improvement
- ▶ Survey design
- ▶ Model-assisted calibration estimators
- ▶ Nonresponse adjustments and Imputation
- ▶ Measuring error modelling
- ▶ Small-area estimation
- ▶ Cut-off surveys
- ▶ Assisting data collection for surveys and censuses

Designing an Administrative Data System for Agricultural Statistics (ADSAS)

An **Administrative Data System for Agricultural Statistics (ADSAS)** is defined by all administrative institutions producing agricultural administrative data that may be used for the purposes of agricultural statistics, and providing them to the national institution(s) in charge of agricultural statistics, for official publication.

EXAMPLES OF INSTITUTIONS THAT CONTRIBUTE TO AN ADSAS



Depending on the statistical system of the country, the national institution in charge of agricultural statistics for official publication might be:

- a national statistics office or a line ministry.

To increase the use of administrative data for agricultural statistics, the establishment of an effective ADSAS is essential.



Designing an ADSAS

Step 1. Identify agricultural administrative data sources

Where can agricultural administrative data be found?

In most developing countries, basic agricultural administrative data (on crops, livestock, fisheries and forestry) are collected and managed under the ministries of agriculture, livestock, fisheries or forestry. Parastatal organizations and private-sector agencies also collect some of these data.

The sources include:

- Regular returns or reports by agricultural field or extension staff (for various agricultural items including crops and livestock)
- Farm registers and other registration or licensing systems
- Lists maintained by farmers' associations
- Lists of agricultural production and inputs from manufacturers and distributors
- Land ownership records
- Traceability data, such as traceability livestock data
- Information on government subsidies
- Tax data
- Private businesses' data
- Records on agro-tourism
- Import/export data
- Meteorological data

National ADSAS can be developed in the following steps:

Step 1. Compile an inventory of agricultural administrative data sources.

Step 2. Link agricultural administrative data sources to core data items.

Step 3. Assess the quality of the data produced.

Step 4. Improve the quality and accessibility of agricultural administrative data.

Designing an ADSAS

Step 2. Link agricultural administrative data sources to core data items

Mapping administrative data available for agricultural statistics purposes to priority national agricultural data needs will allow the ADSAS to assess the relevance of the various data sources and set priorities for an increased use of the country's agricultural administrative data

To establish a good inventory of agricultural administrative data sources and link them to the core data items, countries can:

- Organize a qualitative survey on the agricultural information produced in administrative structures
- Organize a national workshop on the results of the survey with representatives of the potential administrative sources identified and their users

Example:

CORE DATA ITEMS	ADMINISTRATIVE DATA SOURCES
CROPS - Planted area, harvest area, yield, yield storage, labour, prices by crops (such as maize, barley, wheat, sorghum, rice, cotton, coffee, cocoa,..)...	Farm subsidies Grower associations
LIVESTOCK - Inventory, herd dynamics and producer prices by animal type (cattle, sheep, pigs, goats, poultry,...)...	Animal health records Cattle tracing systems
FORESTRY - Area of woodlands and forest, quantities removed, prices...	Forest cover area maps
LAND COVER - Classification of land coverage including cropland, wetland and grassland...	Land registration and cadastral records
FISHERY - List of large vessels, catch per species...	Administrative records of fishing boats/vessels



Designing an ADSAS

Step 3. Assess the quality of the administrative data produced

Administrative data quality can be assessed using two dimensions:



Structural Diagnosis

- Analyse potential differences among concepts and definitions
- Assess qualification of human resources collecting the data
- Assess data collection and entry mechanisms
- Identify legal and policy constraints



Data Quality Assessment

- Accuracy and reliability, relevance, accessibility
- Coherence/consistency
- Timeliness/Punctuality
- Comparability and data auditing

In its Guidelines on improving and using administrative data in agricultural statistics, the Global Strategy to improve agricultural and rural statistics provides a quality assessment framework for agricultural administrative data that can be used by the countries. The use of audit sample surveys is also discussed

To improve the use of administrative data, agricultural statistical systems must identify and address the main structural issues faced by the ADSAS and the fitness for use of this information for agricultural official statistics purposes.

Designing an ADSAS

Step 4. Improve the quality and accessibility of agricultural administrative data

IMPROVE QUALITY

Methodological tools

Design a national quality control protocol to guide monitoring of the data collection, compilation and data flow processes

Human and Financial resources

Fully address human and financial needs at local government and national levels

Standardized definitions and concepts

Harmonize definitions, concepts, classifications and collection methods among agricultural administrative institutions to promote the consistency and efficiency of statistics produced

IMPROVE ACCESSIBILITY

Policy Frameworks

Formulate general policies on data sharing within government to facilitate access to administrative data

Legal Frameworks

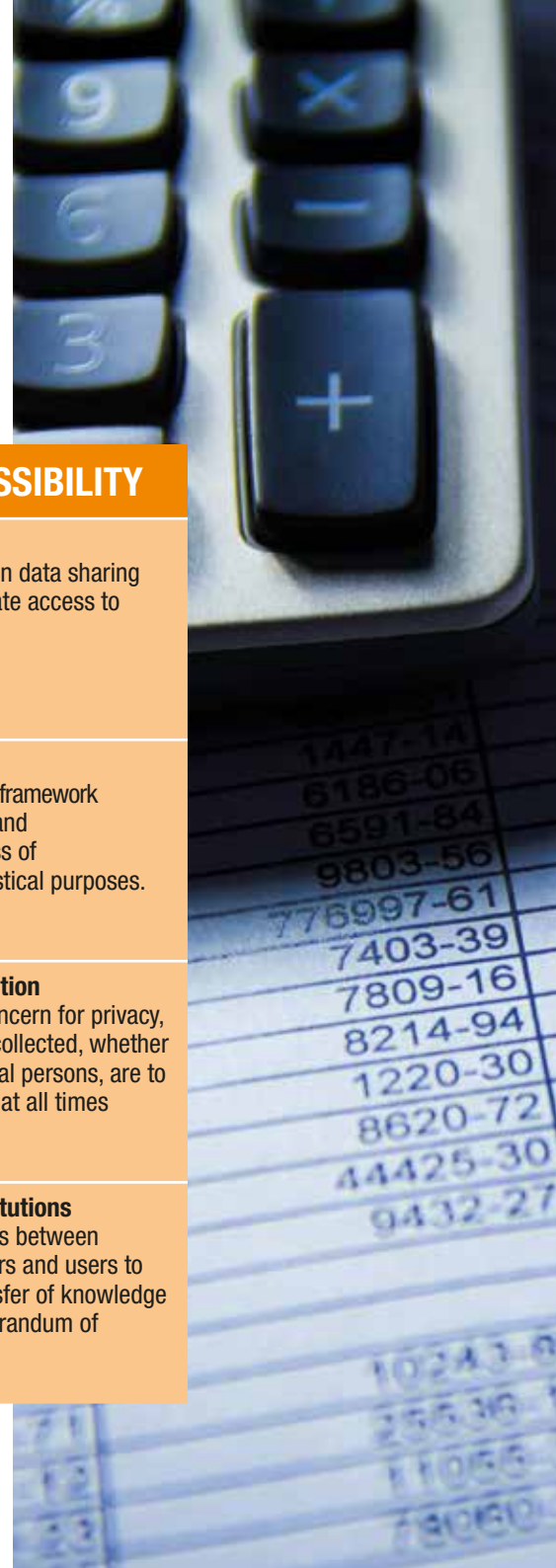
Develop a detailed set of legal framework explicitly defining the roles and responsibilities on the access of administrative data for statistical purposes. e.g: Statistical Act

Confidentiality and Perception

To retain trust and public concern for privacy, ensure that individual data collected, whether they refer to a natural or legal persons, are to be kept strictly confidential at all times

Agreements between Institutions

Establish written agreements between administrative data producers and users to detail and facilitate the transfer of knowledge and data sharing. e.g Memorandum of understanding



Integrating administrative data into the national agricultural statistics systems

Where do we start?

The development of ADSAS should be integrated in the design and implementation of the Strategic Plans for Agricultural and Rural Statistics (SPARS)

To improve the availability and quality of agricultural statistics, administrative data and data sources should be taken into account in the national system related to the production of agricultural statistics.

SPARS provide a basis for establishing policy strengths and priorities, and respective data needs, critical gaps, deficiencies, duplications and inconsistencies. They should cover the entire agricultural and rural sector including all data collection, analysis, dissemination and use from censuses, surveys and administrative systems.

The SPARS design methodology includes:

- the assessment of statistical outputs from existing agricultural data sources, including administrative reporting systems
- the prioritization, sequencing and cost-effectiveness of the statistical production within a country, which implies the consideration of alternative ways of compiling the necessary data, in particular the use of administrative data



A proper integration of administrative data in the agricultural statistics system will allow important time and cost savings while improving data quality and availability.

Integrating administrative data into the national agricultural statistics systems: the long term perspective

A long-term perspective may be a **register-based agricultural statistics system**. It provides a plan to create an integrated statistical farm register that can be regularly updated with multiple administrative data sources.

MODERNIZATION OF AGRICULTURAL ADMINISTRATIVE DATA SYSTEMS TOWARDS AN INTEGRATED REGISTER-BASED AGRICULTURAL STATISTICS SYSTEM

Microdata with unique identifiers

Creating registers comprising of identifiers enables easy linkage of multiple sources of data

Improving the Administrative System

Data obtained from the registers should maintain same level of quality and coverage as of survey data

Protection of confidentiality

Anonymizing administrative datasets and ensuring confidentiality while linking multiple data sources is critical to avoid the risk of personal information exposure

Centralization, Cooperation and Legislation

The adoption of a centralized statistical system facilitates the creation of an integrated-based statistics system and establishes the working modalities between data providers and producers

Quality Assessment

The development of relevant assessment tools and processes ensure that statistical outputs produced from register-based systems satisfy the various quality dimensions





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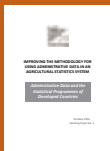
**Guidelines on improving
and using administrative data
in agricultural statistics**



**Improving the Methodology
for Using Administrative Data
in an Agricultural Statistics
System**



**Critical Analysis of Agricultural
Administrative Sources Being
Currently Used by Developing
Countries**



**Administrative Data
and the Statistical Programmes
of Developed Countries**



**Training Material on improving
the Methodology for Collecting
and Using Administrative Data
in an Agricultural Statistics
System**

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