



DATA COLLECTION IN AGRICULTURE

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IMPORTANCE OF AGRICULTURAL SECTORS

- Agriculture plays a crucial role in the economy of developing countries
- Provides the main source of food, income and employment
- Fundamental to achieving food security, poverty alleviation and overall sustainable development.

OBJECTIVE OF AGRICULTURAL STATISTICS

- To provide comprehensive knowledge of the basic information of agriculture
- To provide the scientific basis for the study of the development of economic and social development , planning and decision making.
- To provide statistical information services to the planners, scholars and public.

SECTOR OF AGRICULTURE

Agricultural sectors mainly covers:

- 1) Crops
- 2) Livestock
- 3) Fishery (Aquaculture)
- 4) Forestry (Silviculture)

Agricultural sector covers the activities related to:

- Growing crops, fruits & vegetables
- Harvesting & Threshing
- Growing of trees & logging
- Fishing & Breeding
- Rearing of animals and poultry
- Production of milk, eggs etc.

DATA COLLECTION METHOD

1. Census

- Conducted periodically
- All known farms counted
- Response is mandatory and required by law
- Comprehensive instrument collecting required crop acreages & production, livestock inventories, expenditures, demographic characteristics plus frame modules
- Planning and content testing begins immediately following of previous census

2. Survey

- Sample of farms based on specific characteristics
- Data collection based on needs (monthly, quarterly or annual)
- Survey generally contains to one specific topic or area (crops, livestock, economics, chemical use, etc.)
- Regular specification process to review contents and make changes.

TIPS TO HAVE A SUCCESSFUL CENSUS OR SURVEY

Start with the End in Mind

- **Clear Statement of Purpose**

Determining data user needs:

- ✓ Consult with data users
- ✓ Statistical advisory groups
- ✓ Consult persons

- **End-product drive many survey decisions**

- ✓ Questionnaire content
- ✓ Sample design and sample sizes
- ✓ Edit, analysis, and summary

PLANNING IS A KEY!

- 1) Planning is key to successful census and survey programs
 - Constraints: Time and Resources
 - Realistic plan – adequate and proper resources
 - State the frequency of the census/survey
 - Data collected for reference period
 - Data source for numerous agriculture and community decisions
- 2) Create a Plan, Share the Plan, Follow the Plan
 - Communication and Accountability
- 3) Plan for future census and survey cycles too
 - Feedback and response to feedback

COLLECTING GOOD DATA

Mode used in agricultural data collection

1) Paper data collection

→ manual review of the questionnaire

2) Computer Assisted Methods/electronic data reporting (EDR):

CAPI (Computer Assisted personal interview)

CATI (Computer Assisted Telephone Interview)

CASI (Computer Assisted Self-Interviewing)

CAWI (Computer Assisted Web-Interview)

→ Quality control checks are built into the collection data

UNDERSTANDING OF SURVEY METHODOLOGY

- Define target population
- What frame is used? What sampling technique?
- Coverage
- Most appropriate method to choose → probability/nonprobability
- How much of your sample?
- Estimators

WHAT TO PREPARE?

- Questionnaire development
(including testing and review)
- Training – Statistician and Enumerator
- Manuals
 - Interviewer's Manual
 - Survey Administration Manual
 - Estimation Manual (not for census)

TRAINING

- **Training of interviewers**

- ✓ Formal survey specific workshops
- ✓ Survey techniques-dealing with reluctant respondents
- ✓ Videos and computer-based training

- **Training of statisticians**

- ✓ National Workshops-Headquarters trains Regional Office personnel
- ✓ Remote training sessions
- ✓ Videos and computer-based training

MANUALS

1) Administration Manuals

- Developed and distributed for consistency in data collection procedures
- Detailed instructions of activities required to manage the data collection effort
- Specific data validation and review procedures

2) Interviewer's Manuals

- Develop to assist interviewer in properly collecting the data
- Provide general background and purpose of the survey
- List equipment and materials to be used
- Documents standard procedures for completing the questionnaire
- Explain why each question is asked

QUESTIONNAIRE DESIGN

- Provide copy of the questionnaire or report form.
- Ensure question are easily understandable by respondents.
- What to ask?
 - ✓ Look back to the purposes of the survey/census
 - ✓ Highlight latest trends or key areas of interest.
 - Sustainable agriculture
 - GHG in agriculture
 - Role of gender in decision making

MONITORING DATA COLLECTION

- Office process flow
- Check-in and tracking activities
- Monitor status
- Non-response follow-up
- Quality control and evaluation

Formal check of the quality of data collection

- ✓ Training and procedures
- ✓ Re-interview
- ✓ Publishable data

DATA VALIDATION

- Validate questionnaires for reasonableness, completeness, and coverage
 - Manual and machine processes
- Key areas
 - Correct completion codes
 - Consistent imputation procedures
 - Verify large percent change in reported data

PUBLICATION DATES

- Every census and survey has a known, published publication date
 - Down to the minute!
- Publication calendar is created and released to the public in the previous calendar year
- Not only can we plan our activities better, but so can Data Users

PLAN FOR FUTURE CENSUS AND SURVEY CYCLES TOO

- 1) Evaluate survey performance
 - Timeliness
 - Quality
 - Efficiency
- 2) Examine data collection cost and efficiency
- 3) Review response rates and costs
- 4) Evaluate classification of records and sample coverage
- 5) Document lesson learned

NOW THAT YOU HAVE A CENSUS/SURVEY PLAN...

- Share the Plan
- Follow the Plan
- Get feedback on Plan for next
- census/survey cycle
- And always, **Start with the End in Mind**

WHAT'S BPS END PRODUCT?

- Over 20+ publications each year
- Harvested area, yield, and production crops, export and imports of plantation commodities, Livestock Slaughtered, production of livestock, Number of Fishing Establishments, production of forest product, cost structure, number of agricultural workers, socio-economic condition, etc
- Census and Surveys plans must work together → census as a frame of agricultural statistics

Sources

- *WHO/ESCAP Training Manual*
- *USDA. 2023. Young Statistician Seminar on Methodology for Agricultural Censuses and Surveys*
- USDA. Workshop to Establish a National Agricultural and Rural Survey Calendar based upon Integrated Planning of Agricultural Census and Surveys