



<p style="text-align: center;">Training Activities Global Strategy to improve agricultural and rural statistics</p>
<p style="text-align: center;">Agricultural Cost of Production Statistics</p>
<p style="text-align: center;"><i>Users' guide – Training material</i></p>

1. Background

In recent international fora on agricultural statistics, information on agricultural costs of production (AgCoP) emerged several times as one of the priority topics of developing countries. Participants to the 22nd African Commission on Agricultural Statistics (AFCAS 22, Nov. 2011, Addis Ababa) expressly requested that FAO, along with relevant organizations, undertake research on this topic with the objective to provide a Handbook on best practices on data collection, compilation and estimation. Interest in this domain has been reiterated at following AFCAS and APCAS (Asia-Pacific Commission on Agricultural Statistics) sessions, where countries highlighted the importance of producing guidelines on cost-efficient data collection methods and supported current initiatives going in this direction. The strategic nature of these statistics and their usefulness for policy-making and targeting is certainly one of the factors explaining countries' interest in having more complete and higher-quality statistics on the cost of agricultural production.

The lack of good quality agricultural statistics in developing countries is widely acknowledged, especially in sub-Saharan African countries. In a specific survey conducted in 2012¹ by FAO, the lack of appropriate statistics on AgCoP was evidenced: only 33 out of the 80 countries that

¹ A summary of the findings of this survey can be found in Annex 4 of the following publication:
<http://gsars.org/wp-content/uploads/2016/07/ACPS-WEBFILE-310516.pdf>

responded to this survey declared to collect this data using regular sample surveys. This means that few countries produce nation or region-wide representative statistics on AgCoP.

In this context, the Global Strategy to Improve Agricultural and Rural Statistics (GSARS or GS) initiated in 2012 research activities aimed at improving the availability and quality of data on AgCoP in developing countries. This work has led to the following publications (details provided in the References):

- A Literature Review on Cost of Production Methodologies (in English)
- A Handbook on Agricultural Cost of Production Statistics (in English, French and Spanish)
- Country Field Tests and Desk-Study Reports (in English)
- An 8-page Brochure of Agricultural Cost of Production Statistics (in English, French and Spanish)

To disseminate this research and contribute to improve the capacity of developing countries, several regional trainings destined to country officers were organized: two in Africa (one in French and one in English) and one in Asia, under the coordination of the respective regional implementation and training partners of the GS (AfDB and SIAP, respectively).

Taking stock of these activities, the Global Office of the Global Strategy has released some generic training material that could be used for future training on AgCoP. This users' guide describes the intended objectives, content and target audience of this training material. It provides recommendations on organizational aspects related to the organization of training on AgCoP. Examples of course content and possible agenda are provided in an appendix.

2. Objectives of the training

General objectives

The overall objective of the training on AgCoP is to strengthen the technical capacity of statistical producers (statistical offices and other institutions) to apply relevant methods and standards in the compilation of agricultural cost of production statistics. This objective should be reached by:

- Improving understanding of various types of costs related to agricultural operations and how these concepts can be integrated in agricultural and rural statistics data collection programs;
- Identifying and using estimation methods for all types of agricultural costs, adapted to the characteristics of the basic data, country capacities and objectives;
- Understanding and using international principles and standards on cost of agricultural production statistics to ensure comparability; and
- Equipping participants with the knowledge, techniques and tools to design data collection and compilation procedures for farm level cost data.

Expected outcome

After this course, participants will be expected to be able to:

- Conceive new data collection tools with respect to costs of production statistics to ensure alignment with recommended international practices;
- Improve existing data collection tools to integrate all components of agricultural cost of production statistics and comply with recommended best practices;
- Improve methodologies for estimation of different components of agricultural costs of production;
- Train other staff from national statistical systems (NSS) on the recommended international practices and estimation methods for agricultural cost of production of statistics;
- Develop an action plan to improve the quality of agricultural cost of production statistics, in line with international statistical quality standards.

3. Course content

The training topics that should be covered are:

- **Uses and users of costs of production statistics:** farmers and agricultural markets, system of national accounts, research, government and policy makers;
- **Statistical outputs, indicators and analytical frameworks:** dimensions of production costs, analytical units, construction of indicators and statistical tables;
- **Data collection methods:** surveys, censuses, typical farm approaches, identifying the advantages and limitations of each approach;
- **Data compilation and estimation methods:** basic principles, allocation of farm-level costs to specific activities, estimation of variable costs, costs of capital goods, labor costs, land costs, pre-production costs;
- **Disseminating and presenting data on costs of production:** principles guiding dissemination, statistical quality standards and dissemination examples.

Depending on the level of experience on the topic and the specific objectives of the target audience, the training could cover in more depth one or more of the topics identified above. For example, if a country already has good quality information on AgCoP but lacks the capacity to compile relevant indicators and analyze the data, the training may focus more on the presentation of data compilation and analysis methods through a combination of formal lectures and applications on real data.

4. Course design and delivery

Delivery mode

The course should be organized through the combination of:

- Lectures on specific technical topics;
- Country presentations, that will provide a platform for participants to discuss their respective data collection and analysis tools in the field of costs of production statistics and identify areas of improvement;
- Hands-on exercises in small groups on:
 - Questionnaire design for cost of production surveys
 - Compilation and estimation of costs

- Construction of derived AgCoP and profitability indicators
- Field visit(s) to farmers and/or to the offices of data producers

Given the level of technicity of the topic and the multiple possible approaches and methods that need to be discussed, it is important to ensure a continuous interaction between the trainees and trainers. For this reason, most of this training should be delivered face-to-face with the trainers physically present. The face-to-face training can be followed and/or preceded by online lectures to get the participants up-to-speed on certain basic topics and/or to delve deeper into certain complex questions.

Length of the training

It will depend on the specific objectives determined with the recipient organizations and country. From experience, a five-days training has proven to be a good format, including one full day for exercises in groups and half-day for field visits.

Number of trainers and requirements

There is a large number of topics to cover, many of them requiring the presentation and discussion of several methodologies. Moreover, the topics are broad in scope, from data collection aspects to cost accounting/compilation and data dissemination. It is therefore advisable to plan for a team of three trainers: two with expertise in AgCoP statistics, from a conceptual as well as applied perspective, and an additional trainer with experience in general data collection aspects (surveys, censuses, typical farms, etc.) and statistical dissemination.

Number of trainees

It depends on the scope of the training, both in terms of countries covered (regional or country specific) and topics (a targeted training may not concern more than a few analysts at country-level, for example). Past trainings on this and similar topics have shown that a group of around 20 persons is appropriate: it is small enough to ensure interaction among trainees and with the trainers, organize exercises and applications and large enough to include most of the stakeholders and to allow mutually beneficial exchanges.

5. Course material

The proposed material for the course is composed of the following:

- Presentations on the topics identified in the course content (Section 3)
- Presentations of country practices on AgCoP
- Example of survey questionnaires used in countries to collect data on AgCoP
- A data compilation tool adapted to the treatment of farm-level data (in Excel or any other format)

The core of the training material has already been prepared, peer-reviewed and tested in a couple of regional workshops. They consist in a series of 15 PowerPoint presentations:

- 1 – Main Concepts
- 2 – Uses and users
- 3 – Data collection tools

- 4 – Sample design
- 6 – Cash costs
- 7 – Labor costs
- 8 – Land costs
- 9 – Capital costs
- 10 – Cost allocation
- 11– Modelling approaches to cost allocation
- 12 – Pre-production costs
- 13 – Costs for dairy production
- 14 – The treatment of uncertainty
- 15 – Data dissemination

Suggested country presentations and hands-on exercises will however need to be prepared according to participants' training needs and countries' realities

The supporting material to be reviewed by the participants prior to the training is composed of (all documents are available on www.gsars.org):

- [Literature Review on Cost of Production Methodologies](#) (English)
- [Handbook on Agricultural Cost of Production Statistics](#) (English, French and Spanish)
- [Country Field Tests and Desk-Study Report](#) (English)
- [8-page Brochure of Agricultural Cost of Production Statistics](#) (English, French and Spanish)

Finally, the participants should be given at the end of the training an evaluation sheet, where they will be able to provide their feedback on the course and identify the areas where further training could be provided.

6. Target Audience

The course is designed to bring together statistical officers involved in the data collection and production of indicators on agricultural statistics, if possible with experience in economic statistics. The audience should also include data analysts, economists or policy analysts that are the main users of this information.

The training should therefore be open to officers from the national statistical system (NSO or statistical department within the Ministry of Agriculture, for example) as well as from other public institutions that are either producers and/or users of information on AgCoP, such as analysts/data producers from different Government Departments, such as Agriculture, Livestock, Fisheries or Forests, as well as from research institutes.

In certain countries, major data producers may belong to the private or semi-private sector, such as farmers' unions or sectoral organizations. These organizations often have agreements with Government Departments on the provision of data and statistics on a regular basis, according to agreed-upon methodologies. In this case, it is important that analysts from these organizations be invited to the training as a way to disseminate best practices on AgCoP but also to facilitate collaboration between different entities at country-level.

7. Relationship with other training activities

This training on AgCop covers some topics that are addressed in greater details by other research lines of the Global Strategy, especially regarding data collection methodologies. It is therefore recommended to review the training material and publications of the following research activities:

- Master Sampling Frames for Agricultural Statistics
- Linking Population and Housing Censuses with Agricultural Censuses
- Linking Area and List Frames
- Integrated Survey Framework
- Farm Typologies
- Collecting and Using Administrative Data in an Agricultural Statistics System

8. Main references

- AAEA Task Force on Commodity Costs and Returns.** 2000. *Commodity Costs and Returns Estimation Handbook*. United States Department of Agriculture: Ames, Iowa, USA.
- FAO and UNFPA.** 2012. *Guidelines for Linking Population and Housing Censuses with Agricultural Censuses*. FAO: Rome
- Global Strategy to Improve Agricultural and Rural Statistics.** 2016. *Agricultural Cost of Production – Country Field Test and Desk-Study Reports*. Technical Report Series GO-13-2016.
- _____ 2016. *8-page brochure on Agricultural Cost of Production Statistics*. FAO: Rome.
- _____ 2016. *Handbook on Agricultural Cost of Production Statistics*. FAO: Rome.
- _____ 2016. *Improving the Methodology for Collecting and Using Administrative Data in an Agricultural Statistics System*. Working Paper No. 8, June 2016.
- _____ 2016. *Literature Review – Report and Proposal for an International Framework for Farm Typologies*. Technical Report Series GO-16-2016
- _____ 2016. *Strategy and Methodology for Improving the Use of Administrative Data - a protocol for In-Country Testing*. Working Paper No. 11, August 2016.
- _____ 2015. *Guidelines on Integrated Survey Framework*. FAO: Rome.
- _____ 2015. *Handbook on Master Sampling Frames for Agricultural Statistics – Frame Development, Sample Design and Estimation*. FAO: Rome.
- _____ 2015. *Technical Report on Linking Area and List Frames in Agricultural Surveys*. Technical Report Series GO-08-2015.
- _____ 2014. *Literature Review on Cost of Production Methodologies*. Technical Report Series GO-04-2016.
- Sen, Abhijit & Bhatia, M. S.** 2004. *Cost of Cultivation and Farm Income,*” in *State of the Indian Farmer, Volume 14*. India Department of Agriculture and Cooperation: New Delhi.

9. Appendix: an example of agenda for a regional training workshop

Time	Topics
Day 1	
08:00 – 09:00	Registration
09:00 – 10:15	Opening Session/Photo Session <ul style="list-style-type: none"> • Welcome Remarks • Opening Remarks • Orientation: Course objectives, structure and expected results • Introductions [Participants, Resource Persons and Support Team] Group photo
10:15 – 10:30	Break
10:30 – 10.45	Module 0: Introduction, workshop objectives and expected outcomes, and workshop organization <u>Introductory Presentation</u>
10.45-12.00	Module 1: Uses and Benefits of Costs of Production Statistics Session 1.1: Different uses and users of AgCoP statistics and country specific scenarios/case studies <u>Group Discussion: Identifying Key users</u>
12:00 – 14:00	Lunch
14:00 – 15:00	Module 2: Key concepts of Agricultural Costs of Production Session 2.1: Dimensions of production costs, analytical units, indicators and statistical tables <u>Presentation and Discussion</u>
15:00 – 15:15	Break
15:15 – 16:00	Session 2.2: Data quality control and measurement for agricultural costs of production <u>Presentation and Discussion</u>
16.00-17.00	Session 2.3: Small group seminar: Assessing and Measuring Data Quality for Agricultural Costs of Production
Day 2	
09:00 – 10:15	Module 3: Data collection Mechanisms: A review of survey approaches Session 3.1: General considerations for data collection <u>Presentation and Discussion</u>
10:15 – 10:30	Break
10:30 – 12:00	Session 3.2: Data collection vehicles: Towards an integrated survey strategy <u>Presentation and Discussion</u>
12:00 – 13:00	Lunch

Time	Topics
13:00 – 14:30	Session 3.3: Survey Design Considerations: Review of Basics of Sampling Methods: Probability Sampling, Sample Selection and Sample Design and Estimation <u>Presentation and Discussion</u>
14:30 – 14:45	Break
14:45 – 16:00	Session 3.4: Survey Design Considerations: Systematic Sampling Objectives of Multistage Sampling and Illustrative Designs <u>Presentation and Data Workshop</u>
16:00 – 17:00	Session 3.5: Objectives and Use of Stratification in Sample Design <u>Presentation and Data Workshop</u>
Day 3	
09:00 – 10:15	Session 3.6: Questionnaires on AgCoP: Country examples <u>Presentation and Discussion</u>
10:15 – 10:30	Break
10:30 – 11:00	Module 4: Determination of cash, labour and land costs Session 4.1: Determination of cash costs <u>Presentation and Discussion</u>
11:00-12:00	Session 4.2: Estimating the costs of paid and unpaid labour <u>Presentation and Discussion</u>
12:00 – 13:00	Lunch
13:00 – 14:30	Session 4.3: Land tenure types and associated cost estimation methods <u>Presentation and Discussion</u>
14:30 – 14:45	Break
14:45 – 17:00	Session 4.4: Practical Session-Small Group Workshop <u>Estimation of cash, labour and land costs</u>
Day 4	
9:00 – 10:15	Module 5: Structure of Capital Costs Session 5.1: Different types of capital goods in agriculture and the estimation of capital costs <u>Presentation and Discussion</u>
10:15 – 10:30	Break
10.15-11.00	Session 5.2: Determining the cost and revenues from agricultural production <u>Presentation: Expert's recommendations and illustrative good practices on livestock</u>

Time	Topics
11:00 – 12:00	Session 5.3: Country Experiences <u>Presentations by countries</u>
12:00 – 13:00	Lunch
13:00 – 14:30	Session 5.4: Allocating pre-productive costs in multi-year enterprises <u>Presentation</u> : Expert’s recommendations and illustrative good practices on allocation of pre-productive costs <u>Plenary discussion</u>
14:30 – 14:45	Break
14:45 – 15:30	Session 5.5: Country Experiences: Presentations by countries
15:30 – 17:00	Session 5.6: Practice Session-Small Group Workshop <u>Estimating Capital Costs</u>
Day 5	
09:00 – 10:00	Module 6: Data Collection Tools for Agricultural Costs of Production Session 6.1: Key Principles of Questionnaire Design <u>Presentation and Discussion</u>
10:30 – 10:45	Break
10:45 – 12:00	Session 6.2: Practical Session-Small Group Workshop <u>Questionnaire Design for Agricultural Costs of Production</u>
12:00 – 14:00	Lunch
14:00 – 15:00	Session 6.2 continued: -Small Group Workshop <u>Questionnaire Design for Agricultural Costs of Production</u>
15:00 – 15:15	Break
15:15 – 15:45	Session 6.3 : Plenary Session <u>Questionnaire Design</u>
15:45 – 16:25	Session 6.4: Data Dissemination Principles <u>Presentation and Discussion</u>
16.25 – 17.00	<u>Closing and Evaluation</u>