

Module 3

Assessing practices to increase statistical literacy

Regional Workshop on Statistical Literacy:
Increasing Effective Use of Agricultural and Rural Statistics

13-17 July 2015 Daejeon, Republic of Korea



Module outline

Effectiveness of **data producers** in **facilitating statistical literacy**, with respect to:

1. Awareness
2. Understanding
3. Analysis
4. Communication

3.1 Facilitating awareness (1)

What is awareness of statistics?

- * Able to define what data are needed
- * Understand the main sources of agriculture and rural statistics
- * Know what is available, when, and how to access it
- * Able to assess which statistical information is fit-for-purpose
- * Select appropriate source of data
- * Know how the national statistical system works

3.1 Facilitating data awareness (2)

What can data producers do?

1. Promote statistics through **many channels**
2. Publish a **work program** and **release calendar**
3. Provide a **well-organised** and **useable web site**
4. Participate and represent statistics at **events**
5. Have a **quality framework** and assessment tool
6. Provide **explanatory notes** and information
7. Provide **information services** (e.g. library)
8. **Understand their users**
9. Work together

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Home » 2013 Agriculture and Fisheries primer

Primer on 2012 Census of Agriculture and Fisheries

Release Date: Saturday, January 12, 2013

What is the Census of Agriculture and Fisheries (CAF)?

It is a large-scale government undertaking that is geared towards the collection and compilation of basic information on the agriculture and fishery sector in the country. The collected data will constitute the bases from which our policy makers and planners will evolve plans for the country's development.

What agency is responsible for the conduct of Census of Agriculture and Fisheries? What are its legal basis?


The National Statistics Office (NSO) is mandated by Commonwealth Act No. 591 and Executive Order (EO) No. 121 (Reorganizing and Strengthening the Philippine Statistical System (PSS) and for Other Purposes), as the sole agency to undertake the Census of Agriculture and Fisheries. Furthermore, EO No. 352 (Designation of Statistical Activities that will Generate Critical Data for Decision-making of the Government and the Private Sector) provides for the conduct of CAF every 10 years.

How many censuses of agriculture and/or fisheries have been undertaken so far?

The collection of data on agriculture and fisheries establishments was included in the Census of Establishments (CE) in 1903, 1918, 1939, and 1948. However, in 1960, the Census of Agriculture was undertaken separately from CE. Since 1970, and every ten years thereafter, the Census of Agriculture has been conducted together with the Census of Fisheries. These two census activities are collectively known as Census of Agriculture and Fisheries (CAF). The 2012 CAF will be the sixth of a series of decennial census on agriculture and the fifth on fisheries in the country.

How essential is the Census of Agriculture and Fisheries to our national development?

Agriculture remains as an important sector of the Philippine economy as it provided 33 percent of the total employment (NSO, April 2012 Labor Force Survey). The total agro-based products accounted for 7.1% of the total exports of the Philippines in April 2012 (NSO, Foreign Trade Statistics). About 12.5% of the gross domestic product in the first quarter of 2012 came from the agriculture, hunting, fishery and forestry industries (NSCB, 1st Quarter 2012 National Accounts).



Source: <http://webo.psa.gov.ph/content/primer-2012-census-agriculture-and-fisheries>


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Home » Agriculture, forestry, hunting and fishing

Topic  Key figures for agriculture, forestry, hunting and fishing

Agriculture, forestry, hunting and fishing

Narrow by

Subtopic

- All
- Agricultural properties
- Agriculture
- Aquaculture
- Censuses of agriculture
- Fishing
- Forestry
- Hunting
- Methods and documentation

Update

Regional level

- All
- Municipality
- County
- Region
- Country

Update

All content Statistics Publications Articles

Results (50)

Selected content

Structure of agriculture STATISTICS
 farming, farmers, dairy farmers, meat producers, corn producers, farmland, livestock, farmland by use (for example corn, potatoes, pastures)

Forestry, structural statistics STATISTICS
 forest properties, forest owners, quantity cut, productive forest area, felling, forest trust fund, forestation, combined use

Aquaculture STATISTICS
 fish farming, salmon, rainbow trout, shellfish, char, cod, halibut, fish farms, hatcheries, hatchery-produced fish, operating licences, employees

Export of salmon STATISTICS
Decline in salmon export price
 Published: 1 July 2015
 farmed salmon, price of salmon, export quantity, fresh/chilled salmon, frozen salmon

Agricultural properties STATISTICS
 Finner fisker på farmen

Source: www.ssb.no/en/jord-skog-jakt-og-fiskeri

L INTRODUCTION

"On the Web, usability is a necessary condition for survival. If a website is difficult to use, people leave."

Dr. Jakob Nielsen¹

1. Websites have become a key communication medium for statistical agencies and usability is a vital factor in good website design. Website usability testing is an inexpensive way to gather valuable feedback from representative users. This feedback can help web designers and content creators make the information we publish online more usable and relevant to our audiences.

2. The UNECE Statistical Division recently conducted tests of its current website (www.unece.org/stats) as a basis for redesigning the site's information architecture and establishing a benchmark for future usability studies. Tests were conducted remotely, allowing testers to be truly representative of users and significantly reducing costs.

“On the Web,
usability is a
necessary
condition for
survival. If a
website is difficult
to use,
people leave.”

Dr. Jakob Nielsen (2003)

Source: www.unece.org/fileadmin/DAM/stats/documents/ece/ces/ge.50/2007/mtg1/wp.20.e.pdf

3.2 Facilitating understanding (1)

What is understanding statistics?

- * Know about statistical concepts (e.g. percentages, survey vs census, standard classifications)
- * Able to read tables and graphs
- * Able to find help to fill gaps in understanding

3.2 Facilitating understanding (2)

What can data producers do?

1. Provide guidance and training
2. Explain clearly using plain language
3. Good presentation
4. Provide teaching resources
5. Contact details for questions
6. Understand their users



The screenshot displays the Australian Bureau of Statistics (ABS) website. At the top, the ABS logo and name are visible, along with navigation links for 'Home', 'Complete Survey', 'Statistics', 'Services', 'Census', 'Topics @ a Glance', 'Methods & Classifications', 'News & Media', 'Education', 'Links', and 'Help'. A search bar is located in the top right corner.

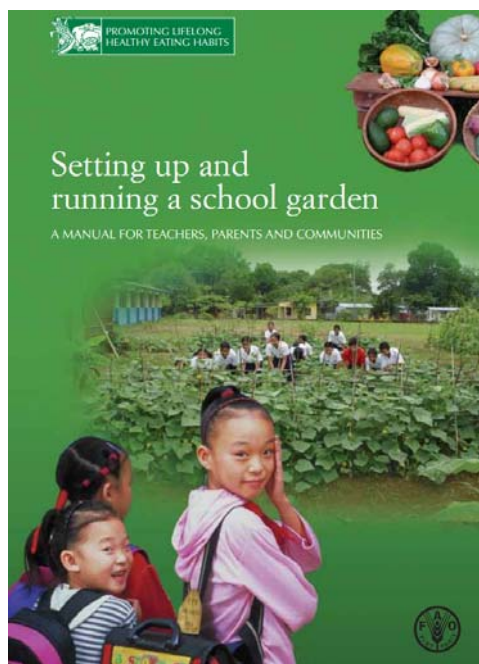
The main content area is titled 'Understanding statistics' and features a green banner for 'Statistical Language'. Below the banner, a sub-header reads: 'Statistical Language helps you to understand a range of statistical concepts and terms with simple explanations.'

The page is organized into several sections:

- Find concept definitions:** A link to the 'Statistical Language Glossary' is provided.
- Explore a concept:** This section lists various statistical concepts, each with a small icon and a list of sub-topics:
 - What are Data?** (Icon: 67 x 5) - Data unit, Data item (variable), Observation, Dataset
 - What is a Population?** (Icon: Person) - Population
 - Describing Frequencies** (Icon: Bar chart) - Absolute frequency, Relative frequency, Ratio, Rate, Proportion
 - Measures of Central Tendency** (Icon: Arrow) - Mode, Median, Mean, Outlier
 - Quantitative and Qualitative Data** (Icon: Document) - Quantitative data, Qualitative data
 - Census and Sample** (Icon: Globe) - Census, Sample, Random (probability) sample, Non-random (non-probability) sample
 - Frequency Distribution** (Icon: Bar chart) - Frequency distribution, Histogram, Bar chart
 - Measures of Spread** (Icon: x-y) - Range, Quartiles, Interquartile range, Variance, Standard deviation
 - What are Variables?** (Icon: Grid) - Variable (data item), Numeric, Continuous, Discrete, Categorical, Ordinal, Nominal
 - Data Sources** (Icon: Document) - Direct/Primary data, Survey, Indirect/Secondary data, Administrative data
 - Measures of Shape** (Icon: Arrow) - Measures of shape, Normal distribution, Skewness
 - Types of Error** (Icon: Arrow) - Sampling error, Non-sampling error

Source: www.abs.gov.au/websitedbs/a3121120.nsf/home/statistical+language

Source: www.gapminder.org



Develop teaching resources

- Step-by-step
- Lesson plans
- Easy to pick up and use
- Prepared by experts
- Build literacy at a young age

Source: <ftp://ftp.fao.org/docrep/fao/012/a0218e/a0218e.pdf>

Data Sources and Definitions

Data sources:

Current Population Survey, Bureau of Labor Statistics, U.S. Department of Labor.
Local Area Unemployment Statistics, Bureau of Labor Statistics, U.S. Department of Labor.
Population Estimates, Census Bureau, U.S. Department of Commerce.

Definitions and additional information:

For more on the 2003 definitions of metropolitan and nonmetropolitan areas, see <http://www.ers.usda.gov/topics/rural-economy-population/rural-classifications/what-is-rural.aspx>
For more on ERS county types, such as farm-dependent and retirement destination counties, see <http://www.ers.usda.gov/data-products/county-typology-codes.aspx>
For more on the Local Area Unemployment Statistics program, see <http://www.bls.gov/lau/home.htm>
For more on the definition and measurement of poverty, including the identification of poor individuals and households, see <http://www.census.gov/hhes/www/poverty/>
For more on the measurement of family incomes and income inequality <http://www.census.gov/hhes/www/income/>
For the definition of adjacency to a metro area, see <http://www.ers.usda.gov/data-products/rural-urban-continuum-codes/documentation.aspx>
For more on nonmetro population trends, see <http://www.ers.usda.gov/topics/rural-economy-population/population-migration.aspx>

ERS Web Site and Contact Person

Information on rural America can be found on the ERS website at www.ers.usda.gov/topics/rural-economy-population. For more information, contact **Lorin D. Kusmin** at lkusmin@ers.usda.gov or 202-694-5429.

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Rural America At A Glance 2012 Edition

Source: United States Department of Agriculture (USDA), Rural America at a Glance, 2012 Edition (www.ers.usda.gov/media/965908/eb-21_single_pages.pdf)

3.3 Facilitating analysis (1)

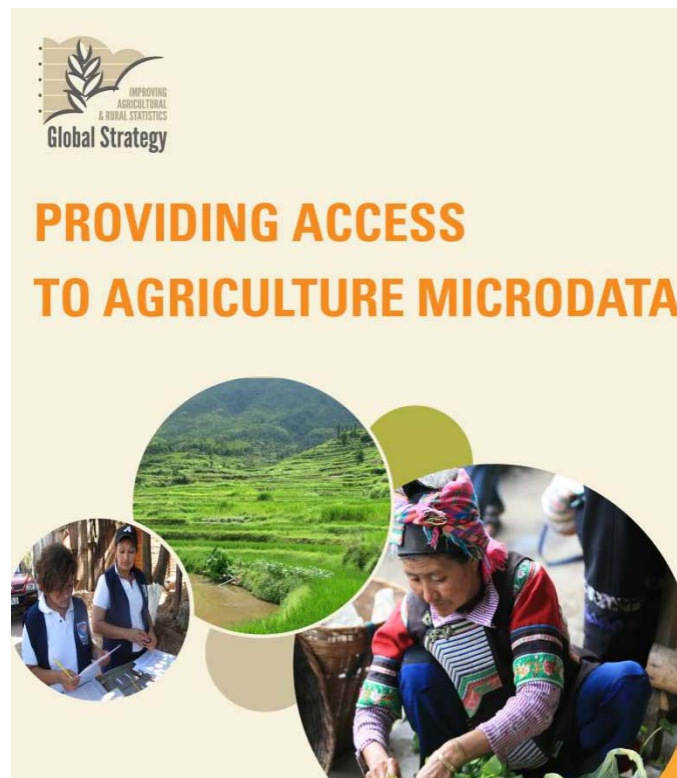
What is statistical analysis?

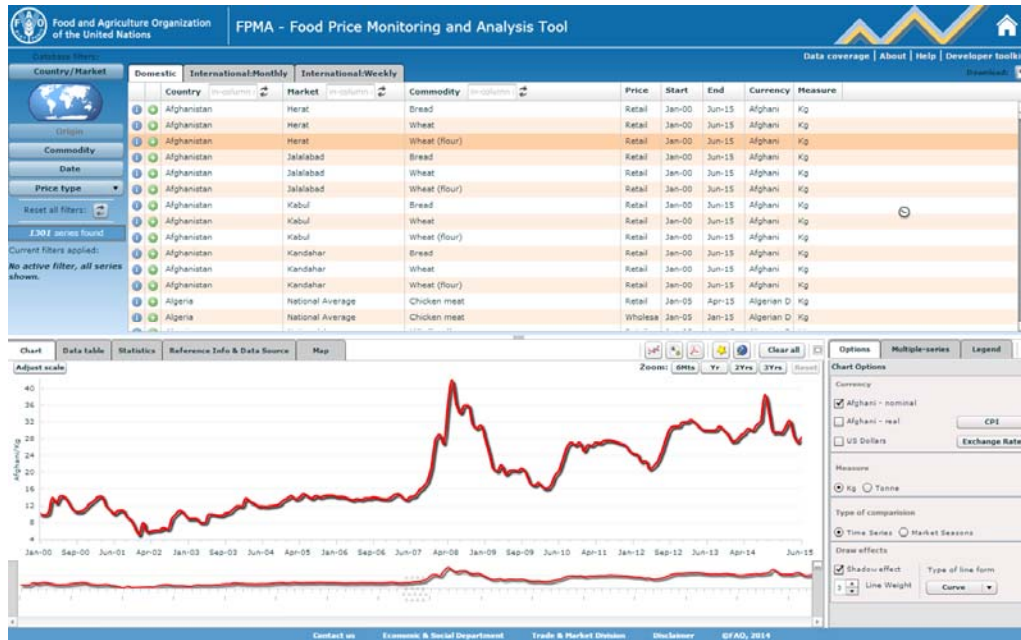
- * Critical questioning
- * Apply techniques to link, integrate or extract information
- * Transform data into tables and graphs
- * Reach conclusions
- * Understand statistical models or frameworks underlying the data

3.3 Facilitating analysis (2)

What can data producers do?

1. Disseminate microdata and data in electronic format
2. Provide detailed metadata
3. Have a permissible copyright license (e.g. Creative Commons)
4. Provide analysis tools and training
5. Develop partnerships with research institutions and academia
6. **Understand their users**





Source: www.fao.org/giews/pricetool/

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Source: www.stats.govt.nz/about_us/about-this-site/copyright-terms-of-use.aspx

3.4 Facilitating communication (1)

What is statistical communication?

- * Describe information in writing and visually
- * Relate statistics to the policy issue
- * Use easy-to-understand language
- * Articulate the limitations of the data
- * Present in a format suited to audience
- * Seek feedback

3.4 Facilitating communication (2)

What can data producers do?

1. Lead by example
2. Provide templates and visualization tools
3. Publish a statistical style guide
4. Establish consultative forums
5. Provide training in statistical communication
6. Collate and promote best practices

Pacific Regional Food Security Policy Brief

What is Food Security?

"Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life". (World Food Summit, 1996)

The right to food security is central to human development and many of the major human rights treaties. It is also implicit in Goal 1 of the Millennium Development Goals – Eradicate Extreme Poverty and Hunger.

Food Security in the Pacific is threatened

Traditionally, Pacific Islanders achieved food security through sustainable agricultural and fishing practices and a reliance on local staples such as roots and tubers, bananas and breadfruits. More recently, imported foods have helped contribute to food

security by meeting a growing demand for more and a greater variety of foods. However, food security in the Pacific is considered to be under threat, due to:

1. Limited Food Production Capa

in many of the countries in the Pa declining soil fertility, increasing i poor quality water, and poor p animals).

2. **Population growth and Urb** people in the region is predicted 2030. Most of the increase will be i rensa (Fig 1). This will prevent adequate local foods for urban a increase in food imports to mee urban areas.

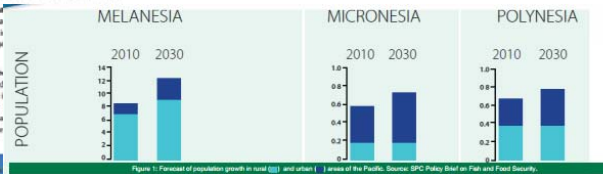
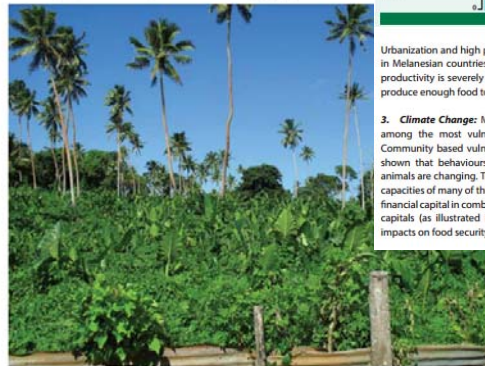


Figure 1: Forecast of population growth in total (left) and urban (right) areas of the Pacific. Source: SPC Policy Brief on Food and Food Security.



Urbanization and high population growth rates (in excess of 2% in Melanesian countries) accompanied by stagnant agricultural productivity is severely challenging existing farming systems to produce enough food to meet the needs of growing populations.

3. **Climate Change:** Many countries of the Pacific region are among the most vulnerable to impacts of climate change. Community based vulnerability analysis conducted by SPC has shown that behaviours of some of the traditional crops and animals are changing. The same studies also show that adaptive capacities of many of these communities are very low in terms of financial capital in combination with natural, human and physical capitals (as illustrated in Fig 2). These have multidimensional impacts on food security of many Pacific communities.



Source: www.spc.int/pafpnet/attachments/article/145/policy-brief-21-Pacific-Regional-Food-Security-2014.pdf

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Data visualisation

Creating valuable and meaningful graphics to help analyse data

Contents

Introduction

- Best practice
- GDS example

Telling the story

- Checklist

Choosing your visualisation and templates

- Column chart
- Bar chart
- Line chart
- Pie chart
- Scatter chart
- Checklist
- Worked example
- Refere

As we surface more data about government services, we need to make sure that the visualisations of it are easy to understand, visually compelling and prompt action. To do that, we need to have a consistent visual grammar, for use both within GDS and across government.

Introduction

This guide sets out 4 principles of good data presentation, with easy to follow checklists to help you achieve this. For context, we've added examples of how the principles have been employed at GDS. The principles and examples found in this guide are likely to evolve as we find new challenges and applications for them.

Best practice

There are many examples of best practice style guides already in place. For example, [The Economist](#) has a clearly defined house style that allows its readers to readily identify and understand their visualisations. They publish a new visualisation every day in their [Graphic Detail](#). This guide attempts to build on the best practice from a range of organisations.

Source: www.gov.uk/service-manual/user-centred-design/data-visualisation.html

Data users' conference



- Opportunity to share information
- Showcase new products
- Learn about actual data use
- Improve quality of statistics
- Understand users