Use of administrative records for agricultural statistics in developing countries

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Introduction

- Use of administrative data for statistical purposes very advanced in developed countries: Preconditions that enable NSOs to use admin sources for statistics production thoroughly studied

- **Far less is known about developing countries, particularly in agricultural statistics,** even if a large proportion of official statistics rely on some kind of admin source

- **New SDG data requirements will entail a more intensive use of admin data**

- Launched a **research programme on the use of administrative data for agricultural statistics** in developing countries (jointly conducted by the Global Strategy to Improve Agriculture Statistics (GS), Makerere University (MU) and Iowa State University (ISU)

- **Key components**: country assessment; proposals for methodological improvements; field tests (Tanzania, Namibia, and Cote d'Ivoire); preparation of guidelines and training materials

Main sources of current food & agriculture data in Africa

PRODUCTION							
	Main Sources of Data (%)						
	Census	Sample Surveys	Admin Records	Estimates/ Forecasts	Special Study	Expert Opinions	Number of Countries
CROP							
Crop production: Qty	13.3	62.2	11.1	13	0	0	45
Crop production: Value	13.2	36.8	23.7	21.1	2.6	2.6	38
Crop yield per area	9.8	70.7	4.9	14.6	0	0	41
Area planted	10.5	68.4	10.5	7.9	2.6	0	38
Area harvested	6.2	68.8	9.4	9.4	3.1	3.1	32
LIVESTOCK							
Livestock production: Qty	11.4	38.6	27.3	22.7	0	0	44
Livestock production: V.	13.5	35.1	29.7	21.6	0	0	37
FISHERY							
Fishery production: Qty	10	30	47.5	10	2.5	0	40
Fishery production: Value	11.1	25	47.2	16.7	0	0	36
FORESTRY							
Forest prod. Wood: Qty	5.9	11.8	55.9	17.6	5.9	2.9	34
Forest prod. Wood: value	7.1	14.3	53.6	17.9	7.1	0	28
Forest prod. nonwood: Q	10.5	5.3	63.2	10.5	10.5	0	19
Forest prod. nonwood: V	12.5	6.2	62.5	12.5	6.2	0	16

Preliminary results of GS research programme

- Large proportion of agricultural statistics rely on some kind of administrative source (prevalent source for statistics on livestock, fishery, forestry, land and water)

- Reporting systems based on extension workers from Ministry of Agriculture

Data quality

- Data usually collected and compiled not using standard statistical procedures and trained personnel
- Documentation of data collection and processing methods is poor
- Quality assessment is largely subjective
- As a result, admin data are usually of poor quality and often diverge from survey data (for a number of reasons).

Preliminary results of GS research programme

Low institutional and organizational capacity
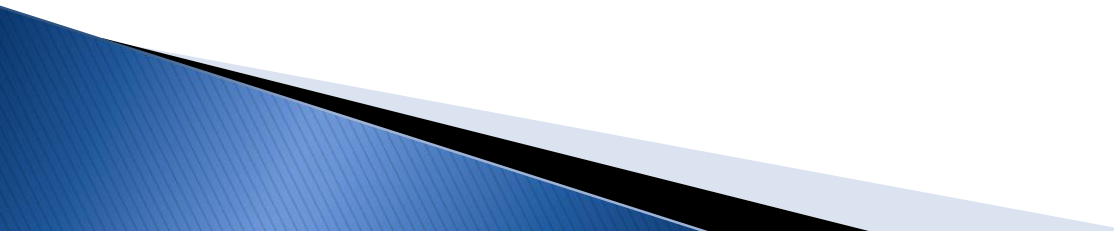
- Extension workers have difficulties reaching the whole area of jurisdiction to collect data as they have several other responsibilities
  - data is only collected on an intermittent basis and information flows are delayed
- No independence from political authorities and no supervision from the National Statistical Agencies
  - data are not validated
- Reports by agricultural extension staff are based on data collection forms that lack standardisation
  - reporting errors and inconsistencies

Data processing, access & use

- Most admin data are not turned into usable information
- A large portion of admin data are not disseminated
- In most developing countries, admin data are only used to produce final statistical estimates

Preliminary results of GS research programme

Main reasons for the use of admin data:

- Traditional system for data collection, low cost
- Low budget for statistics & high survey cost
- Low response rate in surveys
- Need for statistics at the lowest geographical level
- Need for statistics on rare events
- Need for timely data (i.e. for early warning and pre-harvest crop forecasting)

The 2030 Agenda: implications for agricultural statistics

- 19 multidimensional agricultural-related SDG targets
  - 25 global indicators, many new indicators, not produced by NSOs
- & substantial data gaps for monitoring agricultural-related SDG targets
  - Administrative data can contribute to produce 12 ag-related SDG indicators
- Ambitious agenda: i.e. not only reducing, but eliminating hunger (accuracy of indicators for values close to 0)
  - Administrative data can be combined with survey data to improve survey estimates
- Emphasis on monitoring inequalities within countries (need for highly disaggregated data)
  - Administrative data can be used to disaggregate survey estimates

Agricultural–related SDG indicators from admin data

- **Goal 2:**
  - ◦ **2.4.1** - % of agricultural area under productive and **sustainable agricultural practices**
  - ◦ **2.5.1** - Number of **plant and animal genetic resources for food and agriculture secured in either medium or long term conservation facilities**
  - ◦ **2.5.2** - % of **local breeds, classified as being at risk**, not-at-risk or unknown level of risk **of extinction**
- **Goal 5**
  - ◦ 5.a.1 - % of people with ownership or **secure rights over agricultural land** by sex;
  - ◦ 5.a.2 - % of countries where the **legal framework guarantees women's equal rights to land ownership** and/or control

Agricultural–related SDG indicators from admin data

▶ **Goal 14:**

◦ **14.4.1** - % of fish stocks within biologically sustainable levels

◦ **14.6.1** - Progress by countries in the **degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing**

◦ **14.b.1** - Progress by countries in **adopting and implementing a legal/regulatory/policy/institutional framework which recognizes and protects access rights for small-scale fisheries**

◦ **14.c.1** - Number of countries making progress in ratifying, accepting and implementing through **legal, policy and institutional frameworks,** ocean-related instruments that implement international law, as reflected in UNCLOS, **for the conservation and sustainable use of the oceans and their resources**

Agricultural-related SDG indicators from admin data

▶ Goal 15:

  ◦ **15.1.1** - Forest area as a percentage of total land area

  ◦ **15.2.1** - Progress towards **sustainable forest management**

  ◦ **15.3.1** - Percentage of **land that is degraded** over total land area

  ◦ **15.6.1** - Number of countries that have adopted **legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits**

Improving admin agricultural data

Statistical production and dissemination

▸ Admin data can contribute to produce **direct estimates of the SDG indicators** (or of their components)

▸ Admin data in conjunction with other sources can be used to develop **Sampling frames**

▸ Admin data can be combined with surveys to **provide disaggregated - local level statistics** (small area estimation)

- Example of Tanzania Ag. Routine data to be combined with USDA supported ag production survey to provide district level estimates

▸ Admin data can be combined with surveys **to improve reliability of survey results** (auxiliary var. at design and/or estimations levels) or to **validate and correct the data generated by administrative sources** (i.e. sample audit system).

Improving admin agricultural data

Administrative and Statistical processes

- Establish a legal framework underpinning the administrative data collection activity and governance issues.

- Make the agricultural statistics production process more objective and transparent through automation and digitization of processes.

- Revise admin forms and prepare manuals for data collection

- Establish unique identifiers for the statistical unit

- Introduce overlapping variables to establish linkages and creating integrating factors with survey data

- Train admin workers collecting data and strengthen control and supervision under the responsibility of the NSO

Improving admin agricultural data

Statistical Capacity Development

▸ SUBSTANTIAL SUPPORT NEEDED for improving the quality and use of admin agricultural data in developing countries:

  ◦ Support to the improvement of the legal and admin framework

  ◦ Support to the improvement of the statistical processes within the line ministries, collaboration with the NSO

  ◦ Training on improved statistical methods

  ◦ Technical assistance for the effective adoption of the improved statistical methods