Statistical farm register:
background

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Summary

- Context

- Objectives

- Main steps and processes: assessing eligibility

- Lessons lerned

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Context

- Need to recourse to administrative data sources

  (FAO 2020 Programme – World agricultural census;

  EU Regulation *in draft* for the 7° Agricultural census 2020)

- Increase efficiency, timeliness and frequency of data

  release, minimize the response burden and costs

- National statistical programme (answer mandatory,

  administrative sanction for all units included in the sample list)

- *Business register (Reg 1177/2008)*

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Objectives of a SFR

- Selection of stratified or simple samples of agricultural holdings to be included in structural or sectorial surveys;

- Dissemination of information on basic structure of agricultural holdings;

- Updating on annual base, in order to give the opportunity of historical trends on the agricultural farms structure

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Main Steps

*Study visit – Rome 2017
Viviano presentation*

- Identification and pre-treatment of administrative dataset to be included

- Identification of statistical surveys to be included

- Integration of the different databases

- Strategies to assess

    - identification of the agricultural holding unit

    - eligibility rules of the units

    - under-coverage and over-coverage of the settled list

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FR implementation in Istat since 2008

✓ 2008 Integrated Base of Administrative Sources (BIFA)

✓ 2008 - 2009 Survey to check coverage and quality of the first

draft of farm register (CLAG)

=> main aim was to assess elegibility rules used to identify

units to be included in the register

2010 release of the pre-census list for the realization of the

6° agricultural census (that substituded the pre-census

survey done in order to get from the municipalities the

holdings list to be surveyed through census)

RiCofarm – Bellini - EU Twinning Project IL/12 CRIS 2015/370-467 Component C: Infrastructures for agricultural statistics
ICBS – Jerusalem 12th – 15th June 2018

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Farm register implementation in Istat since 2008

………follow

- 2011 Post census enumeration

  2014/15 FR 2013 implementation

  2016 Survey to support Farm register implementation

  2017/18 FR 2014 implementation

…..in the meantime
- Extraction of samples for agricultural survey

….in the next future

- Direct release of data

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Process: analysis of AGCensus and PES results

- 6th Census of the Agriculture was run on a frame list generated on the integration of 17 statistical and administrative sources
- Outcomes of the Census and of the related PES were used to asses rules of eligibility and relevance of the sources used
- Outcomes of the survey to control Farm Register (overcoverage and eligibility rules) - run on the base of 10 integrated data sources - were used to assess eligibility rules and move from a deterministic approach into a probabilistic one

Agr Census results: Reliability of the sources

B1 (agricultural holdings according to the statistical definition),
B2 (non-respondent units)
B3 (out of target or non-agricultural or ceased or duplicated units)

Databases	Units	% on B1	% on B2	% on B3
Integrated Administration and Control System (IACS)	1.698.570	85,4	2,7	11,9
Animal Register	344.652	75,7	2,7	21,6
Land's property income (RA)	1.354.883	83,9	2,6	13,5
Chamber of Commerce	1.035.388	81,3	4,5	14,1
VAT on agricultural income	777.083	83,5	2,9	13,5
Cadastre	1.613.693	83,2	3,0	13,8
Business Register	1.365.635	83,1	3,0	13,9
Agricultural census	1.009.795	84,2	2,5	13,3
Statistical list of Public Bodies	8.479	28,9	0,9	70,2
Statistical list of non-profit organization	3.327	38,4	3,4	58,3
Statistical list of Agritourisms	20.961	77,5	2,9	19,5
Statistical list of PDO/PGI farms	14.952	82,0	0,9	17,2
Units with vegetables in the tax declaration	75	53,3	14,7	32,0
Wine producers' declaration	219.179	89,2	1,5	9,3
Survey on agri-food products in Campania	3.381	74,8	4,5	20,7
Farm Structure Survey	41.077	83,5	2,4	14,1
List of Common Land	4.857	39,7	1,4	58,9

Agr Census results: over-coverage, assessing related rules of elegibility

Outcome of the field work	All units (included in the Census list or discovered in the field)	
	Number	**% comp.**
Number of holdings with completed questionnaires	2.137.030	100,0
B1 -Agricultural holdings (*)	1.706.240	79,8
- of which active (**)	*1.655.510*	*77,5*
- of which temporary not active	*50.730*	*2,4*
B2 -Non-respondent units	74.758	3,5
- of which for holder untraceable	*50.389*	*2,4*
- of which refusals	*2.447*	*0,1*
- of which for other reason	*21.922*	*1,0*
B3 - Not existing or duplicated units	356.032	16,7
- of which out of the field of observation (only with kitchengarden, only with animals for self-consumption, only with wooded area)	*50.935*	*2,4*
- of which non-agricultural units	*56.826*	*2,7*
- of which definitively ceased	*46.100*	*2,2*
- of which with whole activity rented or sold to other holding	*161.191*	*7,5*
- of which duplication in the list	*40.980*	*1,9*

(*) of which in EU frame 1.654.954 , out of EU frame 51.286
(**) of which in EU frame 1.620.884 (published data), out of EU frame 34.626

PES results: under-coverage, assessing related rules of elegibility

Under- coverage was due mainly to:

➢ "New" units derived from units included in the census list (due to dismemberments, mergers or total land/livestock transfers)

➢ Units considered non-eligible (under-coverage of 89.000 units): this group was further analysed in order to revise the connected eligibility rules

Under-coverage components	Rate
Not existing units in any source	3,93
Units existing in one or more source but non elegible for the Census list	4,87
Non-respondent, nt existing or duplicated units at the Census	2,25
Units classified as out of targe at the Census	0,65
Total	11,70

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Assessing elegibility rules

➢ Outcomes of the 2010 Census where used to assess reliability of the eligibility rules

➢ Rules not verified by outcomes (high eligibility / outcome as never been agricultural unit) where assessed by specific control survey (RiCofarm)

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METHODOLOGY FOR MANTAINING THE FR

• *On the platform/tools for mantaining the farm register*

The first phase for the treatment of sources takes place on a centralised level (it is essential that the treatment is centralized: homogeneous and standardized criteria applied to sources). A unique platform has been created for all Istat: the integration system for administrative data (SIM).

The main characteristics of the SIM:

1. *Check the stability over time of the administrative sources (AD). A basic concept to underline is that those sources are not under the control of the NSI, but of the proprietary entity, so these can change them according to their demanding, often dictated by the legislator, then out of control of the NSI. The basic thing is to be aware of these variations by ensuring from the owner the trasmission of all the information necessaries to understand the variations and where/how.*

2. *The second fundamental point performed at the centralized level is the identification of the analysis unit. The SIM provides verification over time of the stability of the unit and the attribution of what we have called the **single statistical code***. *This is valid if made in one place and throughout the NSI, otherwise you would certainly have different solutions and not Non-homogeneous within the NSI.*

The SIM: The ISTAT Integrated Micro-data Repository for social and economic statistical units

Data from different sources are linked by a subset of variables depending on the typology of integration subsystem

For the time being, about 60 sources (more than 500mln recs.) are integrated and reconciled by analyzing the logical connections among them

Main goals

To realize a unified view of micro-data;

To Integrate information collected by administrative (Ads) and statistical sources

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The SIM: Characteristics

SIM develops a data set of auxiliary information for describing:
– data (metadata);
– processes used to build up the SIM.

The SIM include social and economic data:
– individuals and household characteristics (demographics, status in employment, educational, ….);
– places (residence, work, school, etc.);
– typology of the unit where people perform their activity / life - houses, schools, places of work, etc.;
– typology of relationships among individuals, units, places, ..(in a school like student, teacher, …).

The SIM: Integration means

•To identify each **entity** (economic units *and their relationships*) in different sources with a ***unique*** and ***stable*** (over time) ***ID number***

•To define, for each **entity,** the logical and physical relationships (*in the time and the space*) among information available from different sources.

Output
data structures having elementary units belonging to specific statistical populations (economic units, workers, place of work, …..) useful to:

– Realize statistical registers (economic units, local units, employed, ……)
– Support statistical surveys (for ex. to stratify)

Sub-system of units

- Economic Units:

    unities related to the natural or legal person having VAT code (economic unit) BR

- Individuals: Usual residents and households registers;

- Individuals' places:

    places of residence, of fiscal address, of telephone or electric uses etc.. For the analyses of the relationships with the places where to live, work or study –

    Places register;

- Local Units':

    location of the economic unities – Local unit register (use of land for economic purposes);

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Sub-system of Relationships

– Among Economic units   Econ. Point of view

Enterprise / Enterprise (Events of transformation), Enterprise / Legal unit, Enterprise / Local unit, Enterprise control/ ownership relations;

– Between Individuals / Economic Unit: Soc/econ Pov

integrated subsystem of the typology of links among the individual and where he performs his activity with a particular focus on worker characteristics such as demographic and job variables (type of contract, job qualification, etc) – LEED;

– Among natural people   Social point of view

 subsystem of the household-ties - .....

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METHODOLOGY FOR MANTAINING THE FR

• *Process documentation*

Official documentation produced at the time of the official releases (Acts for agricultural census, and for the other surveys, with description of the methodology followed – see Indexes of the various reports).

SFR still in internal management without official release, apart Documentation produced for Eurostat (Grant).

METHODOLOGY FOR MANTAINING THE FR

- ***Prioritizing, when two or more sources contain data for the same variable with potentially different values (Decision hierarchy)***

Not only a "hierarchical" decision is applicable

There are other methods in the literature as record linkage and probabilistic methods.

Moreover an ad hoc survey can be run or a specific module can be added to a routinely run survey

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METHODOLOGY FOR MANTAINING THE FR

- *What surveys are the most essential to collect at routine basis*

So far Agricultural census Agritourism AH produciing under quality scheme
In the Next future FSS2016 ; half yearly livestock survey, FADN, crop forecast survey

It has to be underlined that AD statistical sources are used together in order to improve the quality of the statistical output

- *How to keep the farm register updated between censuses (sources, frequency of update)*

It depends on the frequency of the AD data release
The best would be to have an annual update

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HOW TO DEAL WITH ACTORS AND AD SOURCES

- ***Whom are the actors and what are their contribution***

Liste utilizzate e relativi fornitori (citare fonte)

- ***How to ensure quality and reliability***

DEFINE AND SIGN "AGREEMENT" BETWEEN OWNER E NSI
in order to garantee annual supplies of data sets and knowledge of any changes in the source

The changes can be of two types
- *due to change of rules (check CAP changes)*
- *due to process changes (processing of data) by the owner.*

In both cases, a common table discussing statistical experts and industry experts is essential.
These tables (variously called) are present in all the NSI whether they use massively AD.

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ANNEXE

Eligibility rules of the 2013 Farm register

List Number	Input sources	Rule number	Description	Eligibility
1	IACS with land	1	unit coming from IACS without duplicated parcels	YES
		2	unit coming from IACS with duplicated parcels	NO
	IACS without land	3	unit coming ONLY from IACS without parcels	NO
		4	unit coming ONLY from IACS without parcels and census	NO
		5	unit coming ONLY from IACS without parcels and CC/VAT	NO
		6	unit coming ONLY from IACS without parcels, census and CC/VAT	NO
	Animal Register	7	unit coming from animal register with livestock	YES
		8	unit coming from animal register without livestock but coming also from IACS or CC/VAT or RA/cadaster or PDO/PGI or agritourisms	YES
		9	unit coming ONLY from animal register and AC, with livestock for self consumption or already included or ceased in the business register	NO
		10	unit coming ONLY from animal register and AC, without livestock	YES
		11	unit coming ONLY from animal register without livestock	NO
		12	unit coming ONLY from animal register, IACS without parcels and AC, without livestock	NO
		13	unit coming ONLY from animal register and IACS without parcels, without livestock	NO
2	Land's property income and Cadastre	14	Partnerships or Istitutions with taxable income from farming > 0, with agricultural NACE in CC/VAT and not ceased in the Business Register	YES
		15	Units with at least 50% taxable income from farming coming on rented land	YES
		16	Units with flowers NACE in CC/TVA or in the Business Register and flowers in cadastre	YES
		17	Units with citrus fruit in cadastre >= 50 area and without common UAA with other units	YES
		18	Units with vineyard in cadastre >=1 hectare and without common UAA with other units	YES
		19	Units with fruit trees in cadastre >=1 hectare and without common UAA with other units	YES
		20	Units with olive trees in cadastre >=1 hectare and without common UAA with other units	YES
		21	Units with arable land in cadastre >=1 hectare and without common UAA with other units	YES
		22	Units with permanent grassland in cadastre >=10 hectare and without common UAA with other units	YES
		23	Units with all farming area in common with other units	NO
		24	Units with all farming area in common with other units except less than 1 hectare	NO
		25	Units with >= 50% of UAA in common with other units	NO
		26	Units with >= 50% of taxable income from farming let on lease	NO
		27	Units with agricultural NACE in CC/TVA and active in the Business Register	YES
		28	Residual units	NO
3	VAT on agricultural income and Chamber of Commerce	29	Ceased units in the Business Register before 2013	NO
		30	Units without agricultural NACE in CC or/and VAT	NO
		31	Units with agricultural NACE in CC or/and VAT, active in the Business Register but with NACE on services in agriculture	NO
		32	Units > 5 hectare with >= of UAA in common with other units	NO
		33	Units with agricultural NACE in CC/TVA and with < 50% of UAA in common with other units	YES
		34	Residual units	YES
4	Farms with DOP/IGP products	35	Units coming only from farms with PDO/PGI products	YES
	Agritrurisms	36	Units coming only from agriturisms	NO
	Agricultural Census	37	Units coming only from AC, active or non repondent in AC, with common land or minor livestock	YES
		38	Other units coming only from AC	NO

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Thanks for paying attention!

SOURCES

Workshop on access to administrative data sources (Brussels, 13-14 September 2016)

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