Taiex Workshop
Improving data collection and the Use of the Farm Accountancy
Data Network (FADN)

Belgrade, 15-16 September 2016
Serbia

FADN DATA QUALITY CONTROL
DATA QUALITY CONTROL ON DATA COLLECTOR, LIAISON AGENCY AND EUROPEAN COMMISSION LEVEL

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Council for Agricultural Research and Economics
Center for Policies and Bio-Economics
Rome

CRA
Agricultural
Research Council

INEA
National Institute of
Agricultural
Economics

CREA – Council for Agricultural Research and Economics born in 2015 as a merge of **CRA** and **INEA**, two agencies that operated under the supervision of the Ministry of Agricultural, Food and Forestry Policies.

CREA is divided in 12 centres:

- 6 related to specific areas: genomics and bioinformatics; agriculture and environment; protection and certification; agricultural engineering and processing; food and nutrition; policies and bio-economy

- 6 related to the supply chain: crops and industrial crops; arboriculture; viticulture and enology; horticulture and floriculture; animal husbandry and aquaculture; forests and wood products.

Liaison Agency for FADN + National Rural Development Policies (National Rural Net) + Forest Observatory → Economic and policies analysis, technical assistance for the Ministry of Agriculture, Food and Forestry

CONTENTS

- General organisation of FADN in Italy

- Division of tasks among advisors, data collectors and farmers

- The main steps of working with farmers: how to regularly record data?

- FADN data quality control and validation: how to check the errors at different level?

The presentation is focused mainly on the Italian experience

GENERAL ORGANISATION OF FADN IN ITALY

European Level: the European FADN Committee is responsible in the European Commission to give guidelines and to collect the data. It is located in Brussels.
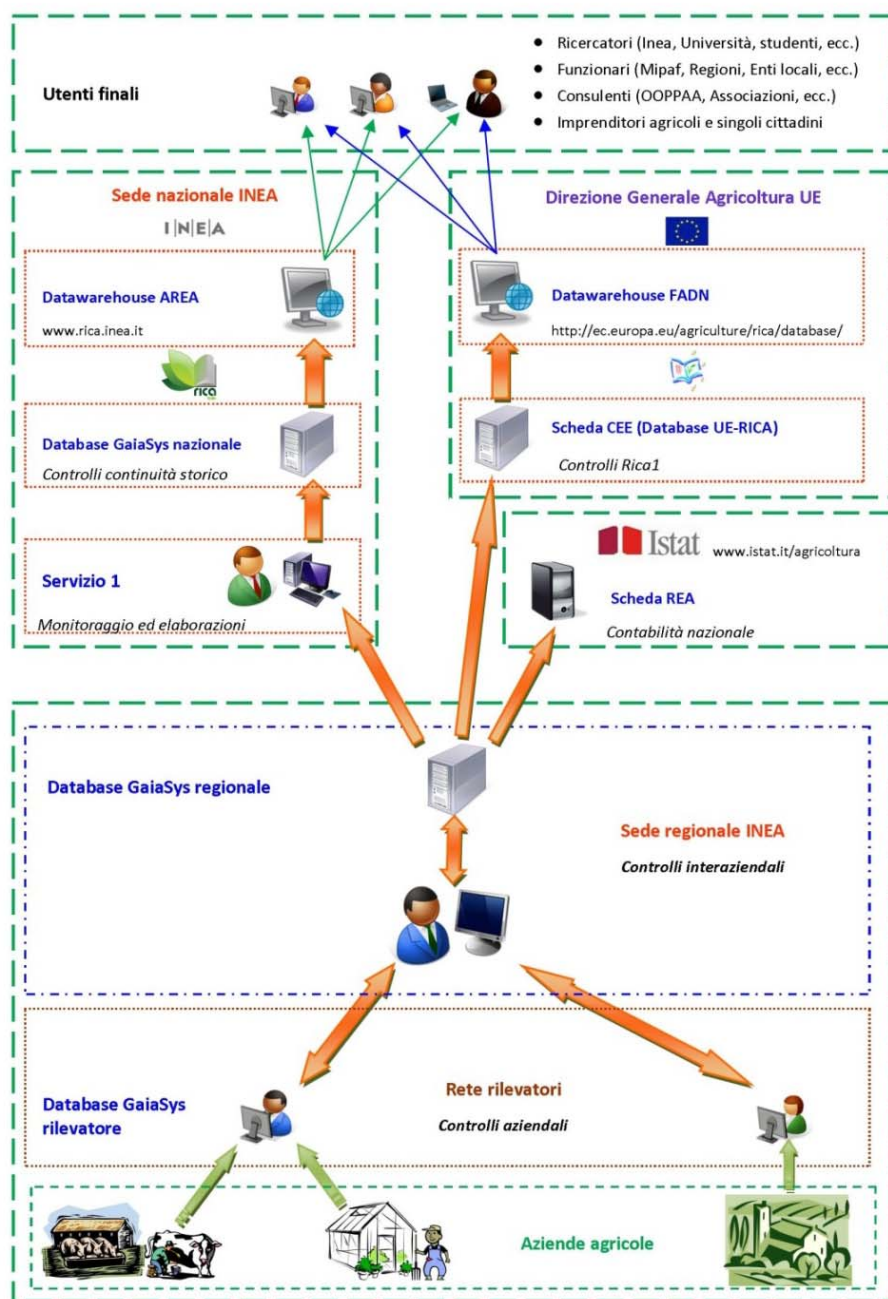
Member States are responsible for survey on their territory. They designate two authorities:

- The Liaison Agency which collect the data and forward them to the Commission (CREA-PB in Italy, in Rome)
- A National FADN Committee which is responsible for the selection of holdings and other technical aspects.

In Italy there are 20 FADN Accounting Offices (one per region) that collect data and provide them to the Liaison Agency (national level).

GENERAL ORGANISATION OF FADN IN ITALY

- The definition of the FADN sample and the field of observation is a joint effort of CREA-PB and ISTAT (National Institute of Statistics), on the basis of the results of Agricultural Census (every 10 years).

- The field of observation is stratified according to 3 criteria: region, economic size and type of farming. Farms are selected in the sample according to a Selection Plan that guarantees the representativeness of Italian agriculture.

- An individual weight is applied to each farm in the sample.

- Sample size for Italy: 11,137 holdings

- Economic dimension: min 8,000 € standard output (Reg. 1291/2009)

- Each year some farms decide to leave FADN and there is an annual sample turnover rate: Italy has on average 20-25% (one of the highest sample turnovers rates in EU).

Diagram labels (left):

Utenti finali
- Ricercatori (Inea, Università, studenti, ecc.)
- Funzionari (Mipaf, Regioni, Enti locali, ecc.)
- Consulenti (OOPPAA, Associazioni, ecc.)
- Imprenditori agricoli e singoli cittadini

Sede nazionale INEA

I|N|E|A

Direzione Generale Agricoltura UE

Datawarehouse AREA
www.rica.inea.it

Datawarehouse FADN
http://ec.europa.eu/agriculture/rica/database/

Database GaiaSys nazionale
Controlli continuità storico

Scheda CEE (Database UE-RICA)
Controlli Rica1

Servizio 1
Monitoraggio ed elaborazioni

Istat   www.istat.it/agricoltura

Scheda REA
Contabilità nazionale

Database GaiaSys regionale

Sede regionale INEA
Controlli interaziendali

Database GaiaSys rilevatore

Rete rilevatori
Controlli aziendali

Aziende agricole

Text boxes (right):

Final users:
- Researchers
- Public administrations
- Agricultural Organizations
- Farmers or other users

DB Gaiasys: it is organized in a DB on line and in a DWH

DB UE FADN: it is organized in the FADN DWH

The Accounting Offices produces 3 kind of archives:
1. REA archive for ISTAT
2. National Farm Return for DB Gaiasys
3. RICA1 Farm Return for European Commission (DB EU)

Data collectors send the archives to the Accounting Offices, responsible of FADN at a territorial level. They check the data and finalize the quality control with a specific set of quality tests.

- Data collectors go to the farmers to gather all the information required by the Farm Return. They can go more than one time. Some information are available on administrative databases (for instance public subsidies). First level of control.

- Definition of the list of farms from the National Selection Plan
- Recruitment of the data collectors (single or associations)
- Distribution of the farms among all the data collectors

GENERAL ORGANISATION OF FADN IN ITALY

The Farm Return is a questionnaire used to determine the incomes of agricultural holdings and to analyse their business operation in a given accounting year.

The contents of Farm Return are established by EU regulations, amended during the time to take into account changes in policy, specific accounting needs, new Member States, etc.. Farm Return is a legal text and modifications are difficult to achieve but it si possible to collect additional data for national purporses. In 20 EU Member States....

| Community FADN Farm Return | ≠ | National FADN Farm Return |

National FADN Farm Return must collect at least all the accounting information required by the Community FADN Farm Return.

The Community FADN Farm Return is more limited in its coverage of farming activities than many of the regional and national Farm Returns: in Italy the national one contains more information used for specific analysis (environment, irrigation, mechanization, etc.) and only one part of collected information is transmitted to EC.

(See the end....)

GENERAL ORGANISATION OF FADN IN ITALY

In Italy, FADN is implemented not only to respond specifically to the needs of the European Union, but also to satisfy specific national needs concerning the economic research in agriculture, the knowledge of policy effects, the socio-economic aspects of agriculture at micro-economic level. Usually FADN is used to carry out a very wide range of different analysis:

- Analysis on production cost in agriculture
- Impact of CAP (first pillar) measures at farm level and evaluation activities of the Rural Development Programmes (RDPs)
- Demand for agri-environmental indicators
- Detailed benchmarks of farms and analysis of the structural changes
- Efficiency analysis and assessment of farm performance
- Tools for agricultural advisors and trainers
- Support to the Ministry and other regional administrations

DIVISION OF TASKS IN FADN SURVEY

FADN is a direct survey, consisting in:

- a relationship based on trust between the farmer and the data collector
- an accounting service for the farmer, implemented through a farm management software and its outputs.

The implementation of FADN requires:

- Definition of the Farm return
- Recruitment of data collectors on the basis of their curriculum and professional experience
- Territorial Accounting Offices (in Italy the 20 CREA Regional offices)
- Contact with farmers who must regularly record accounting data.

The success of the survey depends on the good relationships among all the actors involved.

TASKS OF ACCOUNTING OFFICES, DATA COLLECTORS AND FARMERS

Accounting Office Trentino Alto Adige (Trento and Bolzano)

Location: Padua (Veneto region) in the north-east of Italy

The Accounting Office of Trentino Alto Adige implements the FADN survey for the Autonomous Province of Trento (→ Trentino) and Bolzano (→ Alto Adige).

The survey is carried out separately (each Province has its own selection plan, survey scheme, type of farms, etc.).

Trento → 279 holdings (3 Agricultural Organisations, 5 data collectors)

Bolzano → 338 holdings (1 Agricultural Organisation, 3 data collectors)

TASKS OF ACCOUNTING OFFICES, DATA COLLECTORS AND FARMERS

At territorial level, the survey can be organized in different ways:

1. The Accounting Offices organize the survey assigning farms to the Agricultural Organizations (as in Trentino Alto Adige) that gather information using their workers and their administrative databases. Normally the lists include the associated farms in order to make the survey easier.

2. The Accounting Office define the regional sample and then distribute the list directly among the data collectors. The number of farms assigned to each of them depends on their time availability and on their difficulties to visit each farm.

In every case it is important that the data collectors have the right competences in agriculture and a knowledge of the regional/local agriculture. Accounting Office is responsible of the training.

This is important because the first data validation is made at a farm level and data collectors are the first responsible of the data quality.

TASKS OF ACCOUNTING OFFICES, DATA COLLECTORS AND FARMERS

WHAT ARE THE TASKS OF THE ACCOUNTING OFFICE?

1. **Relationships with the data collectors**: at the beginning of every accounting year the AO organizes a meeting with the data collectors to resume the results of the previous year and to inform about changes in the survey methodology, updatings in the software, etc.. Problems and difficulties are discussed in this meeting.

2. **Training**: the responsible of the AO organizes training sessions for the new data collectors concerning the structure of FADN and the use of GAIA software

3. **Collecting the results of Farm Return at the end of the survey**: each data collector send the archives to the AO at the end of the survey, after the implementation of the first level of control tests.

4. **Checking and control**: once the survey is finished, the AO implement the control procedure on the the whole sample. The procedure is carried out in GAIA (at national level) and in RICA1 (Coherence tests in the EC website).

5. **Transmission** of the archives to the Liaison Agency

6. **Dissemination activities**: analyis of data at a regional and national level

TASKS OF ACCOUNTING OFFICES, DATA COLLECTORS AND FARMERS

WHAT ARE THE TASKS OF THE DATA COLLECTORS?

1. **Relationship with farmers**: data collectors must visit the farm, talk with the farmer and collect all the information required by the Farm Return. There is a low level of bookkeeping and accounting practice in the agricultural sector and general accounting rules do not adapt very well to the characteristics of farming. Data collectors must organize the survey taking into account this aspect and, if necessary, estimating the different items in an objective way.

2. **Promotion activities**: data collectors promote the dissemination of accounting at farm level, encouraging the professional growth of farmers

3. **Training**: data collectors must have competences in agriculture and, if necessary, they must follow the training sessions organized by the competent Accounting Office.

4. **Checking the quality of data**: data collectors implement the survey using the specific software GAIA and checking the quality of data running a first level of controls (GAIA Test).

5. **Transmission** of the archives to the Accounting Office at the end of survey.

TASKS OF ACCOUNTING OFFICES, DATA COLLECTORS AND FARMERS

WHAT ARE THE TASKS OF THE FARMERS?

Agricultural holdings have specific characteristics, different from the other sectors that may lead some difficulties in the accounting process. Farmers who partecipate to FADN survey can improve the quality of data with some arrangments in the general management of their farm.

- Defining exactly every single plot: total area, value, etc.

- Drawing up an inventory of machinery and equipments, their value and lifetime

- Identifying the production processes and the technical management concerning cultivation, maintenance and harvest

- Recording the most important costs and revenues, credits and debts
- Storing of all the documents (invoices, receipts, etc.) that can help the data collector in making the survey

HOW TO REGULARLY RECORD THE DATA?

In 2008 Italian FADN system changed the software used to collect accounting data, transforming the accounting survey in a more flexible instruments able to meet the needs coming from farmers and data users. In particular, the new software GAIA (Gestione Aziendale delle Imprese Agricole) strenghten the presence of farms inside FADN system, giving them a tool for their business management (Financial statement, efficiency indicators, etc.), improving their managerial skills and giving them the opportunity to follow the dynamics of the farm and to monitor the cost and revenues every year.

More needs for managerial skills of farmers

Evolutionary dynamics of farms and increased use of multifunctional activities

Lack of market software products targeted to the overall management of farms

Claim for software for business management of farms (GAIA)

HOW TO REGULARLY RECORD THE DATA?

The software is organized following a rigorous accounting method (technical and economic information; financial and capital assets) based on National, European and International accounting rules (IAS41).

1.   <u>Data collectors</u> of FADN network: the software is used to collect accounting information from the selected farms

2.   <u>Farmers</u> who take part or not in FADN: the software can be used by farmers to control their farm management (Financial Statements, indicators, etc.)

3.   <u>Agricultural extension and advisory services:</u> GAIA can be used for the provision of tools for the management consulting farm

4.   <u>Agricultural education</u> : GAIA can be useful for training and professional growth of farmers

It can be downloaded and updated from a dedicated website (free)

http://www.gaia.inea.it/download.asp

HOW TO REGULARLY RECORD THE DATA?

1. Definition of farm context (enterprise – farm – center sub-farm)

2. Structural data and Inventories (land, livestock, buildings, machinery, warehouse stocks, etc.)

3. Technical Management of
   a. farm land (plantations and crops)
   b. farm labor (household, employee, seasonal worker)
   c. stores (internal uses of agricultural products and business extra-farm)
   d. animals (births, dead, slaughtering, entrusting, outstanding bi-monthly)

4. Management Accounting
   a. Income and Expense (with or without VAT, economic and financial, for farm sector)
   b. Public supports (aid management and investment)
   c. self-consumption, internal replacement, poultry farming, other financial transactions

5. Year-end accounting transactions
   a. Gross margins (production processes of plant and animal)
   b. Development in economy and extraordinary maintenance
   c. Accounting transactions at year end (accounting provisions, etc.)

FADN DATA QUALITY CONTROL

At national and EU level, FADN database is used to support the agricultural policy analysis, so it must be as accurate as possible in every step.
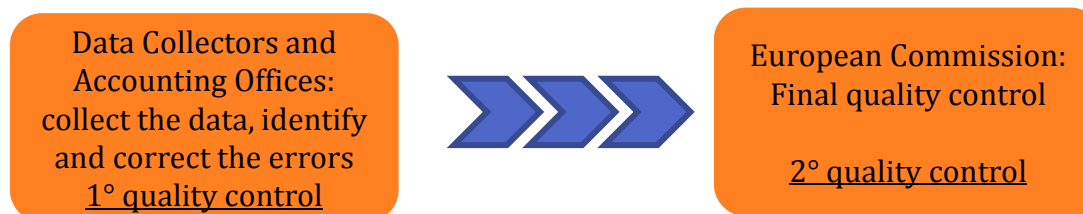
<u>What could be the origin of the errors?</u>
- Distraction or negligence during the survey
- Lack of information or partial information (i.e.: farmer does not give all the elements essential for the survey)
- Inchoerence (i.e. yield values too much high, prices of products too much high or low, high number of workers, etc.)
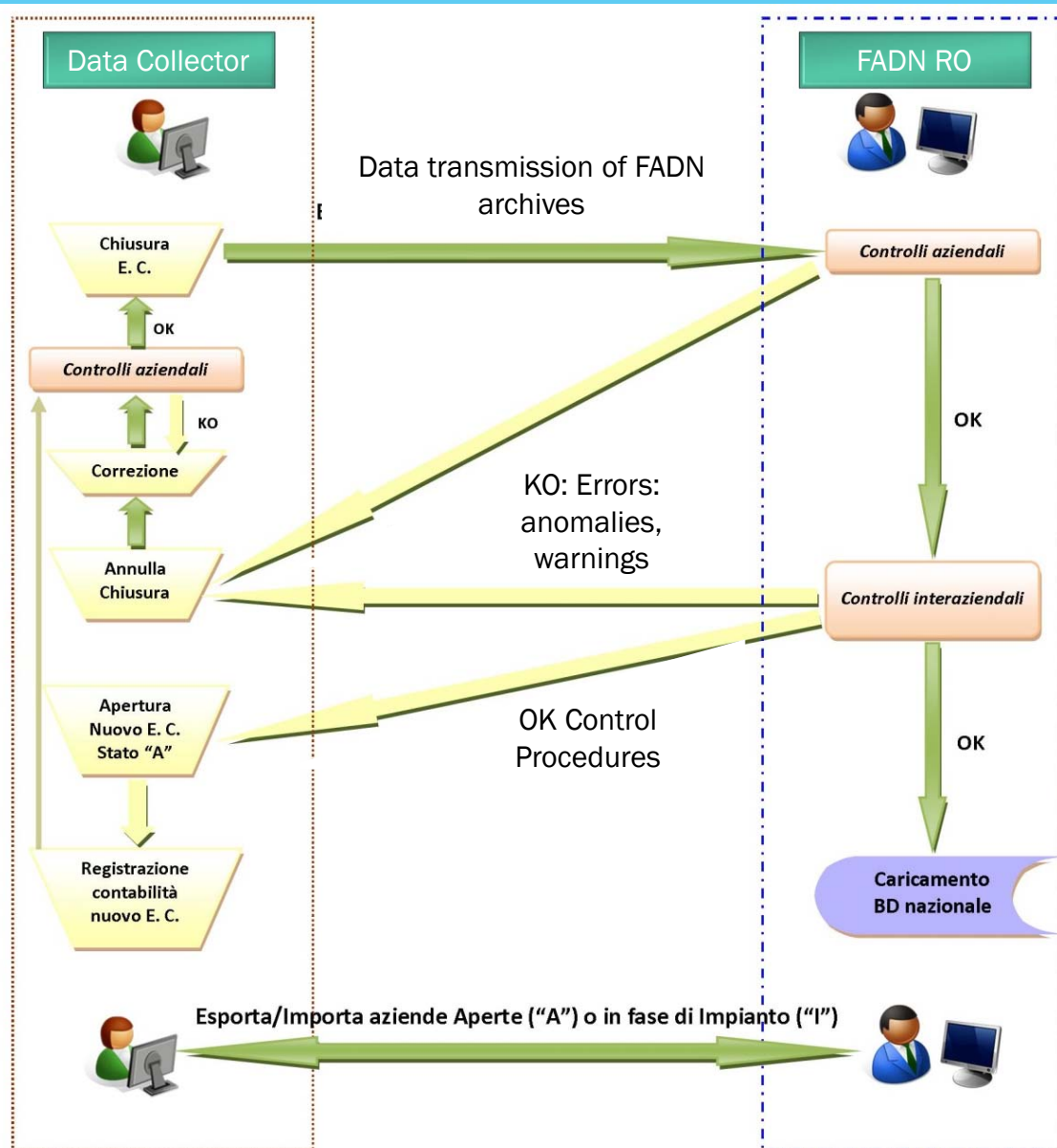
Data Collectors + Accounting Offices (at national level) and European Commission in RICA1 (at EU level) must be careful that any error in FADN is identified and corrected (or explained).

Data Collectors and Accounting Offices → quality control before the data are transmitted to the European Commission system (RICA1). They use their own control procedures (GAIAtest), at farm level or at aggregate level, following the standard required by the Commission.

European Commission → final quality control in RICA1

| Data Collectors and Accounting Offices: collect the data, identify and correct the errors
 <u>1° quality control</u> | >>> | European Commission: Final quality control

 <u>2° quality control</u> |

FADN Data quality control

Data Collector

FADN RO

Data transmission of FADN archives

Chiusura E. C.

OK

Controlli aziendali

KO

Correzione

Annulla Chiusura

Apertura Nuovo E. C. Stato "A"

Registrazione contabilità nuovo E. C.

Controlli aziendali

OK

KO: Errors: anomalies, warnings

Controlli interaziendali

OK Control Procedures

OK

Caricamento BD nazionale

Esporta/Importa aziende Aperte ("A") o in fase di Impianto ("I")

Data collectors record all the accounting data on the software GAIA. They made the first quality control and then transmits the FADN archives to the FADN Regional Accounting Office that complete the procedure. If the tests give a positive reply, the AO send the regional archives to the national DB.
If the control tests are negative, the responsible asks to the data collector further information in order to better understand the data or give a justification.

When all the problems are solved (correction or justification), the archives are sent to national FADN DB and data collectors can «open» the archives for the new accounting year.

ARCHIVE = is the file where farm accounting data are stored. In Italian FADN system all the survey is carried out using electronic format.

FADN DATA QUALITY CONTROL

Quality control procedure in Italy (GAIATEST) → follows the same system of RICA1 (European Commission). There are 4 levels of error:

1. **Critical error:** it is the most relevant error. Accounting closing procedures can not be carried out, it can not be justified but it must be corrected (i.e. there is not a farm owner)

2. **Severe errors:** it is a relevant error. Accounting closing procedures can not be carried out, it can not be justified but it must be corrected.

3. **Anomaly:** it evidences a discrepancy of information. It can be corrected or explained if the anomaly is real or if it has a logic (i.e. high/low yields with respect an average, high/low market prices, etc.).

4. **Warning:** it is a small anomaly. The explanation is not compulsory and the accounting closing procedures can be carried out.

Cod.: 2659 **Azienda:** ANDERLE GIORGIO

Cod.	Test	Severità	Esito	Conferma	Annotazioni
AAG_021	ANIMALI GIOV. INGRASSO PESO MEDIO INV. INIZ.	Anomalia	Negativo		
AAG_024	ANIMALI GIOV. INGRASSO PESO MEDIO INV. FIN.	Anomalia	Negativo		
AAV_015	ANIMALI DA VITA PESO MEDIO GRUPPO	Anomalia	Negativo		
BFC_001	PRODOTTO NETTO NEGATIVO	Anomalia	Negativo		
BFC_002	REDDITO NETTO NEGATIVO	Anomalia	Negativo		
BFC_020	REDDITO NETTO PER ULU	Anomalia	Negativo		
BFC_021	REDDITO NETTO PER ULU NEGATIVO	Anomalia	Negativo		
CAS_004	DATI INTEGRATIVI SCHEDA CE	Severo	Negativo		
RCA_003	MARGINE LORDO ALLEVAMENTI LIMITI AD UBA	Anomalia	Negativo		
RCA_004	MARGINI LORDI ALLEVAMENTI INCIDENZA COSTI	Avvertenza	Negativo		
RCC_016	MARGINI LORDI COLTURE LIMITI	Anomalia	Negativo		ok confermato il dato
RCC_017	MARGINI LORDI COLTURE SPESE CONCIMAZIONI	Avvertenza	Negativo		prato soggetto a sola concimazione

Riepilogo Controlli	Negativo	Tot. Test
N° Test:	12	12

Cod.: 45 **Azienda:** ANDREATTI MARCELLO

Cod.	Test	Severità	Esito	Conferma	Annotazioni
CBR_001	AZIENDA SENZA AIUTI PUBBLICI	Avvertenza	Confermato	Dato confermato: non ha ricevuto alcun contributo durante l'a	
CBR_002	AIUTI PAC E PSR	Avvertenza	Confermato	Dato confermato: non ha ricevuto alcun contributo durante l'a	
CBR_036	AIUTI PER INDENNITA COMPENSATIVE	Avvertenza	Confermato	Dato confermato: non ha ricevuto alcun contributo durante l'a	
CLP_003	DURATA TECNICA PIANTAGIONI	Anomalia	Confermato	Dato confermato: in quanto il vigneto venne impiantato nel 19	
RCC_016	MARGINI LORDI COLTURE LIMITI	Anomalia	Confermato	Dato confermato: territorio ad altissima produttività	
RCC_018	MARGINI LORDI COLTURE SPESE DIFESA	Avvertenza	Confermato	Dato confermato: annata particolarmente piovosa e quindi co	

Riepilogo Controlli	Confermato	Tot. Test
N° Test:	6	6

FADN DATA QUALITY CONTROL

The quality control is made at an aggregate level with the inter-farms quality controls. These controls concern a set of variables (i.e. land values, yields, prices, costs and revenues, etc.) which values are compared with a «mobile threshold» calculated on the basis of the selected sample or a «fixed threshold» (determined on the basis of the results elaborated in the previous accounting years, as average of the region).

Plum tree: there are 2 farms with a production=0. No revenues, costs... it can happen.

Specie: **Susino**

DATI IDENTIFICATIVI AZIENDA								**PROCESSO PRODUTTIVO**					**VARIABILI E INDICI**								
Azienda	S	Utente	Prov	Alt	OTE	UDE	CE	Specie	Mod colt	C S	SAU coltura	SAU irrigata	Resa p.p.	P.L.T.	P.L.V.	Spese Totali	Spese specifiche	Reimp aziend	Spese Difesa	Conci_ mazione	Conto_ terzismo	Margine Lordo	Ctrl (*)
2517	C	241006	TN	1	3510	4	Si	Susino	p.c.		0,06	0,00	0,0	0	0	0	0	0	0	0	0	0
2604	C	241006	TN	1	3800	5	Si	Susino	p.c.		0,26	0,26	278,9	14.073	14.073	1.931	1.885	0	1.538	258	0	12.142
2652	C	241001	TN	1	6140	3	Si	Susino	p.c.		0,08	0,08	283,8	18.550	18.550	2.040	1.990	0	815	188	0	16.510
2921	C	241001	TN	1	3510	5	Si	Susino	p.c.		0,16	0,16	458,1	26.448	26.448	1.976	1.976	0	914	250	0	24.472
1022	C	241005	TN	1	3610	3	No	Susino	p.c.		0,07	0,00	0,0	0	0	0	0	0	0	0	0	0
1036	C	241001	TN	1	3510	4	No	Susino	p.c.		0,23	0,00	230,9	13.855	13.855	1.587	1.587	0	1.135	235	0	12.268
2000	C	241001	TN	1	3510	6	No	Susino	p.c.		0,60	0,00	69,5	2.920	2.920	843	787	0	428	217	0	2.076
Nr processi Susino :						7					Media:			10.835	10.835	1.197	1.175	0	690	164	0	9.638
											Deviazione standard:			10.168	10.168	913	903	0	578	114	0	9.340

Almost all gross margin values are over the average but 2 cases are «strange»: the highest one (24,472 €/ha) and the lowest one (2,076 €/ha). These cases must be further checked

FADN DATA QUALITY CONTROL

The quality control procedure applied by the European Commission is the second step of quality control of FADN data. Once the dataset is transmitted to European Commission, there are further procedures implemented for ensuring the quality of data. Most of them are the same tests implemented in Italy with GAIAtest.

Errors can be due to:
- Operator's mistake
- Mistakes in conversion programmes
- Mistakes made by data collectors in completing the Farm Return
- Unlikely values (i.e. yields over the expected limits, following the Liasion Agency indication).

In RICA1 there are 46 series of test that detect and identify possible errores, inconsistent data and unlikely values.

Different level of errors
- Initial
- Critical
- Typology
- Severe
- Anomaly
- Warning

Session details			Test results					
					Failed			
Time ended	Version of tests	Tests	Level	System errors	Non justified	Justified	Total	Success
31.08.2016 17:32:56	12	130846	INITIAL					
			CRITICAL					96584
			TYPOLOGY					247
			SEVERE					13213
			ANOMALY		31	536	567	14678
			WARNING		492		492	5065
Total					523	536	1059	129787

RICA1 COHERENCE TESTS

Number	Description	Tables
1	COHERENCE OF TABLE A (GENERAL INFORMATION OF THE HOLDING)	A
2	COHERENCE BETWEEN TABLE B (TYPE OF OCCUPATION) AND TABLES D (ASSETS), I (CROPS) AND H(INPUTS) AND PLAUSIBILITY OF RENT PAID (TABLES B AND H)	B D I H
3	COHERENCE OF TABLE C (LABOUR)	C
4	PLAUSIBILITY OF THE ANNUAL TIME WORKED, TABLE C (LABOUR)	C
5	PLAUSIBILITY OF WAGES PAID (TABLES C AND H)	C H
6	COHERENCE OF TABLE D (ASSETS)	D
7	COHERENCE BETWEEN TABLE D (ASSETS) AND TABLES I (CROPS), J (LIVESTOCK PRODUCTION) AND F (DEBTS)	D F I J
8	COHERENCE OF TABLE E (QUOTAS AND OTHER RIGHTS) AND TABLES D (ASSETS), H (INPUTS) AND J (LIVESTOCK PRODUCTION)	D E H
9	COHERENCE OF TABLE E (QUOTAS AND OTHER RIGHTS) AND TABLE J (LIVESTOCK PRODUCTION)	E J
10	COHERENCE OF TABLE G (VALUE ADDED TAX)	G
11	COHERENCE BETWEEN INTERESTS PAID AND DEBTS IN TABLES H (INPUTS) AND F (DEBTS)	F H
12	PLAUSIBILITY OF SPECIFIC CROP COSTS IN TABLE H (INPUTS)	H
13	CODIFICATION OF TABLE I (CROPS)	I
14	PLAUSIBILITY OF TABLE I (CROPS) OUTPUT PER HECTARE	I
15	PLAUSIBILITY OF THE TOTAL OUTPUT, OUTPUT OF BYPRODUCTS IN TABLE I (CROPS)	I
16	COHERENCE OF TABLE I (CROPS) AMONG PRODUCT CATEGORIES	I
17	PLAUSIBILITY OF THE PHYSICAL PRODUCTION OF TABLE I (CROPS) AND TABLE K (ANIMAL PRODUCTS AND SERVICES)	I
18	PLAUSIBILITY OF THE OUTPUT VALUE (PRICE/TONNE) OF TABLE I (CROPS), TABLE K (ANIMAL PRODUCTS AND SERVICES) AND TABLE L (OGA)	I K
19	COHERENCE OF TABLE L (OGA)	L
20	COHERENCE OF TABLE J (LIVESTOCK PRODUCTION): VALUES	J
21	COHERENCE OF TABLE J (LIVESTOCK PRODUCTION): AVERAGE NUMBER	J
22	COHERENCE BETWEEN LIVESTOCK, LIVESTOCK PRODUCTS AND OGA (TABLES J, K AND L)	J K L
23	PLAUSIBILITY OF THE UNIT VALUES PER HEAD OF LIVESTOCK, TABLE J (LIVESTOCK PRODUCTION)	J
24	COHERENCE OF DETAILS OF PURCHASES AND SALES IN TABLE J (LIVESTOCK PRODUCTION)	J
25	PLAUSIBILITY OF UNIT VALUE OF SALES AND PURCHASES IN TABLE J (LIVESTOCK PRODUCTION)	J
26	COHERENCE BETWEEN THE CHANGES IN THE NUMBER OF LIVESTOCK IN TABLE J (LIVESTOCK PRODUCTION)	J
27	COHERENCE BETWEEN THE AVERAGE NUMBER OF ANIMALS IN TABLE J (LIVESTOCK PRODUCTION) AND ANIMALS UNDER CONTRACT IN TABLE K (ANIMAL PRODUCTS AND SERVICES)	J
28	PLAUSIBILITY OF THE AVERAGE NUMBER OF ANIMALS IN TABLE J (LIVESTOCK PRODUCTION)	J
29	COHERENCE BETWEEN INPUTS (TABLE H) AND PRODUCTION ACTIVITIES IN TABLES I (CROPS), J (LIVESTOCK PRODUCTION) AND L (OGA)	H I J L
30	PLAUSIBILITY OF FEEDSTUFF COSTS IN TABLES H (INPUTS) AND J (LIVESTOCK PRODUCTION)	H I J L
40	COHERENCE OF TABLE M (SUBSIDIES)	M
41	COHERENCE BETWEEN TABLES M (SUBSIDIES) AND B (TYPE OF OCCUPATION)	B M
42	COHERENCE OF TABLE M (SUBSIDIES) AND E (QUOTAS)	E M
43	COHERENCE BETWEEN TABLES M (SUBSIDIES) AND J (LIVESTOCK PRODUCTION)	J M
44	COHERENCE OF TABLE M (SUBSIDIES) AND D ASSETS	H J M
45	COHERENCE BETWEEN TABLES M (SUBSIDIES) AND H (INPUTS)	H M
46	COHERENCE BETWEEN TABLES M (SUBSIDIES) AND I (CROPS)	I M
888	BASIC AND GENERAL TESTS	

A. General information on the holding
B. Type of occupation
C. Labour
D. Assets
E. Quotas and other rights
F. Debts
G. Value added tax (VAT)
H. Inputs
I. Crops
J. Livestock production
K. Animal products and services
L. Other gainful activities directly related to the farm
M. Subsidies

List of tests in RICA1:
- 46 tests
- Basic and general tests
- Description
- Farm Return Tables (from A to M)

Version	20131320 / 12
Series	2 - COHERENCE BETWEEN TABLE B (TYPE OF OCCUPATION) AND TABLES D (ASSETS), I (CROPS) AND H(INPUTS) AND PLAUSIBILITY OF RENT PAID (TABLES B AND H)

Coherence tests

Number	Description	Level	Tables
1	The total UAA in table B must be equal to the sum of area in table I (excluding Other land).	SEVERE	B I
2	UAA in owner occupation or sharecropping (cat. UO, cat. US >0) implies value of land (table D)	WARNING	B G
3	Rented UAA (>1 ha) implies the recording of "rent paid" (table H, code 5071)	ANOMALY	B F
4	A value of rent paid registered in table H implies rented or sharecropped UAA in table B.	ANOMALY	B H
5	UAA and buildings rented imply no taxes on land and building.	ANOMALY	D H
6	A value of agricultural land in table D implies UAA for owner farming or sharecropped UAA registered in table B or other areas registered in table I.	ANOMALY	B D I
7	The amount of rent paid per hectare should be above the lower limit of limit code 183	WARNING	B D I H
8	The amount of rent paid per hectare should not exceed the upper limit of limit code 183.	ANOMALY	B D I H
9	If there is utilized agricultural land in Table B, there should be some crop production in Table I.	ANOMALY	B I

Each serie includes further tests (numbers). For instance, Serie 2 evaluates the coeherence between the table B, D, I and H and the plausibility of rent paid (tables B and H). It includes 9 different tests, 1 severe, 6 anomalies, 2 warnings

2.1 - S: the total UAA area in table B must be the same indicated in table I (list of crops)

2.3 – A: if there is rented UAA, it must be the record of rents paid in table H (inputs) → it can be corrected or justified in the case the land is rented without compensation (there are some contracts who provide for that) or in case of family agreement

FADN Data quality control

Some example:

Severe 46.3: Coherence between tables M (Subsidies) and I (Crops): If COP area receiving payment is registered in table M then COP cultivated area should be registered in table I (it must be corrected)

Anomaly 12.5: Plausibility of specific crop costs in table H (Inputs): Opening or closing stock of Machinery and equipment in table D implies the recording of Motor fuels and lubricants in table H
- There is an error and the data is missed (correction).
- The farm does not use machinery and equipment during the year (justification)

Anomaly 11.1: Coherence between interests paid and debts in table H (Inputs) and F (Debts): The presence of long-term debts implies the payment of interest
- There is an error and the data is missed (correction)
- Personal/family loans, State/tax office debts, other reasons (justification)

Anomaly 7.2: Plausibility of the physical production of table I (Crops) and table K (Animal products and services): Physical production (kg/ha) of field crops and permanent crops should not exceed given limits → maize [5,000 - 55,000]: 67,000
- There is an error and the data is not correct.
- High yielding variety; intensive farming; good production technology; good quality land; good weather conditions; other (justification)

FADN DATA QUALITY CONTROL

Warning 41.5: Coherence between tables M (subsidies) and B (Type of occupation): If there is land registered in table B there should be some SPS (Single Payment Scheme) or SAPS (Single Area Payment Scheme) registered
- There is an error and the data is missed (correction).
- There are not subsidies (justification).

Warning 12.3: Plausibility of specific crop costs in table H (Inputs): Fertiliser costs should be above the lower limit → Fertiliser cost [10 – 30,000]: 0
- There is an error and it can be corrected (correction)
- Own-produced fertilisers, extensive production, other (justification)

THANKS FOR YOUR ATTENTION

SOME INFORMATION IN THE ITALIAN FADN NOT COLLECTED IN EU FARM RETURN

GENERAL INFORMATION (tab. A)

❑ **Chief executive (**legal representative**)** : age, study; tax code; role in the farm

❑ **Identification info**: VAT code; code unique agricultural activities (CUAA); INPS; CCIAA; email; farm's constitution year; installation type on the farm; more details on the legal form (16 items).

❑ **Farms centers** (productive unit): cadastral data; remote town; farmer house (y/n).

❑ **Other**: Nature 2000 site (EU code); type of survey.

ASSETS – *land and buildings, deadstock and circulating capital* (tab. D)

❑ **Land type**: parcel; land use (quality cadastral, 16 items); s. environmental obligation; type: soil position, soil texture, properties of soil; soil cultivation (y/n).

❑ **Farms buildings**: group (11 items); type (69 items); size; year of construction; properties; technical life; % amortization; new value; historical value; accumulated depreciation of historical cost; (*single management item*).

❑ **Machinary and tools**: group (13 items); type (152 items); power output; year of manufacture; …. *other info as in buildings*.

❑ **Equipment and implements**: group (12 items); type (148 items); absorbed power; year of manufacture; …. *other info as in buildings*.

❑ **Permanent crops**: group (4 items); type (24 items); crops (268 items); variety (2954 items); year of planting; year full production; growing system; rate of planting; row turfed; energy use; …. *other info as in buildings*.

Some information in the Italian FADN not collected in EU Farm Return

LIVESTOCK (tab. J)

❑ Distinction between animals for slaughter and breeding

❑ **Breeding animals**: species (9 items); categories (19 items); early productive career; unit weight; life career; value early career; value end career; present value (*self-calculated*).

❑ **Slaughter animals**: species (42 items); categories (79 items); unit weight; unit value

❑ **Race**: 388 items; productive purpose; prevalence rate of livestock.

LABOUR (tab. C)

❑ **Labour: unpaid**: unit family (y/n); birth year, sex and level of education for all subjects; type of qualification work; degree relationship with the conductor; income and off-farm activities (*for REA survey*); sector farm activity; periods of work; percentage of sub-contract work.

❑ **Labour: paid regularly**: birth year, sex, origin country, type of contract work and type of qualification work for all subjects; farm activity sectors; periods of work; percentage of sub-contract work.

❑ **Labour: seasonal**: origin country, qualification work, farm activity sectors; periods of work; percentage of sub-contract employments, groups of women.

SOME INFORMATION IN THE ITALIAN FADN NOT COLLECTED IN EU FARM RETURN

INPUT (tab. H)

❑ More details on farm requisites, **20 groups and 108 item**; for each element: **quantity** and **price**, and FIFO for final stock. Classification by nature of the requisite not to the destination

❑ **Pesticides Class Toxicity**

❑ Plan large accounts, **81 accounts** in the book-keeping for the recording of expenditure

❑ Possibility to sell to others materials in stock

CROPS (tab. I)

❑ More details farm requisites, **8 groups, 42 crops type, 562 crops, and 8529 variety;** for each element: **quantity** and **price;** many internal uses

❑ Some permanent plantations, both herbaceous and plantations, (e.g. asparagus, globe artichoke, strawberry, etc.)

❑ **Herbaceous crops**: type of irrigation at the level of culture; rotation period (start date and end date); position in crop-rotation; crop association; no-tilling.

SOME INFORMATION IN THE ITALIAN FADN NOT COLLECTED IN EU FARM RETURN

OTHER INFORMATION /1

- **Membership associations production**: 7 items; year adherence; type of membership (free or paid); services used

- **Related activities**: distinction between farming and other related activities . Size and annual capacity of services offered (e.g. number of seating per restaurant , number of rooms , number of camping areas , etc.)

- **Financing Debts:** constant quotes, starting date, the total rates, rate frequency, effective rate and applied interest rate

- **Functional debts** : 12 typologies, starting date, ending date

- **Accruals and deferrals:** 9 categories and 44 types , period of validity

- **Contribution Details:** specific object of public subsidy, benefited quantity or size, eligible expenditure

- **Active subcontracting:** offered service period, working days, man working hours, machine working hours

SOME INFORMATION IN THE ITALIAN FADN NOT COLLECTED IN EU FARM RETURN

OTHER INFORMATION /2

❑ **Irrigated crops:** irrigated volumes and periods : date start and end of the shift , volume (cm) , irrigated area, the number of interventions, hours day delivery. Automatically calculated flow rate , duration of the shift in days , and the volume of water per hectare (cm/ha) ; if with ferti-irrigation.

❑ **Certifications:** distinction in business c. , process c. , and product c.. Typology for 12 farms , 16 for crops , and 9 business c.. 16 certificates for agricultural products (processed or unprocessed).

❑ **Financial management:** 18 types of creditors ; 16 types of debtors . (automatic) Management of the minus and plus values . Managing financial capital (for companies).

❑ **Asset Management:** accounting assets management (donations, destruction / disposal) . Extraordinary assets acquisition (donations , inheritances , contributions entrepreneur)

❑ **Internal replacement and disposals:** young animals for breeding management steps; steps from breeding to slaughter

❑ **Costs breakdown:** 4 categories of business elements : crop gross margins, husbandry gross margin, in economy construction, extraordinary maintenance . Breakdown of specific costs , man working hours and working farm machines working hours