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### **Project Title**

## **Towards a Common Quality Control and food chain traceability system for the Greek – Italian primary sector of activity**



*The Project is co-funded by the European Union (European Regional Development Fund)  
and National and Regional Funds of Greece and Italy within the frameworks of the  
European Territorial Cooperation Programme Greece-Italy 2007/2013*

### **WORK PACKAGE 5 – ACTION 5.4**

#### **Deliverable Title: 5.4.2. - Re-calibration of the model**

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Type:	Document/ Software /Contents
Document Reference:	Internal document/ <u>draft</u> / Final version
Version:	02
Date:	Mar 15, 2014

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## **1 Premises**

The final aim of the project is to develop a novel platform, based on Geographical Information System, build to integrate the Electronic Cultivation Record, for the total management of olive growing, with the intent of:

- Constant monitoring of the conditions under which the olives are cultivated and decision making according to real data.
- Production and distribution of an innovative in a pan-European level of a “best practice” roadmap for the cultivation of olives
- Improvement of the quality of the product through quantitative measurements.

For these purpose, the present Deliverable 5.4.2 will aim to propose a final implementation of the model, which comes out from the conclusions of all the other deliverables. Those deliverables, in fact, and, particularly, the deliverable 5.3.1., gave the necessary inputs to define the limits and obstacles that the model can have, but also the opportunities for a successful implementation, also in terms of partnerships with realities still operating in the area.

So this deliverable will pass through:

- An overview of the GIS-ECR platform, how it has been planned;
- A resuming of the critical point of the implementation of the model
- An overview of possible partnership for implementation of the model
- Proposed intervention to the model
- Final conclusions.

## **2 Agroquality's Electronic Cultivation Record model description**

The core of the model is a Geographical Information System (GIS), which integrates a full Electronic Cultivation Record for table olives and olive oil. According to its developers, the general features of the GIS platform are the following:

- a) GeoPresentation of the information; composition of new information levels; retrieval of the geo-correlated data. Soil composition, hydrological and climatic data are presented on new automatically created levels of information and
- b) Correlation of the Geographical data with the Electronic Cultivation Record.
- c) Generation of reports regarding conditions and treatments during cultivation and processing activities.
- d) Issuing of certificates which provide plentiful information regarding the course from field to table.

The technical features of the ECR according to its developers are the following:

- a) Web based and Stand-alone application.
- b) Open Architectural design and development based on XML technologies, strictly defined by widely accepted XSD and DTD schemas
- c) Management and processing of multi-layered digital maps.
- d) Metadata handling, geo-correlation and storage.
- e) Robust Role management.
- f) Bidirectional Interconnection for data exchange with leading applications (ESRI ArcInfo, Autodesk-Automap)

According to its developers, the development of the ECR passed through the following stages:

- a) User Requirements gathering and functionality definition
- b) Use Cases identification: the potential Use Case scenarios were identified and analysed.
- c) Identification of the nature of the information recorded. The data records gathered were correlated and Geo-referenced and special layers have been designed to hold the data.
- d) Identification of the processing needed. The Geo-referenced data were fed to the system data repositories to facilitate fruitful information extraction.
- e) Data records storage development. According to the nature of the data gathered and corresponding to the information layers introduced, the new databases have been developed. The databases are complementary to the GIS

architecture, and serve as a metadata repository for the platform. The databases have been delivered in the form of SQL equivalent and were installed to the system database server ready for initial data population

- f) Development of special case GIS software platform. Based on the specific nature of the costal data and information processing and retrieval a novel case specific GIS platform has been developed.

At the end the platform has been delivered in the form of well documented software, installed on the system server and ready to use.

After development, the model would be implemented at farm level in various typologies of farms, in order to monitor the technical activities, assess their achievements step by step and with regard to the environmental and agronomic aspects. All the relevant information would be used for re-calibration of the model (if necessary) and delivery of final guide-lines regarding the road map to the most efficient in cultivation, environmental and economic terms, productions or the various products of olive cultivation.

### **3 Limits and obstacles in the implementation of the model**

Special attention at the level of this Deliverable 5.4.1 has to be done to the real potentials of the project, that means: how can the final output of the project be effective and efficient for the local industry?

Regarding to this question, there are some concerns that must be considered, which are prior than the technical aspects of the implementation of the model. The analysis revealed a low propensity of the farmers to welcome this kind of initiatives. The reasons of this has to be found in different reasons, some of them relates to the attitude of entrepreneurs, some instead related to the proposal.

What is important to understand is which are the limits that the entrepreneurs attitude together with industry and market structure can oppose to a feasible implementation of the system and which are the solutions can be proposed to pass by those limits.

- Structure of the farm
- Small dimension of the farm. It is enough to consider that a farm who is able to sell 15,000 bottles it is quite a big farm for the area. At 6 €/bottle has a gross revenue of 90,000 € per year. With this revenue it is very difficult to invest in research and development, marketing and in most of long-term project.
- Lack of professionalism: also as consequence of the problem of small revenue above mentioned, many farmers are not professional in olive industry, but has to do other jobs, or get on with olive farming more as a hobby than as a professional job;
- Also for the reasons mentioned above, the olive oil industry cannot be consider a high rentable industry, and this means that it is difficult to settle a feasible model which concern only olive oil industry.
- Regarding quality, the most important issue is that, according on what farmers said, producing quality it is not as difficult as selling quality. This means that, if the model of an integrated management can be effective, it has to leave from a marketing strategy which guarantees a value added for final product.

To headline a possible strategy for implementation, it is necessary, on one hand, that the model takes into consideration the need to link the olive oil industry to other industries, first of all rural, nature and food and wine tourism. And this is more necessary if considering that many farm are still involved in activities such as restaurants, welcoming and direct selling.

On the other hand, of course, it is important pursue the standard quality value added of the product olive oil. This can be provided by high specialized standard quality from one side, good marketing support on the other side. If we normally talk about positioning a brand in the global market, the investments are normally too high for single farm, but also too high also for groups of farm. If I think about totally new brand positioning in the global market, an idea of investment cannot be smaller than 5 millions€ per year for at least 3 years, which is a not affordable cost. The big opportunity is offered by the territory brand of (Salento, Otranto, Lecce), which are still well positioned in the market and can offer a good chance for single products to be promoted in a mix of traditional local products, linked to territory and to tourism industry.

The conclusion is that the final must pass through 3 level of coordination and 3 possible partners:

- The PDO Consortium
- The strade del vino
- Coldiretti for Campagna Amica

## 4 Partners of the models

### 4.1 PDO Consortium Terre d'Otranto

The Consortium Terre d' Otranto ([www.oliodopterradotrantato.it](http://www.oliodopterradotrantato.it)) has been settled down in 2002, and in 2003 has been recognised by the Ministry of Agriculture in Italy. The task of the Consortium are to defend the brand of Protected Denomination of Origin, recognised by European Community, and improve and promote the quality of the product.

Today associates are a very low number, with respect of all olive oil producers of the area. Official data reports that in 2013 only 11 companies declare a PDO production for a total amount of 16,895 kg of PDO Olive Oil.

Name of the enterprise	Seat	Province	Certified quantity (kg)
AGRICOLA ARCIPRETE STASI & C. S.S.	Torre Santa Susanna	BR	1,763
DORIA CESARIA	Vernole	LE	541
AZIENDA AGRICOLA FAIULO FIORAVANTE	Presicce	LE	1,890
AZIENDA AGRICOLA LABBATE ETTORE	Ugento	LE	2,570
AZIENDA AGRICOLA RUCCO ORONZO	Carpignano Salentino	LE	2,791
AZIENDA AGRICOLA TENUTA TRESKA DI DOMENICO CITO	San Cassiano	LE	1,551

AZIENDA AGRICOLA ZAPPATORE DANIELA	Giurdignano	LE	536
TENUTA AGRICOLA SERRADEI DI BONETTI FLAVIA	Piove di Sacco	PD	1,337
AZIENDA AGRICOLA RONZIERI DI STANO ANNAMARIA	Avetrana	TA	914
AZIENDA AGRICOLA ROLLO ANTONIO	Veglie	LE	2,002
AZIENDA AGRICOLA FRANCO TAMBORINO FRISARI	Maglie	LE	1,000
<b>TOTAL</b>			<b>16,895</b>

According to Dr. Gianni Lezza, who is the quality responsible of the Consortium, there are around 26 brands associated to the Consortium, and the average PDO production can go normally up to 350-500 hectolitres, of which approximately 80 % is bottled, for a total production of around 40-50,000 bottles.

On the other hand, a bigger number of companies is registered within the Chamber of Commerce of Lecce database for PDO Terre d' Otranto being the Chamber of Commerce the responsible organization for authorizing the company which makes request and certifying the product according to the quality standards of PDO Disciplinary.

In details, the company registered are:

- 76 companies are registered as olive producers;
- 27 olive as mills;
- 26 as olive bottler, mostly the same companies that are registered as mill.

The database is organized with the name of the company and also the data useful for the localizations of registered properties, as it is possible to see in the sample of the database available.





Camera di Commercio  
Lecce

DOP "Olio Extravergine di Oliva Terra d'Otranto"



**ELENCO OLIVICOLTORI ASSOGGETTATI**

numero elenco	anagrafica	codice fiscale	indirizzo	comune	prov.	cap	Superficie (Mq)	comune	foglio	particella	superficie
8301	Agostinello Simone	GSTSMN80R29D851R	Via Della Croce 11	Tricase	LE	73039	137.400	TRICASE	26	133/P 693/P	38700
								GALATINA	32	6	98700
5057	Agricola Arciprete Di Stasi & C. S.s.	01913040745	Contrada Arciprete	Torre Santa Susanna	BR	72028	66.000	MESAGNE	64	14 - 313 - 309	66000
8186	Antica Masseria Casarossa S.r.l.	02230760742	Cnt Casarossa S.n.c.	Oria	BR	72024	55.200	ORIA	79	18 - 20 - 220	22200
									81	106 - 107 195 40	33000
8990	Antica Masseria Del Fano Di Roberto Ziletti	ZLTRRT61D10F265K	Vicolo Castelletto 3	Manerbio	BS	25025	40.000	SALVE	11	6 - 8 - 11 - 202	40000
7731	Az. Agr. Ronzieri Di Stano Anna Maria	STNNMR70S55E882A	Via Paesiello, Sn	Avetrana	TA	74020	20.000	MANDURIA	128	32	20000
8288	Az. Agr. Spirido E Muzzuni Di Gussoni Enrico	GSSNRC54R03B300F	Vic C. Del Prete 18	Ruffano	LE	73049	93.800	RUFFANO	17	56 - 58 - 66 71 72 - 59 - 54 55 287 771	93800
8297	Azienda Agricola Bottazzo Siria	8TTSR91M41B15S	Via Vitt. Veneto 15	Ugento	LE	73059	86.100	ACQUARICA DEL CAPO	1	248 - 10 - 145 6 - 8 - 80 - 9	9400
									9	6 - 8 - 9 - 10 80 - 145	76700
7028	Azienda Agricola Case Bianche Di Pagano Gianfranco	PGNGFR71D27B180P	Via E. Montale 22	Squinzano	LE	73018	48.800	TORCHIAROLO	4	74 - 563 - 69 838 - 572 - 68 837	43300
									5	1471 - 1472	5500

The Consortium is responsible for making control, through the service of the Chamber of Commerce, which is delegated to take samples from certified companies and respect a complex control protocol to be accomplished.

A sample below:

## AGRO Quality D. 5.4.2 - Re-calibration of the model

Tabelle di controllo (documenti)

SOGGETTO	PROCEDURA O FASE DI PROCESSO (2)	REQUISITO (3)		AUTOCONTROLLO (4)	ATTIVITA' DI CONTROLLO (5)	Tipo di controllo	Entità del controllo per anno (in %)	Elemento controllato	DOCUMENTAZIONE COMUNICATA AL MIPAAF	NON CONFORMITA' (8)	GRAVITA' DELLA NON CONFORMITA'
		Categoria	Descrizione								
1	2	3	4	5	6	7	8	9	10	11	12
1	Olivicoltura iniziale	Ubicazione degli oliveti	Le olive per la Denominazione Protetta "Terra d'Otranto" devono essere prodotte nella zona di produzione delimitata <b>C, 1, D, 1</b>	produrre specifica richiesta entro il 30 giugno di ogni anno (mediante il modulo MDC2 e l'allegato Elenco terreni)	controllo documentazione	D	ad ogni riconoscimento	soggetti richieste il ric.	Elenco completo, alla fine di ogni anno solare, degli olivicoltori riconosciuti specificando per ognuno: l'elenco degli oliveti (dati catastali), la tipologia degli oliveti (nr. piante, varietà), le potenzialità produttive	Oliveti fuori zona	
	2									Carenza documentale	
	3									Oliveti parzialmente fuori zona	
	4	adeguatezza impianti di coltivazione	Varietà presenti negli oliveti <b>B1</b> ; Condizioni di coltura. <b>D1, D2, D3</b>	Iscrivere solo gli oliveti che hanno complessivamente composizione varietale e densità di piante conformi e nei quali sono applicati metodi di coltura atti a conferire alle olive ed all'olio derivato le specifiche caratteristiche	Verifica Elenco dei terreni	D	ad ogni riconoscimento	soggetti richieste il ric.		presenza di varietà e/o composizione varietale non conforme	
	5				verifica ispettiva	I	ad ogni comunicazione	soggetti richieste il ric.		mancata corrispondenza con quanto comunicato nella documentazione	
	6									inadeguatezza impianti di coltivazione, per parametri non modificabili (sesti di impianto, forme di	
7	Mantenimento dei requisiti	Ubicazione degli oliveti e anagrafica dell'olivicoltura	Le olive per la produzione della DOP "Terra d'Otranto" devono essere prodotte nella zona di produzione prevista <b>C.1., D.1.</b>	Comunicare eventuali modifiche ai dati catastali (entro 15 gg.) mediante il modulo MDC2 e l'Elenco terreni allegato	Controllo comunicazione modifiche dati catastali	D	ad ogni comunicazione	soggetti riconosciuti	Elenco completo olivicoltori riconosciuti specificando per ognuno: l'elenco degli oliveti (dati catastali), la tipologia degli oliveti (nr. piante, varietà), le potenzialità produttive	mancata comunicazione delle variazioni dei dati catastali per l'aggiunta di nuove particelle (sostanziale)	Grave
	8									mancata comunicazione variazioni anagrafiche e/o dei terreni (formale)	Lieve
	9									oliveti fuori zona o parzialmente fuori zona.	Grave
	10									Carenza documentale	Lieve
	11	adeguatezza impianti di coltivazione	Varietà presenti negli oliveti <b>B1</b> Condizioni di coltura. <b>D2</b>	Iscrivere solo gli oliveti che hanno complessivamente la composizione varietale conforme e nei quali sono applicati metodi di coltura previsti dal disciplinare	Verifica elenco dei terreni	D	ad ogni comunicazione	soggetti riconosciuti		presenza di varietà e/o composizione varietale non conforme	Grave
12		Densità di piante e sestì d'impianto <b>D.3.</b>			Controllo comunicazione annuale	D	Ad ogni comunicazione	soggetti Ricon.		Mancata comunicazione variazione del numero di piante o del sestì d'impianto	lieve
13											grave
14					verifica ispettiva	I	35	soggetti riconosciuti		mancata corrispondenza a quanto comunicato nella documentazione (sostanziale)	Grave
15										mancata corrispondenza a quanto comunicato nella documentazione (formale)	Lieve

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Tabelle di controllo (documenti)

The Consortium has established its own panel for sensory evaluation of the PDO, responsible to establish if a new olive oil can be branded with PDO or not, depending on if it complies the standard quality characteristics defined in the disciplinary.

More than this, the Panel can distinguish also the area of origin, the area of Veglie and around the Ionian Sea area is different from the area of Squinzano, since the first is affected by the north wind and for other factors. From a point of view of sensorial analysis, the Consortium aims to diversify olives depending on their organoleptic characteristic, especially on the standard of fruitiness, i.e. high, medium and weak fruitiness.

The Panel is supposed to be supported by physicochemical analysis.

Dr. Lezza and the Consortium are also collaborating with the “Slow Food” association to the elaboration of the Slow Food Guide, which focuses its attention to the uniqueness of native cultivars.

The Consortium is also involved in research projects, in collaboration with research structure, mostly involved to study of product quality.

Regarding the costs of certification, they vary greatly depending on the amount of the certified product, which means that:

- a minimum cost can approximate 0.5 € / litre for producer which certify more than 100 quintals;
- a maximum cost can be around 2 € / litre for producer which certify 5 quintals or less.

According to Dr. Lezza, the minimum lot size for which it makes sense for a company to start the certification process is 5.000 kg.

The range of prices of final product can move from 6-7€/ 0.75lt up to 20€/ 0.5lt.

In conclusion, with respect to the model we want to propose, the Consortium can present different aspects, negative and positive, to be considered.

Regarding the negative aspects, the main ones are the following:

- The PDO Consortium is not representative of the population of olive producers and bottlers.

- Consequently it is also difficult to give marketing strength to PDO Terre d' Otranto brand, which is actually supposed to be not strong enough to compete in a global market.
- The PDO disciplinary do not include the possibility to brand a single cultivar out of Cellina or Ogliarola; normally Terre d' Otranto is a blend of these 2 cultivar, with a limit of up to 40 % of other varieties.

While instead the positive aspects are:

- The database of Consortium, which can easily feed the GIS-ERC software.
- The control system, which is something still operative from Consortium and, if accessible, can be a field of mutual utility for both GIS-ERC model and Consortium tasks.
- The Panel, together with physiochemical analysis, is the right support for the measurement of the effect of the quality system implementation.
- From a strategic point of view, the Consortium means:
  - Common brand, concentration of marketing efforts
  - Linkage to territory, territorial marketing
  - More opportunity for economic support from EU or Government.
  -

#### **4.2 Coldiretti**

Coldiretti is the national syndicate of producer, which in the province of Lecce results to have an important representation.

For our goals, Coldiretti is important for its numerous initiative.

One is "Campagna Amica", a project which aims to certify all the companies able to sell exclusively their farming production and to give those company one or more selling point, promoted under the brand "Campagna Amica". This initiative looks to be growing, especially in the area, and, according to official data, there are 88 different companies registered for this project.

Some farmers declare to find in this initiative an interesting source of revenue, which can permit them to avoid the standard market channel.

Other interesting initiative is Terranostra, which is more aimed to promote agritourism and all rural and environmental friendly initiative of their associates.

<http://www.lecce.coldiretti.it/>

#### **4.3 Food and wine, cultural and rural routes**

All food and wine route can be really interesting for the proposed goals, taking into consideration the importance of the linkage of the quality of the product with the attractiveness of the territory.

There are various example, and many other can be found in the internet, but we would put evidence only on one that seems to fit our model, that is the initiative of “Le Vie Verdi del Salento”, the green road in Salento, which are bike route, differentiated according to the main product, for example, olive oil route, wine route, but also history route like Norman Route, Castles Route, or sightseeing, Sea Route, and so on.

### **5 Proposed intervention for adapting GIS- ECR model**

Finally we want to summarize in this table, starting from all the inputs we’ve been collected from former analysis in precedent deliverable, we want to suggest possible intervention or adaptation of the system, indicating supposed impact on the efficiency of the system, feasibility and potential partner with whom to develop the intervention.

<b>Intervention in the model</b>	<b>Feasibility</b>	<b>Impact</b>	<b>Partner/ Collaboration</b>
Establishing the minimum farm dimension and/or characteristics which can guarantee efficiency inside the integrated system.	Medium-low	High	Consortium, Coldiretti
Feeding the GIS-ERC with the database of PDO Consortium.	Very High	Low	Consortium
Including in the model the Consortium quality control system.	High	Medium	Consortium

Including in the model the Consortium Panel of sensory evaluation, using it for the measurement of the quality of final product, including non PDO product.	High	Medium	Consortium
An illness and infestation integrated management system, to monitor and fight the arising problem of the area. The case of "Xylella fastidiosa" could be an example.	Low	High	Consortium, Coldiretti
A machinery integrated management model, which would establish: <ul style="list-style-type: none"> <li>- Which kinds of machinery are needed in the area.</li> <li>- How many machinery of this standard are still available in the area.</li> <li>- How many machinery are needed.</li> <li>- In which period and where.</li> </ul>	Low	Very High	Coldiretti; Consortium
An integrated management of mills, mapping them and assigning them a production area of reference.	High	Medium	Consortium, Coldiretti
Identifying some specific limited areas to destine to the maintenance of old ancient trees and map those areas.	Medium	Medium	Touristic routes; Coldiretti
Mapping all ancient structures and establishment to recuperate.	High	Medium-Low	Touristic Routes
Mapping all the points of sales of quality products, where the specific product is directly sold by the producer. QR code must permit to find also those p.o.s..	High	Medium	Touristic routes, Coldiretti

## 6 Conclusions

The synoptic table of possible intervention described above can be used as a road map for building on a plan of cooperation between the Municipality of Lecce and the other suggested organizations. It is important that, while the Municipality is expected to continue to be the local leader of the project, private companies must become the first active stake holders, because their participation is the only chance for the model to be sustainable.

**Sources:**

- Agroquality Application Form, Sept 2009
- Camera di Commercio di Lecce: [www.le.camcom.gov.it/P42A0C100S82/D-O-P--Terra-d-Otranto.htm](http://www.le.camcom.gov.it/P42A0C100S82/D-O-P--Terra-d-Otranto.htm)
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