

CREA – CONSIGLIO PER LA RICERCA IN AGRICOLTURA E L'ANALISI DELL'ECONOMIA AGRARIA

- CREA is a National Research Institution with general scientific competence in agriculture, agro-industry, fisheries, forestry and economics.
- CREA has legal personality under public law, established under the supervision of the Ministry of Agricultural Food, Forestry Policies and Tourism and it has scientific, statutory, organizational, administrative and financial autonomy.
- CREA is contributing the national strategy of international cooperation with particular emphasis on strengthening partnerships in the implementation of the Agenda 2030 and its Sustainable Development Goals.

THE REFORMS: 1871-2016



12 RESEARCH CENTRES

- GB** Genomics and Bioinformatics
- AA** Agriculture and Environment
- DC** Plant Protection and Certification
- IT** Engineering and Agro-Food Processing
- AN** Food and Nutrition
- PB** Agricultural Policies and Bioeconomy
- ZA** Animal Production and Aquaculture
- FL** Forestry and Wood
- CI** Cereals and Industrial Crops
- VE** Viticulture and Enology
- OF** Vegetable and Ornamentals crops
- OFA** Olive, Citrus and Tree Fruit

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PRECISION AGRICULTURE

■ OUTLINE OF THE CASE

- Increasing the sustainability of the Italian agricultural model through innovation is one of the most important challenges of the next years, to increase quality agricultural production and maintain agro-biodiversity. In this context, Precision Agriculture plays a primary role in optimizing production yields and reducing environmental impact. "Guidelines of Precision Agriculture" were elaborated to support farmers applying precision agriculture.

■ POINTS OF THE CASE

Examples of Precision Agriculture application:

- 1 Herbaceous crops (wheat, corn, tomato, rice, etc.) Combine harvester-production maps (how many meters, GNSS systems) Fertilizer spreaders, Remote sensing - satellites, drones, proximal sensors on tractors for fertilization, weeding and irrigation
- 2 Tree crops (citrus, apple, olive, pear, peach, etc.) In addition to applications shared with herbaceous crops, infection/infestation monitoring and cultural operations such as thinning/control fruit growth after verification proximal optic. Precision irrigation
- 3 Viticulture. Processing of vegetative vigor maps of the vineyard in order to make harvest choices, yield choices, and/or parameters qualitative (ripening grapes). Use of high-definition detection sensors from aerial platforms, piloted drones. Phytosanitary status of the vineyard and physiopathic evaluation.
- 4 Forestry. Monitoring and evaluation of forest resources (GNSS, drones, proximal). Monitoring, prevention and fight against fires census and traceability of forest products (RFID, etc.)
- 5 Animal Husbandry. Cattle: identification of livestock disease, nutrition management. Pigs: weight estimation, feeding management, cough detection. Chickens: automatic counting of eggs, inspection/identification of carcasses. Fish and molluscs: selection and management of stocks.

RURAL DEVELOPMENT PROGRAMS, SUSTAINABLE AGRICULTURE AND EDUCATION

■ OUTLINE OF THE CASE

- **Governance:** NRN Network (16 Regions, 27 Universities, 21 Organic Farms) effective cooperation to ensure the knowledge and technical training are effectively delivered.
- **Skills and capacity building:** e-learning for 1100 university students; field experiences and business plan labs for students, teachers and young farmers.
- **Good Practice evaluation:** portfolio of best findings, 21 selected case histories in education for sustainable development
- **Replicability** of the initiative through the RDPs Communication Plan

Although organic agriculture is one of the rapidly growing sustainable production system and it's a priority issue of Rural Development Programmes (RDPs), there is still a lack of knowledge and technical training, essential to support the development of the sector. So the Ministry of Agricultural Food, Forestry Policies and Tourism (MIPAAFT) launched the Rural4 University (R4U) pilot project. Education for rural areas sustainable development, to create an interactive model to develop and disseminate knowledge to relevant stakeholders, replicable at regional level. Project's specific objectives are:

- understanding the role of RDP in supporting environmental sustainability and consumers' protection,
- converting best organic practices into operational tools for sustainable, cultural and professional growth in rural areas;
- fostering RDPs investment for professional training of young students. Project's design includes:
 1. NETWORKING among public authorities, economic and social partners, knowledge providers, organic producers and young farmers.
 2. E_LEARNING: video-lessons of researchers, regional executive and agro-food experts.
 3. RURALCAMP: 5 days field visits, focus group, brainstorming.
 4. BPOL LABS: business plan online and peer to peer training.
 5. Integration of R4U model into RDPs to reach tangible results.

■ PROJECT WAY FORWARD:

- Partnership and networking to provide an effective route to deliver sustainable development
- Opportunities for scaling up the approach to a community level
- Community engagement and dissemination

■ FURTHER READING

- E-learning web site:
<http://www.rural4learning.it/site/#corsi>
- Case histories database :
http://www.rural4learning.it/site/local/r4l_aziende/portfolio.php
- R4U design:
<https://www.reterurale.it/rural4universita>
- R4U impact (focus group results):
<https://www.reterurale.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/17349>
- R4U blog:
<https://www.reterurale.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/17341>



Apulia Kundi organic farm (Puglia)



Rural4University leaflet and 21 field visit map

BEST PRACTICES OF FARMERS' DIRECT SELLING

■ OUTLINE OF THE CASE

- Definition of Farmers' Direct Selling
- Selection of Good Practice Case Studies (GPCS)
- Identification of the issues characterizing the GPCS
- Capability to recreate GPC

In Italy, Farmers' Direct Selling is a marketing strategy that is increasingly popular in the agro-food sector. There are many different ways for farmers to operate direct selling, e.g. farm shop, farmers' market, e-commerce, virtual showcase, marketplace, agro-catering, joining buying groups, and so on. Sometimes, farmers prefer to delegate some marketing or logistics functions to a third party: in these cases, it is very important to make the consumers aware about the role of the farmer, and clear communication of the production process is an issue to be addressed. A closer relationship between farmers and consumers generates a lot of benefits for both of them. Farmers can tell and show people what the origins of their products are, and at the same time, consumers are more satisfied by their purchases when they acknowledge from where the products are from and how they are made. Selected cases are shown below:

■ FARMERS' MARKET

Farmers' market is managed by a farmer's association. There is a market regulation that farmers accept to follow and a common mark (logo) to put on the product labels. The sales activities are managed directly by farmers within the assigned area.

■ BUYING GROUP

It is a no-profit consumers' association. There are no formal supply contracts, but shortlisted farmers receive orders based on their products availability.

■ E-COMMERCE OF FARMERS' ASSOCIATION

It is a farmers' network that aggregate producers only for marketing and logistics aims. There is a formal contract that farmers have to subscribe in order to join the network. The contract establishes the rules and the targets of the network.

■ AGRO-CATERING AND FOOD DELIVERY

It is a service of making, cooking and distributing food ready-to-eat, managed directly by a group of farmers in a farm or a city-based restaurant, or through a home delivery service. In this case the value added is very high.

■ MARKET PLACE

This marketing form is characterized by the presence of a subject that mediates the relationship between farmers and consumers. It is a real commercial enterprise, which purchases products from the farmers and manages the e-commerce platform and the logistics of the home delivery service. The intermediary has its own brand and own communication campaign. The communication campaign focuses on farmers storytelling, giving to consumers a clear and deep knowledge about farmers, origin countryside and agricultural methods adopted.

During this project an activity of communication has been carried out through the handing out of a brochure at farmers' market and national agro-business show. The brochure explains to farmers and to consumers the benefits of Farmers' Direct Selling.



Front of the brochure



Back of the brochure

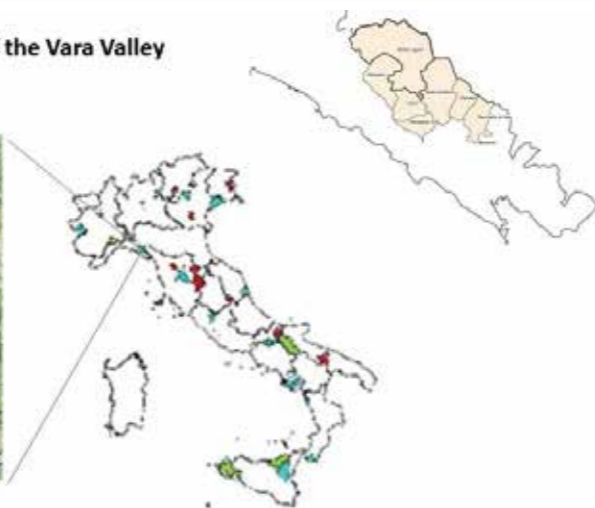
ORGANIC DISTRICT OF THE VARA VALLEY

■ OUTLINE OF THE CASE

- 25 years ago The Municipality of Varese Ligure undertook a series of action for sustainable local development in which organic farming was the main pillar.
- The conversion and the reconstruction of the processing plants of the two main cooperatives, a slaughterhouse and a dairy factory, have allowed the setting up of a very profitable local supply chain that has prompted an emulation effects among farmers of the nearby municipalities.
- Val di Vara hosts the 60% of the total organic area in Regione Liguria, feature that made it eligible to become an organic district according to regional law on organic farming
- Today the organic district gathers together farmers, municipalities and other local economic realities, in a collective endeavor for local development



Organic district of the Vara Valley



■ BACKGROUND

As many other towns in Italian mountain areas, Varese Ligure, the major town in the Valley of the Vara river (Province of La Spezia, Italy) has been facing depopulation and land abandonment for fifty years. In order to counteract these detrimental tendencies, in the early nineties local administrators started a season of renewal of the urban and productive fabric that brought to a recovery of the town historical centre and to the conversion to organic farming of the local cattle farming, both meat and milk, now as then the most important economic activity in town.

In order to ensure the economic viability of the farming activities, conversion was accompanied with interventions aimed at avoiding the dispersion of the value added: the meat cooperative was equipped with a new slaughterhouse and, lately, with a packaging room that made direct selling easier. On the other hand, the milk cooperative, until then limited to collecting and selling raw produce of its members to transformation industries, obtained a new dairy factory that allowed local transformation.

Organic farming acted as an element of discontinuity that catalyzed new forms of engagement both inside local agriculture, with new farmers associations (Consortium Valle del Biologico) and inside local society, prompting new cultural initiatives led by young farmers and aimed at spreading the values of organic farming (Association "Biological"), even though activism and commitment never reached local population at large. The rising of a strong territorial reputation around organic farming attracted exogenous actors.

An entrepreneur from Northern Italy established a dairy factory in Varese Ligure that produces a yogurt denominated "Organic goodness from Varese Ligure". The company itself is a member of the milk cooperative, and today, it is the largest employer in Varese Ligure. Organic farming crucially contributed to a "reterritorialization" of the local agricultural sector based on a more virtuous relationship between the economy and the environment, therefore prompting agricultural diversification.

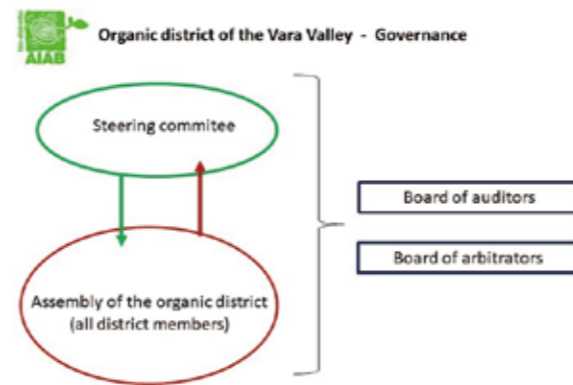
Over the years, organic fruit orchards have been planted in the valley bottom, along with small patches of small fruits and aromatic herbs on the slopes. In addition, a traditional supply chain for chestnut flour production has been recovered. Most of the production is transformed in small farm laboratories and then distributed in short supply chains, mostly local. The supply chain for a local breed of hen has been completely recovered by the members of the Consortium "Organic Valley", with the financial support of a bank foundation and the technical assistance of the local branch of Slow Food.

These are a clear example of endogenous resources activated by organic farming, although supported by exogenous actors. A great contribution to the consolidation of these new supply chains has been in fact given by neo-rurals, some of them coming from Italian main urban centres (Milano, Genova), but also from foreign countries. They all were attracted by Varese renown. The economic success of the two supply chains determined the spreading of organic farming in neighbourhood towns, thus preventing land abandonment and allowing the persistence of organic UAA that, although extremely variable, remained the highest in the Region. Varese Ligure administrators were the first to understand that such a peculiarity should be officially recognized by some kind of normative intervention. They therefore lobbied for a regional law to regulate Organic districts. Their attempts succeeded in 2009, when the first law on organic agriculture regulating Organic district in Italy was issued by the Regional Council. After the establishment of the district, the local organic sector was mature enough to express a leader (the local branch of the Italian Association for Organic Agriculture - AIAB) of a partnership made of Varese Ligure and 6 more communes of the Vara Valley, the two cooperatives, two farmer's associations and 75 farmers.

RESPONSIBLE BODY

The organic district of the Vara Valley is a public-private partnership between all the territorial subjects that are willing to contribute to its development. The Leadership belongs to the local branch of the Italian Association of Organic Farming (AIAB).

The main governing body of the Organic district is the steering committee, whose task is the definition of the main actions to be carried out. Its members are elected by the assembly of the organic district, that gather all the members that have the right to vote.



EFFORTS IN DETAIL

Being recognized by a Regional law allowed the farmers that are members of the organic district to get 10% more on the payments for organic farming. This boosted the number of farmers joining the certification scheme, at the point that in 2017, the 60% of the Utilized Agricultural area in the Valley was organic.

Anyway, the action of the Organic district goes well beyond the mere promotion of organic farming, as it aims at the integrated development of the area. Starting from the values that are inherent to organic farming.

The Municipalities of the area have already agreed to avoid the use of pesticides in public spaces (for instance by avoiding the use of glyphosate for weed control on the roadsides). Moreover, local public canteens serve, whenever it is possible, local organic products.

The high territorial attractiveness have already prompted a season of renewal of local agriculture with at least 20 new rurals that have established their farming activity in the Vara Valley, moreover activating new supply chains (aromatic herbs, fruits, honey...).

Anyway, the most important results have been obtained with the economic viability of the two main cooperatives.

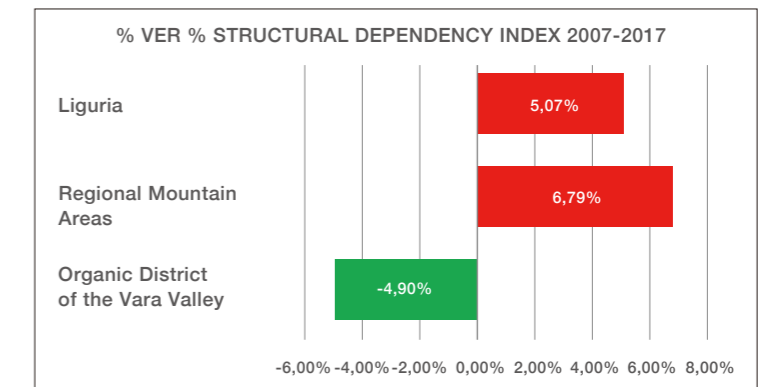
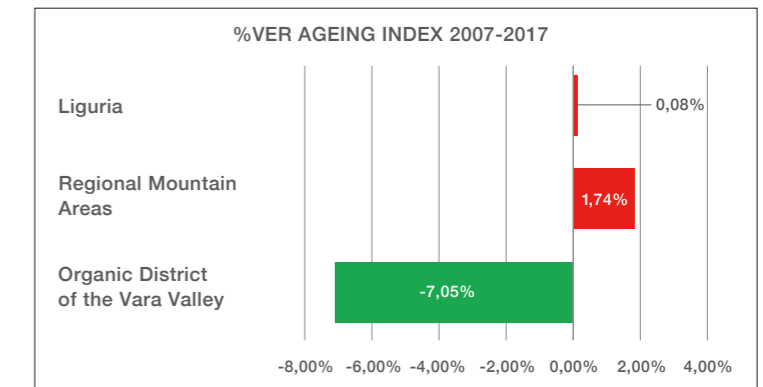
Their revenues keep on increasing, so that also the work of the farmers can be better remunerated, this is favoring generational turnover in farms, with a decreasing number of youngsters that are leaving farming activities. Although very tiny, (it collects the milk from just 20 farmers, 12 of them are organic) the dairy processing plant is the only one that still survives on the regional territory.

The economic success is cheeses, although it has not been able to foster new dairy farmers, has stopped the conversion from milk to meat, that was occurring at an high rate in the valley. Also innovation is a central focus of the development strategy of the Organic District: the district provides information/formation for citizens and farmers on organic farming techniques and features. It is also the leading partner of Operational Groups whose aims is to test the effectiveness of composting barns locally in reducing the impact of the local cattle farming.

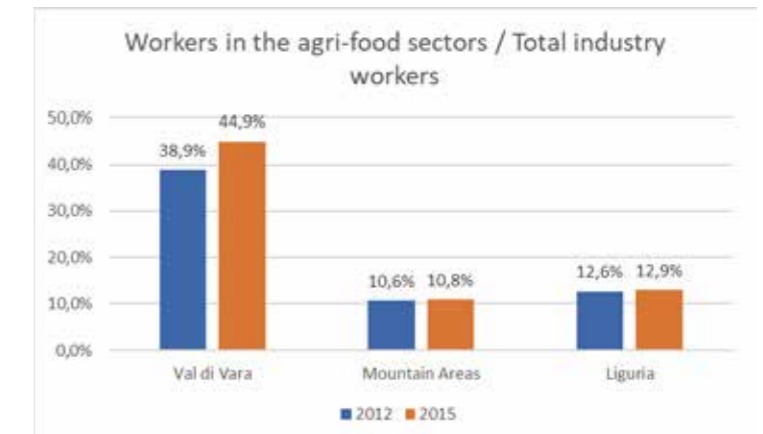
OUTCOMES

Besides the evident advantages for the primary sector, the long standing efforts toward sustainability of the Vara Valley, have already produced territorial effects. The increment of the revenues of the two cooperative is the most straightforward consequence of the conversion to organic farming of most of the local breeders; nevertheless, there are positive symptoms of societal changes as well.

1) The ageing of local population has slowed



2) It has created new jobs in the local food industry



3) It has contributed to the economic vitality of the valley

	Average workers in Industry		Average workers in Food Industry	
	2012	2015	2012	2015
Organic District of the Vara Valley	99	97	38	44
Regional Mountain Areas	10.573	9.804	1.120	1.060
Liguria	11.032	10.204	1.392	1.316

COMMUNICATION CAMPAIGN ON CLIMATE CHANGE

OUTLINE OF THE CASE

- Communication campaign on Climate Change, carried out by Italian National Rural Network on Rural Development, programming period 2014-2020
- The goal was to inform and raise the consumers awareness about the role of agriculture in mitigating climate change and about the relevance of individual purchasing behaviours on the greenhouse gas emissions reduction.
- The consumers are the campaign target audience and the group has been identified as families with children aged six to 12 years. For this reason, any information and activities were calibrated in a ludic-interactive way by involving children, as they are more participatory and permeable to the theme.
- Trade shows and shopping malls were the main location of the campaign actions.

In accordance with the aim of promoting Rural development policies, the campaign's main goal is to communicate to general public the effort of farmers, supported by the same policies, in adopting in their business management measures to mitigate emissions and adapt to climate change. In this context, consumers may be part of a virtuous path that comes from the fields to the table, through their purchase choices and food consumption. To achieve this goal, the campaign has focused on some key messages such as fight against food waste, support to sustainable production patterns and the importance to promote balanced diet. The campaign was taken in Sana 2018 (the Italian most important organic fair), Terra Madre Salone del Gusto 2018 (an international food and wine event) and, with its own information corner, in a shopping mall located near Rome. The activity in trade shows mainly concerned the presentation of the campaign structure and contents, while the actions into the shopping mall mainly involved children in playful interactive activities with the help of trained assistant. The materials produced are as follows:

- a plain language leaflet;
- four different types of postcards topics related to the main sustainable production's logos and marks;
- an animated cartoon video;
- a questionnaire submitted to children;
- a certificate of merit delivered at the end of the questionnaire as a thank you for participating;
- gadgets featuring the two characters (Gaia and Elio) of the video who are the corporate image of the campaign.

All the activities were carried out by trained personnel, who tell the video cartoon story to the children and administered questionnaire. At the end of this educational path, children also received the plain language leaflet and the gadget.

In general, public involvement was positive, in terms of interest and in terms of children's participation. During the campaign, about 800 questionnaires were submitted.

Event outcomes have revealed that families are aware about this topic. Often children themselves, thanks to the schools' initiatives, are the one promoting in the family a more respectful behaviour and consciousness on climate and the environment issues.



Front of the plain language leaflet



Back of the plain language leaflet



The campaign in Salone del Gusto fair trade show, with Italian Minister Ministry of agriculture food forestry policies and tourism. (Torino, September 2018)

FOODWASTE: NATIONAL DATABASE FOR MEASUREMENTS OF FOOD WASTE AND LOSSES ALONG FOOD CHAIN

■ OUTLINE OF THE CASE

- Establishment of an Italian Observatory that collects, disseminates information, statistics, policies and best practices on surpluses, recoveries for human consumption and food waste, along food supply chain;
- Establishment of a permanent coordination table headed by the Ministry of Agricultural Food, Forestry Policies and Tourism. Law 166 of 2016 attributes a pivotal role to the Ministry in dealing with this matter as it has an all-encompassing view of the problem having as its competence and as stakeholders the whole agri-food chain.

■ POINTS OF THE CASE

- Mapping of National experiences aimed to prevent food surpluses creation, and projects and initiatives aimed at managing, redistributing and recovering food excess. Accountability and measurements performed at the national level are devoted to accomplish The UN Agenda 2030 SDG 12.
- The responsible body for Food Waste Observatory is the Food and Nutrition Research Centre of CREA, a national research institution under the aegis of Italian Ministry of Agricultural Food, Forestry Policies and Tourism.
- Development of Observatory: ongoing measurements, data harmonisation, creation of indicators. Primary data collection: evaluation of household food waste and evaluation of attitude towards the issue of food waste at consumers' level. Systematic review on food waste and losses in Italy.
- Next steps: primary production analysis for total and stepwise food losses evaluation. Policy actions addressed to consumers in order to prevent and reduce food waste.



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SIGRIAN: NATIONAL INFORMATION SYSTEM FOR WATER MANAGEMENT IN AGRICULTURE

■ OUTLINE OF THE CASE

- Reference database for the irrigation sector identified by the Italian Ministry of Agricultural Food, Forestry Policies and Tourism. (MiPAAFT)
- Geographic Information System managed by CREA Research Centre for Agricultural Policies and Bioeconomy
- Quantification of water volumes for irrigation
- EU Ex-ante conditionality for water resources

Background: EU principles provides that Member States adopt water pricing policies for enhancing the sustainability and improve water use efficiency. Irrigation volumes quantification and monitoring is a prerequisite for the application of a water pricing policy based on the volumes actually used. In 2015 in response to ex-ante conditionality for water resources, MiPAAFT published the National Guidelines for the Quantification of water volumes (Ministry decree July 31, 2015) that designate SIGRIAN as the reference GEOdatabase to collect the irrigation volumes data. SIGRIAN was built in 1994 to collect data on the irrigation sector such as Administrative boundaries, irrigation supply and networks, crop type, etc. The responsible body of database SIGRIAN is CREA Centre for Agricultural Policies and Bioeconomy .

Outcomes: Actually the SIGRIAN collect data of:

- 576 Irrigation Agencies with management and cultural information, administrative limits and extension of relevant areas;
- Economic data: both at irrigation Agencies level and at irrigation district level (contribution for irrigation);
- More than 5,600 water supply point with an indication of the type, the volumes abstracted and water concessions;
- More than 3,500 irrigation districts with related equipped and irrigated areas, irrigation systems, irrigated crops and used volumes;
- Almost 38,000km of irrigation networks, 25,000 km of which divided into primary and secondary systems. Distribution networks are partially collected.
- Self supplying irrigation data

Way Forward: Support to the evaluation of the irrigation efficiency of collective distribution networks.