European Network for Rural Development

Case Study – EMILIA ROMAGNA
Programming for the Green Economy: RDP measures based on a LIFE+ study of best practice in reducing GHG emissions from agriculture

Introduction

Emilia-Romagna Region is one of the leading agricultural regions in Italy with more than one million hectares of farmland, of which 79% is used for arable cropping, 10% for meadows and permanent grassland and 11% for permanent crops. Cereals, fruit, vegetables and grapes (for wine-making) are the main crops and about one third of the region's farms have some irrigated land. There are more than 1.2 million livestock, and Emilia-Romagna provides over 42% of the total Italian turnover from quality agricultural products (PDO and PGI). Organic farming covers just 3.3% of the farmland, and 75% of all farming in this region is of high and medium intensity. The region is well known for producing high quality food such as Parmigiano Reggiano cheese and local specialities including peaches and pears.

For the past 30 years the regional policy for sustainable farming in Emilia-Romagna has focused on public health, Integrated farming (low input management), organic production, animal welfare and on dealing with the problem of water pollution by strict application of the Nitrates Directive. The regional government developed a quality assurance label Qualità Controllata for the produce of environmentally friendly integrated farming systems, such as beef and fresh milk.

It was realised that additional efforts were needed to address the problems of GHG emissions from agriculture, which account for 7% of the total emission for Italy, and come mostly from ruminant livestock (as a result of enteric fermentation) and from agricultural soils.

Qualità Controllata
Produzione integrata rispettosa dell'ambiente e della salute
LEGGE REGIONALE DELL'EMILIA-ROMAGNA 28/99

The 2007-2013 RDP had promoted more sustainable agriculture through support for organic and integrated farming, and researchers had calculated the carbon footprint of these systems, comparing their GHG emissions with those from conventional farms.

Meanwhile the private sector was experimenting at farm level with management practices that could reduce GHG emissions, and in 2012 the region seized an opportunity to apply for LIFE+ funding to take this work further.

Climate changE-R defines best practice in agricultural GHG reduction

Funded by the LIFE+ programme for environmental policy and governance, the three-year Climate change-R project started in 2013 with the aim of defining and demonstrating the best agricultural practices that can have a positive effect in GHG mitigation in Emilia-Romagna[1], and encouraging farmers to adopt these.

The aim is to achieve a reduction in GHG emissions from agriculture compared to the current trend, and to use the lessons learnt to raise awareness among farmers, the agri-food sector and consumers of the benefits of moving towards a low carbon food economy. The €1.85 million project is co-ordinated by RDP managing authority and from the outset it was planned that best practices for reducing GHG emissions (CH4, N2O and CO2) identified by the project would inform the design and targeting of climate mitigation support in the 2014-20 RDP.

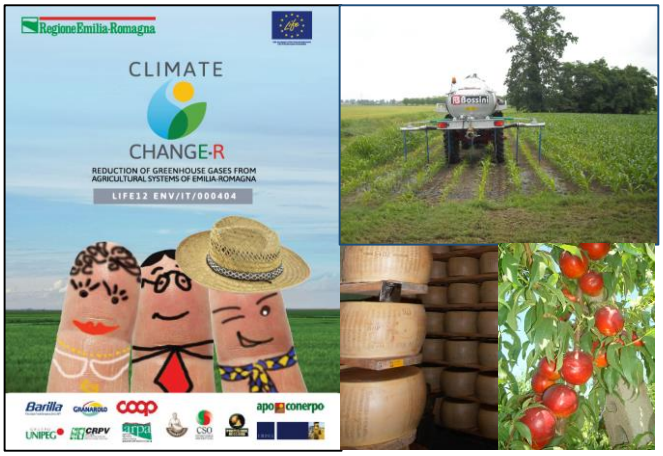
The Climate change-R project focuses on reducing the carbon footprint of five crops and three livestock products that are important in the agri-food sector of Emilia-Romagna - peaches, pears, durum wheat, tomatoes, green beans, milk, meat and milk for Parmigiano-Reggiano cheese.

[1] LIFE12 ENV/IT/000404 Reduction of greenhouse gases from agricultural systems of Emilia-Romagna http://agricoltura.regione.emilia-romagna.it/climatechanger/temi/english-version

For each of these eight farm products the project has:

- applied life cycle assessment methodology to measure the GHG emissions up to the point at which they leave the farm, and make the results available in a public database;
- identified good mitigation practices which have been assessed by the stakeholders, including evaluation of the socio-economic aspects of different practices;
- run demonstrations and provided information for farmers and consumers.

The three-year project started in 2013 and is run by a Project Partnership of eleven organisation including research and innovation institutes and important agri-food businesses which cover, directly or indirectly, the interests of about 30% of the region's farms and more than 8 million consumers.



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Best practices for GHG reduction identified by the Climate change-R LIFE+ project

For crops and fruit production:

- crop rotation of at least 3 crops in 5 years, with no crops grown for two successive years on the same place;
- fertiliser applications based on crop uptake and availability of plant nutrients in the soil, with specific rules for organic fertilisers to assess the nutrient value of manure;
- soil management techniques such as precision farming and minimum tillage;
- chemicals to control crop pests, diseases and weeds applied only when necessary, and applications timed to minimise the environmental impact by using forecasting models and information bulletins;
- crop irrigation planned using meteorological information and data on crop uptake soil texture.

For livestock production:

- apply crop best practices to feed and fodder production;
- analyse feed and fodder to make most efficient use of it;
- use advanced management techniques to formulate livestock diets and also for manure management.

These best practices have been promoted at 16 public demonstration days involving more than 320 technicians and farmers. The project has also led to framework agreements for good GHG mitigation practices being set up between farmers and the businesses that buy their produce – for example, contracts for durum wheat and tomatoes.

Using the 2014-20 RDP to encourage adoption of best practices in GHG reduction

The RDP is the most important policy instrument to support sustainable farming in Emilia-Romagna and the measures for agri-environment-climate, organic farming, investment in farm holdings, knowledge transfer, advice and cooperation are all being used to promote adoption of Climate ChangE-R best practice across the region. Examples include:

- Agri-environment-climate 5-year contracts designed to:
  - improve the quality of water and soil, going further the usual Integrated production commitments (€60-350/ha/year)

  - reduce GHG and ammonia emissions and ammonium through better management of livestock (€100/ha/year)
  - increases the organic matter content of arable soils (€100/ha/year)
  - support sustainable management of extensive grassland to promote carbon sequestration (€150/ha/year)
- Support for conversion to organic farming production (€90-740/ha/year)
- Farm investments to reduce GHG and ammonia emissions (40-60% of approved cost)
- Innovation, education and farmer extension services
- Collective action by livestock farmers to reduce emissions of GHG and ammonia

By the summer of 2016 more than 230,000ha of farmland (20% of the region's utilised agricultural area) was involved in at least one of these measures.


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Key points

- ✓ Emilia-Romagna is one of Italy's leading agricultural regions, well-known for regional specialities such as Parmigiano Reggiano cheese but also producing cereals, meat, milk, vegetables and fruit on its one million hectares of farmland.
- ✓ The regional authorities had already created a quality food label for producers adopting integrated (more sustainable) farming methods, but wanted to take this further and reduce the carbon footprint of the region's key farming sectors.
- ✓ A three-year project, supported by EU LIFE+ funding, brought together 11 major stakeholders from the farming and the agri-food sectors to identify and assess best practices for GHG and ammonia reduction for both cropping and livestock farms. These practices were promoted through a demonstration and information programme funded by the project, and already some framework agreements for good GHG mitigation practices are being set up between farmers and the businesses that buy their produce.
- ✓ The RDP 2014-20 aims to encourage famers to adopt best practices identified by the LIFE+ project through measures for agri-environment-climate, organic, investment, knowledge transfer and cooperation that have reached more than 20% of the region's farmland.

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