



European
Commission

Climate Action

LIFE PROJECTS 2015

LIFE *Climate Action*

Environment
& Climate
Action



**EUROPEAN COMMISSION
ENVIRONMENT DIRECTORATE-GENERAL**

LIFE (*"The Financial Instrument for the Environment and Climate Action"*) is a programme launched by the European Commission and coordinated by the Environment and Climate Action Directorates-General. The Commission has delegated the implementation of many components of the LIFE programme to the Executive Agency for Small and Medium-sized Enterprises (EASME).

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LIFE Climate Action 2015: Commission funds 34 new projects in 10 countries with €41.5 million

The European Commission has approved funding for 34 Climate Action projects under the LIFE programme, the European Union's fund for the environment and climate action. The action grants have been awarded to 'beneficiaries', or project promoters, in 10 Member States and cover actions in the three priority areas of the LIFE sub-programme for Climate Action: climate change mitigation (LIFE CCM); climate change adaptation (LIFE CCA); and climate governance and information (LIFE GIC). The projects are led by beneficiaries based in Austria, Belgium, Cyprus, France, Greece, Italy, The Netherlands, Portugal, Slovenia and Spain.

LIFE Climate Action in 2015

The 34 projects selected for funding will be led by universities, research institutes, public authorities and private enterprises. The projects involve a total investment of €75.1 million, of which the Commission is providing action grants worth €41.5 million.

This sum is split among the three priority areas, with the EU providing €19.4 million to 16 LIFE CCA projects. These adaptation projects, which are worth in total €32.9 million, are focusing on five thematic areas: agriculture/forestry/tourism, adaptation in mountain/island areas, urban adaptation/planning, vulnerability assessments/adaptation strategies, and water.

The 12 LIFE CCM projects selected will receive LIFE funding of €18.0 million and represent a total investment of €35.3 million. These mitigation projects will demonstrate best practice in three areas: energy, industry and land use/forestry/agriculture.

The six LIFE GIC projects have been awarded €4.1 million of funding to improve governance and raise awareness of climate change. The total budget for this priority area amounts to €6.9 million.

Background

The LIFE programme is the EU's funding instrument for the environment and climate action. The general objective of LIFE is to contribute to the implementation, updating and development of EU environmental and climate policy and legislation by co-financing projects with European added value.

The budget for the LIFE Programme for 2014–2020 is set at €3.4 billion in current prices, administered through the Environment and Climate Action sub-programmes.

The Climate Action sub-programme will provide €864 million in co-financing for climate projects between 2014 and 2020. Its main objectives are to:

- Contribute to the shift towards a low-carbon and climate-resilient economy;
- Improve the development, implementation and enforcement of EU climate change policy and legislation;
- Support better environmental and climate change governance at all levels; and
- Support the implementation of the 7th Environment Action Programme.

More information on each LIFE Climate Action project is available at:

<http://ec.europa.eu/environment/life/project/Projects/index.cfm>

Contact details for the relevant national authorities can be found at: http://ec.europa.eu/environment/life/contact/nationalcontact/life_clima.htm

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Climate action campaign for low-income households

Project background

Action by Member States is essential to reach the EU climate protection targets for 2030 and 2050. Climate change mitigation plans often overlook the barriers to participation facing low-income households. A demonstration project focusing on this target group could have an important multiplier effect across the EU.

Project objectives

The overall objective of the project is to initiate changes in the everyday behaviour of low-income households, a target group particularly vulnerable to the consequences of climate change. By actively engaging low-income groups in climate protection, the project will also raise living standards and reduce energy bills.

Specific project actions will include:

- Disseminating climate protection starter kits to low-income families. The kits will include measures to save energy (e.g. LED lamp, multiple plug connector) and to reduce emissions (e.g. bike repair kit);
- Providing free advice to low-income households at home about easily adaptable options for saving energy (electricity, hot water, heating), encouraging the use of public transport and consumption/purchasing/nutrition; and
- Communicating special offers, events and sponsorships organised by electricity utility companies, transport companies and public bodies.

Expected results

- Draft regional and national climate protection and energy saving strategies that will significantly contribute to CO₂ emissions reductions;
- 40 workshops organised to empower low-income households to save energy, reduce bills and protect the climate. Some 600 people will take part in the workshops and 1 080 climate protection starter kits will be distributed;
- 60 volunteer counsellors trained to provide a free 'Climate Protection & Save Energy-Check' to low-income households. The trained counsellors will make a total of 3 240 home visits;
- Seven seminars attended by a total of 210 stakeholders working in the fields of energy, counselling, real estate and politics;
- Raised awareness through a comprehensive communication strategy, including a project video, as well as obligatory LIFE project communications activities; and
- Stable long-term partnerships through networking.

LIFE15 GIC/AT/000092

LIFE - ClimAct



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Andrä STIGGER

Duration of project:

45 months (01/10/2016 – 30/06/2020)

Total budget in euro:

996,716.00

EC contribution in euro:

596,025.00

Successful implementation of the project's initiatives could reduce energy use by a total of 1 112 670 kWh per year and CO₂ emissions by 358.5 tonnes per year.

BEVERAGE - Brewing Energy saving pilot for an innoVative, Efficient, and enviRonmental beverAGE process

Project background

The brewing process is very energy-intensive and requires significant amounts of water, compressed air, lighting and refrigeration. The standard process for brewing a beer or a malt-based beverage is unsustainable in terms of water consumption and thus causes problems in terms of water scarcity. The most energy-intensive part of the brewing process is boiling, which consumes up to 20% of the total heat required and generates high levels of greenhouse gases. There is a clear need for a more cost-effective and sustainable process that meets the goals of the EU Strategy on adaptation to climate change by lowering use of resources, such as water, and of climate change mitigation policy by contributing to the transition towards a low-emission and climate-resilient economy.

Project objectives

The LIFE BEVERAGE project aims to reduce the emission of greenhouse gases caused by beverage production through a new process that will be piloted at breweries in Belgium and the UK. The new system is based on the principle of stripping unwanted components from a liquid by sparging an inert gas. This simulates the effect of boiling without the heating requirements. When applied to breweries in which no energy-reducing measures have been installed in the boiling step, the technology will enable a reduction of the average evaporation rate from 7.5% to zero, improving water and energy efficiency and offering potential climate advantages compared to current best practice. If the project is successful the technology could be applied to other breweries, thus enabling this sector to contribute to the EU's shift towards a resource-efficient, low-carbon and climate-resilient economy.

Therefore, LIFE BEVERAGE is a concrete example of a LIFE Climate Change Mitigation action that contributes to the development and implementation of European Union climate-related policy and legislation, in particular with regards to energy consumption and greenhouse gas emissions from intensive industrial production.

Expected results

- CO₂ emissions: carbon footprint reduction of the brewing process by at least 460g of CO₂ equivalent per hectolitre (8.6% reduction), which, for the pilot plants, gives a saving of 3 930 tonnes of CO₂ equivalent on an annual basis;

LIFE15 CCM/BE/000090
LIFE BEVERAGE



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Duration of project:

24 months (01/07/2016 – 30/06/2018)

Total budget in euro:

1,558,510.00

EC contribution in euro:

863,105.00

- Energy efficiency: an overall saving of at least 19.4 GWh, which represents an average reduction of 12.1% of the plants' energy usage;
- Water consumption: because less water is evaporated during boiling, less water needs to be added during later steps in the process, leading to an effective saving of 1% of water in the production process; and
- Replicability: roll-out of the technology in another five plants, with a combined total production of 411.5 million hectolitres of beer per year, so that AB-InBev can study the feasibility of its implementation in all applicable plants worldwide (66 plants are already eligible for the technology).

Climate Proofing Urban Municipalities

Project background

Cities and towns, with their high population densities and dependence on collective infrastructure, are extremely vulnerable to the impacts of climate change. The concentration of people in urban centres restricts vegetation and green spaces, thus increasing risks related to heat and floods. The impacts of climate change on the urban environment have consequences for public health, water availability and quality, energy consumption and essential infrastructure. Climate change impact assessments and expertise are lacking at a local level, making it difficult for municipalities to implement adaptation strategies. The availability of appropriate frameworks and tools would improve decision-making.

Project objectives

The overall aim of the UrbanProof project is to increase the resilience of municipalities to climate change by equipping them with a tool that supports their climate change adaptation planning. This tool will provide insight into expected changes in climate and increase understanding of its impacts. It will also help evaluate adaptation options and guide monitoring. Other objectives are to:

- Demonstrate an innovative and interactive decision-support tool (UrbanProof toolkit) for urban adaptation planning, which will provide local decision-makers, stakeholders and target groups with access to visual information (maps and graphs) on climate change vulnerability, adaptation and monitoring and which will guide them, step-by-step, through the whole adaptation process;
- Bridge the gap between scientific and local understanding of climate change by providing information on future climate changes at local level;
- Identify the impacts and evaluate the vulnerability to climate change of the partner municipalities (in Cyprus, Greece and Italy);
- Identify, evaluate and prioritise adaptation options and develop local adaptation strategies for the partner municipalities;
- Communicate climate change and its associated risks for the partner municipalities as well as the available options for addressing them by implementing, demonstrating and promoting green and soft adaptation measures in order to increase public awareness of climate change adaptation;
- Gain public acceptance and ensure active participation and engagement of local stakeholders during the implementation of the adaptation strategy, and promote the continuity and economic sustainability of this strategy; and

LIFE15 CCA/CY/000086
LIFE UrbanProof



Beneficiary:

Name of beneficiary

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Theodoulos MESSIMERIS

Duration of project:

44 months (01/10/2016 – 31/05/2020)

Total budget in euro:

1,854,000.00

EC contribution in euro:

1,104,599.00

- Promote the adoption of the proposed methodology and adaptation options to other municipalities in order to maximise transferability and replicability.

Expected results

- Development of the UrbanProof toolkit, a web-based platform and decision-support tool for urban adaptation planning and community-based participation;
- Production of a toolkit administrator guide and tutorial video;
- Evaluation of the technical and economic viability of the toolkit;
- Assessment of the likely impacts of climate change on the partner municipalities and development of local adaptation strategies for these municipalities;
- Endorsement by the municipalities of these strategies (local council approval);
- Implementation of green infrastructure projects in partner municipalities in Cyprus and Italy, including green spaces, green roofs and permeable pavements; and
- Dissemination activities including events, training seminars, a scientific conference and technical and scientific publications.

Forest: Climate Change Adaptation

Project background

The Haut Languedoc forest is located at the intersection of the Mediterranean and Atlantic bio-regions. As a result, it is an ecosystem that is highly sensitive to the impacts of climate change, as can be seen in areas of reforestation following the forest fires of 2003. Such impacts are expected to become more pronounced in future. There is a lack of information and tools for forest managers and stakeholders in the forestry-wood sector which increases the vulnerability of this natural habitat and economic environment to future threats.

Project objectives

The main objective of the project is to provide forest owners and the managers of the PNRHL with the means to develop a management strategy, taking climate change scenarios into consideration, in order to protect territorial forest ecosystems and ensure a dynamic forestry sector. Specifically, the project aims to:

- Develop methodologies and tools to help decision-making for the forestry-wood sector;
- Incorporate field observations to improve the usefulness of the decision-making tool developed by the project, FORECCAsT;
- Make a list of bio-indicators that will form the basis of a monitoring system on the effects of climate change on woodland biodiversity;
- Protect vulnerable ecosystems, in particular the natural habitats of community interest in the PNRHL;
- Propose adaptation strategies for forestry and genetic resources in line with levels of risk, including alternative production systems and a better understanding of biodiversity and the risk of forest fire;
- Suggest procedures of post-event analysis and reaction in order to provide forest managers with an action plan in case of climate-related crises; and
- Raise awareness among local populations involved in the forestry sector of the issues and the need to protect the industry.

Expected results

- Dissemination of the FORECCAsT tool that will include climate, topographical and pedagogical parameters;
- 10 test description reports with details on technical and economic consequences of new forestry practices on existing forest plots;
- 12 test description reports based on experiments of new forestry practices on new forest plots;

LIFE15 CCA/FR/000021
LIFE FORECCAsT



Beneficiary:

Name of beneficiary

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Xavier BEAUSSART

Duration of project:

40 months (01/07/2016 – 01/11/2019)

Total budget in euro:

1,314,330.00

EC contribution in euro:

788,598.00

- Distribution of an action plan for crisis management: 150 to 180 managers will be better informed and prepared to act during the next climate crisis thanks to better stakeholder participation and identification of the responsibility of each partner;
- Development of a training module for the FORECCAsT tool and creation of a central advisory group of forest managers in the PNRHL with 120 to 180 participants; and
- Communication actions such as demonstration sessions on test sites with forest owners and managers.

Advanced Biodiesel in circular economy for low carbon public transport

Project background

Petroleum products still account for 95% of fuel consumption by European road transport and represent 21% of European greenhouse gas (GHG) emissions. The EU has set a target for every Member State that at least 10% of its transport fuel comes from renewable sources by 2020. First generation biofuels have helped reduce GHG emissions, but they also have a negative impact on water and soils, as well as competing for land used by food crops.

EU strategy, however, is to move towards second generation biofuels, which are made from waste or agricultural and forestry residues, and algae (third generation). Used cooking oils (UCOs) are processed from food industry and catering waste. Cheap and widely available, they are playing an increasing role in the development of advanced biofuels. However, less than 40% of discarded UCOs are collected, and the biofuels processed from these still have negative environmental impacts. Moreover, current biofuel production requires the long-distance transport of materials, accounting for up to 20% of the GHG impact.

Project objectives

BIOHEC-LIFE aims to:

- Validate an eco-designed, compact and flexible demonstrator that produces competitively priced advanced biofuels derived from UCO and bioethanol;
- Provide the transport fleets of French local authorities with locally produced biofuel;
- Validate an economic, social and environmental model for the production chain in the city of Lille and the wider Nord-Pas-de-Calais-Picardie region;
- Encourage the replication of this model in other French and European territories through partnerships and franchises; and
- Develop and promote new methods enabling the optimised recovery of UCOs.

Expected results

- Construction of an eco-designed, 2 000 litres/day demonstrator that processes UCOs with up to 50% acidity for biofuel production;
- Production of UCO-derived biofuel and bioethanol that reduces GHG emissions in the lifecycle by 93% compared with gasoline and by 22% compared with other biofuel processes;
- Reduced environmental impacts compared with gasoline, including a 86% reduction in the consumption of non-renewable energies, a 97% reduction of photo-

LIFE15 CCM/FR/000068
BIOHEC-LIFE



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Duration of project:

37 months (01/12/2016 - 31/12/2019)

Total budget in euro:

2,446,344.00

EC contribution in euro:

1,459,164.00

- chemical oxidation, a 98% reduction in human toxicity and a 46% reduction in eutrophication;
- High-value recovery chains for glycerol (minimum objective of €400/tonne);
- Creation of a local, competitive supply chain for second generation bioethanol;
- Successful running of the city of Lille's vehicle fleet for 19 months;
- Supply of 245 000 litres of fuel;
- Air emissions from the vehicles compatible with European emission standards 4 to 6;
- Methods and tools necessary to reach a rate of household waste recovery of 0.1 kg per inhabitant in participating local communities – i.e. avoiding 0.27 Mt eqCO₂ of emissions;
- Technical, socioeconomic and environmental data validating the creation of a circular production chain for the processing of UCO-derived biofuel for the use of local communities;
- A methodology to accompany and support the setting up of production chains in order to ensure their replicability; and
- The signing of three franchise agreements in three target countries identified as the most favourable for replication, along with three other agreements signed in France.

Solidia low CO₂ cement: from cement production to precast industry

Project background

The cement industry is energy intensive and produces significant quantities of greenhouse gases. It accounted for 2-2.5 gigatonnes of CO₂ emissions in 2013, or 6.5% of the estimated total worldwide anthropogenic emissions of 37 gigatonnes (source: the Intergovernmental Panel on Climate Change and the International Energy Agency). Some 60% of the CO₂ emissions in cement manufacturing are generated during the high temperature transformation of limestone, a process known as 'decarbonation'.

The EU has set itself a target of reducing greenhouse gas emissions by 40% by 2030 compared to 1990 levels and a long-term goal of reducing emissions by 80-95% by 2050. Aware of the environmental impacts, cement producers have already taken major measures to reduce cement production-related CO₂ emissions, However, such approaches are reaching their limits. The industry must develop new products and technologies that mitigate CO₂ emissions in order for it to meet the requirements of EU climate change mitigation policy and to contribute to the transition towards a low emission and climate-resilient economy.

Project objectives

The SOLID LIFE project aims to demonstrate that it is feasible to produce low-emission cement and concrete products at industrial scale in existing industrial installations. The new products will have equivalent cost, superior performance and a 70% reduction in CO₂ emissions compared to conventional Portland cement within existing industrial installations.

This new products will make use of a low-calcite and non-hydraulic binder called Solidia, which has been under development by the project beneficiary since 2013 and subject to testing in Germany, Hungary and the USA.

The project aims to validate the CO₂ savings observed at laboratory scale, through pilot-scale and industrial trials in real cement production facilities, and then in precasting facilities requiring adapted curing chambers with CO₂ input. The project also aims to increase stakeholders' awareness of the potential emissions reductions and climate action benefits, in line with European policy targets

LIFE15 CCM/FR/000116
SOLID LIFE



Beneficiary:

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Vincent MEYER

Duration of project:

28 months (15/06/2016 – 30/10/2018)

Total budget in euro:

3,830,320.00

EC contribution in euro:

2,196,012.00

Expected results

- The successful production of 10 000 tonnes of good quality Solidia cement at industrial plants using similar raw materials to those used for conventional cements (pilot tests of between five and eight new cement recipes);
- The Solidia cement will be tested in industrial-scale concrete precast applications to validate environmental, technical and economic properties;
- Expected benefits for the precast industry include faster strength acquisition (the same resistance level after one day of curing as after 28 days for Ordinary Portland Cement, avoidance of efflorescence (white aspect on surface of cement) and the ability to indefinitely re-use all waste concrete (prior to carbonation) because no hydration reaction occurs with the new binder;
- A 70% reduction in CO₂ emissions;
- A communication strategy targeting the cement production chain, the general public and policy-makers. Targeted audiences will be informed about the new method of significantly reducing greenhouse gas emissions in the cement industry; and
- The commercial rollout of cement produced using the Solidia binder as part of broader efforts to support CO₂ reduction planning within the EU.

Close the gap between official manufacturer's data and real world fuel consumption of cars

Project background

Cars are responsible for 12% of Europe's total CO₂ emissions and are the single largest source of emissions in the transport sector. Differences between fuel consumption and subsequent CO₂ emissions figures in laboratory tests and real-world driving conditions are a matter of significant public concern. The gap between official and real world driving CO₂ emissions increased from 8% in 2001 to 40% in 2014. The difference between lab tests and real world performance undermines the environmental steering effect of the European CO₂ standards for cars. The new Worldwide Harmonised Light Vehicles Test Procedure (WLTP) will help address this issue, but further measures are needed.

Project objectives

The project aims to solve one of Europe's major environmental challenges in road transport – the gap between official and real-world driving CO₂ emissions/fuel consumption figures. The project will focus on emerging issues under the WLTP and will develop and advocate solutions in order to ensure that the gap does not widen. The objectives are two-fold:

Firstly, to empower political decision-makers at European and national level to improve the legislation on CO₂ emissions from vehicles and its implementation by:

- Evaluating the new WLTP and identifying loopholes;
- Sharing best practices and developing solutions for a better testing framework at European level and better consumer information (e.g. European Type Approval Authority and the use of PEMS); and
- Supporting Member States to strengthen the implementation of CO₂ targets by transferring best practices in the field of market surveillance and vehicle taxation to the WLTP.

Secondly, to empower Europe's consumers to make informed purchase decisions and take action against the undisclosed real world figures by:

- Making car owners, fleet operators and the media aware of the growing gap;
- Initiating a public discussion on the problem in a bid to motivate decision-makers into finding solutions; and
- Providing consumers with legal advice and real world consumption data.

LIFE15 GIC/DE/000029

LIFE-Close the Gap



Beneficiary:

Name of beneficiary

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Dorothee SAAR

Duration of project:

42 months (01/08/2016 – 31/01/2020)

Total budget in euro:

1,273,934.00

EC contribution in euro:

764,060.00

Expected results

- Emission and fuel consumption tests set up to evaluate the new procedure, increase its positive impact and contribute to more transparent and realistic data;
- Consumers and policy-makers provided with background information to inform and empower them to act;
- Expert conferences in Brussels and Germany to take up the results of the testing and propose solutions to emerging WLTP issues;
- A legal study on consumer rights to transfer best practices in governance and to motivate the replication of the initiative; and
- Networking at EU level that includes a broad network of NGOs and decision-makers in other Member States, the European Commission, European Parliament and relevant LIFE projects.

Sustainable adaptation of typical EU farming systems to climate change

Project background

The Intergovernmental Panel on Climate Change (IPCC) predicted in its 2014 report that climate change would have negative impacts on agriculture for the rest of this century, even in temperate zones such as in Europe. Integration of adaptation measures into the Common Agricultural Policy (CAP) and Cohesion Policy can increase the resilience of EU agriculture to climate change.

Project objectives

LIFE AGRI ADAPT aims to increase the resilience of EU agriculture to climate change by demonstrating sustainable best-practice adaptation measures with an ecosystem-based approach at farm level. Achieving this aim will help further integrate adaptation into the Common Agricultural Policy (CAP), Cohesion Policy, the Thematic Strategy for Soil Protection and EU Biodiversity Strategy. The project will also foster the exchange of best practice and raise awareness of climate change vulnerabilities and adaptation options, a priority of the EU Strategy on adaptation to climate change.

Specific project objectives include:

- Improving the knowledge base for the development, assessment and monitoring of climate change vulnerability at farm level by developing and testing a common method ready for use in the four EU climate risk areas;
- Testing sustainable measures and management approaches for climate change adaptation by identifying and implementing them with concrete action plans on 120 pilot farms covering the three main farming systems (arable land, livestock and permanent crops) in the four EU climate risk areas. The pilot farms will be located in Estonia, France, Germany and Spain and cover 29 600 ha in total;
- Promoting sustainable adaptation measures and enhancing the capacity to apply that knowledge in practice by demonstrating those measures to farmers, farmers' associations, agronomists, food standards agencies and agricultural insurance companies;
- Raising awareness among farmers and future farmers of sustainable adaptation options at farm level by developing, creating and disseminating training packages; and
- Contributing to the development and implementation of EU policy on climate change adaptation by transferring best practice and know-how to political, agricultural and food business stakeholders at regional,

LIFE15 CCA/DE/000072
LIFE AGRI ADAPT



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Patrick TRÖTSCHLER

Duration of project:

40 months (01/09/2016 – 31/12/2019)

Total budget in euro:

2,161,437.00

EC contribution in euro:

1,295,347.00

national and European level, and by mainstreaming across policy areas.

Expected results

- Four baseline reports (one for each EU climate risk area) distributed to climate experts and agricultural stakeholders;
- Adaptation measures tailored to arable land, livestock and crop farmers for the 120 pilot farms participating in the LIFE project;
- An adaptation assessment and action plan for each of the 120 pilot farms, developed in collaboration with the farmers;
- Reduced vulnerability to climate change by 50% on each of the participating pilot farms;
- A tool for the assessment of climate change vulnerability at farm level in the four EU climate risk areas;
- General proposals for sustainable adaptation measures per farming system, based on results from the pilot farms and disseminated to political, agricultural and food business stakeholders at national and EU level and beyond; and
- Farming Adaptation Training Packages demonstrated at workshops and other events.

Optimizing Ecosystem Services in Viniculture facing Climate Change

Project background

Saale-Unstrut is a traditional wine-producing area of some 770 ha in southern Saxony-Anhalt. Its picturesque valleys have a sunny and dry micro-climate that is suited to growing grapes for wine. Climate change, however, will increasingly lead to aggravation of land-use conflicts. Rising average temperature and decreasing annual rainfall are significant drivers for cultivation methods to be adapted. Viticulture on steep slopes is endangered and could be replaced by more efficient vineyards in the plains. These areas would then face scrub encroachment and thus become less ecologically valuable.

Project objectives

The main objective of the project is to optimise ecosystem services in vineyards by testing climate-adapted methods in viniculture. In the first part of the project, relevant methods will be implemented on demonstration areas of the Kloster Pforta vineyard in the Saale-Unstrut area of Saxony-Anhalt. The second half of the project will see these methods tested in other commercial vineyards in the region, as well as at the demonstration vineyard of the Anhalt University of Applied Sciences.

These trials will allow the project to evaluate the climate change adaptation measures in relation to the added value of the ecosystem services provided by the vineyards. Ecosystem-based approaches, focusing on synergies between nature protection, climate protection and climate adaptation are more cost-efficient than technical solutions. In this way, the project aims to contribute to the EU strategy on adaptation to climate change by supporting adaptation actions in vulnerable mountain areas with an emphasis on sustainable and resilient agricultural, forestry and tourism sectors.

Expected results

- Use of regional seed mixtures and planting of cover crops at 4 ha intervals to increase erosion control, preserve water retention and promote humidification;
- Vine rows managed through sheep grazing to the benefit of threatened plant and animal species, as well as the vines;
- Vine stocks given more space in order to foster the growth of leaves and root systems, leading to a higher resistance against droughts;
- The dense grape structures loosened to decrease disease susceptibility and to lower stress sensitivity;

LIFE15 CCA/DE/000103
LIFE VinEco



Beneficiary:

Name of beneficiary

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Jorn FREYER

Duration of project:

48 months (01/07/2016 – 30/06/2020)

Total budget in euro:

1,467,099.00

EC contribution in euro:

839,447.00

- Quantitative success indicators to measure erosion, pest, fungi, water stress and biodiversity;
- Guidelines for winemakers and related professionals outlining specific actions based on the project results and the inclusion of recommendations of a cost-benefit-analysis of vineyards using resource-efficient methods; and
- Creation of six permanent jobs.

Integration of climate change adaptation into the work of local authorities

Project background

Responsibility for infrastructure is devolved to the regional or local level in many parts of the EU. However, many smaller authorities lack the knowledge and capacity to address the challenges posed by the need for climate change adaptation. Specific threats at local level need to be identified and necessary measures carried out to address them and thus help in the implementation of the EU Strategy on adaptation to climate change.

Project objectives

LIFE LOCAL ADAPT aims to integrate climate change adaptation into the work of local authorities. It will establish partnerships to increase the adaptation capacities of selected local authorities in four EU Member States (Austria, Czech Republic, Germany and Latvia). The project aims to implement specific adaptation measures in cooperation with municipalities, enhance their knowledge of adaptation and improve the information base.

It will promote the active participation of at least three municipalities in EU initiatives such as the Covenant of Mayors for Climate and Energy, and the EU Climate-ADAPT Platform. It also aims to encourage municipalities to start implementing adaptation measures in key vulnerable sectors, such as disaster risk prevention and management, urban planning, infrastructure and health.

The specific project goals are to:

- Improve the data on climate change risks and related vulnerabilities and provide climate indices;
- Enhance municipalities' knowledge of adaptation, in terms of appropriate action and funding opportunities;
- Integrate adaptation into local authorities' administrative practices;
- Implement pilot adaptation measures to improve resilience to specific climate events and make participating municipalities more resilient in general through appropriate urban and landscape planning;
- Develop a pilot climate change adaptation strategy for the city of Valka in Latvia; and
- Ensure replicability through the development of transferable modules of actions.

Expected results

- A report on the local risk and vulnerability to heat waves heavy rain and drought;
- Climate adaptation factsheets for the participating municipalities;

LIFE15 CCA/DE/000133
LIFE LOCAL ADAPT



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Duration of project:

60 months (01/07/2016 – 30/06/2021)

Total budget in euro:

3,070,065.00

EC contribution in euro:

1,841,581.00

- An assessment of the benefits of urban adaptations measures;
- Three reports on resilience options, including best practice examples;
- Four factsheets of good practices to adapt to urban flooding, flash floods, soil erosion and heat waves;
- Factsheets about funding programmes supporting adaptation at municipal level;
- 29 workshops/information events with the municipalities of the three project regions;
- A concept for the implementation of an adaptation advisory service;
- Improved adaptation knowledge and capacity among decisions-makers in at least 15 municipalities/counties and four other organisations;
- Newly implemented features for Regional Climate Information Systems;
- Policy improvement in at least 10 municipalities/counties;
- Implementation of at least five best practice measures in vulnerable climate adaptation-related sectors;
- At least five municipal adaptation strategies;
- Contingency plans for severe heavy rain and heat waves; and
- Integration of the solutions identified during the project into existing climate services.

Reduction of CO₂ emissions by restoring degraded peatlands in Northern European Lowland

Project background

Some 25-30% of the total amount of carbon stored is found in peatlands, twice as much carbon stored in forests. Peatland degradation, however, leads to the decomposition and mineralisation of peat and consequently to the release of the stored carbon in the form of carbon dioxide (CO₂). According to Wetlands International, there are at least 500 000 km² of degraded peatlands worldwide, releasing some 2 billion tonnes/yr of CO₂ worldwide, a figure that is estimated to be increasing by 2% per year. Degraded peatlands are estimated to account for some 5-6% of all CO₂ emissions from anthropogenic activities and around 30% of CO₂ emissions caused by land use and its transformation.

The post-2020 international climate agreement of 2013 obliges signatories to report emissions and removals from peatland drainage and rewetting and to create national greenhouse gas inventories. But there is still a need for a comprehensive and unified strategy for restoring degraded peatlands.

Project objectives

The overall objective of the project is to reduce CO₂ emissions by restoring degraded peatlands and providing guidelines for decision-makers and conservationists. The project aims to:

- Restore degraded peatland sites;
- Measure the change in greenhouse gas emissions from peatlands before and after restoration and model fluxes using the Greenhouse Gas Emission Site Types (GEST) approach;
- Produce a handbook on how to carry out restoration and best manage the restored peatlands; and
- Create guidelines with best practice scenarios for peatland use in relation to EU climate policy and legislation.

The restoration of degraded peat deposits will be carried out in five countries in the North European Lowland on the Baltic coast – Estonia, Germany, Latvia, Lithuania and Poland. The project will contribute to EU climate policy and mitigation-related goals in the area of land use (LULUCF) by providing robust carbon data from peatlands.

Expected results

- Restoration of a total of 5 272.5 ha of degraded peatlands in five EU countries;

LIFE15 CCM/DE/000138
LIFE Peat Restore



Beneficiary:

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Duration of project:

60 months (01/07/2016 – 30/06/2021)

Total budget in euro:

6,010,517.00

EC contribution in euro:

3,549,480.00

- Restart or increase of the natural processes of peat accumulation in the degraded sites;
- Demonstration of new approaches and methods for re-vegetation of open water bodies and bare peat in abandoned peat mining areas;
- Establishment of vital peat-forming vegetation in flooded post-mining peat deposits and bare peat areas in Poland and Lithuania;
- Monitoring of the success of measures in all types of peatland at project sites by applying GEST as a common methodology for modelling CO₂ emissions;
- Raised awareness of authorities, decision-makers, local people, experts and other relevant stakeholders;
- Internationally applicable guidelines with recommendations and best practise scenarios for inclusion of carbon flux from restored peatlands of the temperate continental climate zone into national climate balances;
- Improved knowledge of the best practices for restoration through rewetting of different types of peatlands; and
- An internationally applicable restoration handbook.

Flood Risk ANTicipation and Communication in the Alps

Project background

Recent hydro-geological events in Italy, such as floods and landslides, have increased public awareness of the link between climate change and the frequency and intensity of extreme weather events. The EU Floods Directive requires Member States to produce flood risk maps for all watercourses and coastlines and to take adequate and coordinated measures to reduce flood risks. The Italian National Adaptation Strategy to Climate Change that was adopted in 2015 identifies Alpine regions as highly vulnerable requiring special attention be paid to the management of their water resources. Medium-to-long term strategies and adaptation measures for mountain areas must be developed to increase climate change resilience. The complexity of future risk flood management scenarios suggests they must be accompanied by a communication strategy to allow the different actors and stakeholders to be better able to face the challenges.

Project objectives

The project aims to support the anticipation and awareness of flood risk by identifying shortcomings and developing communication strategies on flood risk in selected areas of the Alps – specifically Trento. The project will focus particularly on the management of emergencies and attitudes to flood risk. Research has shown that different social groups have different understandings of flood risks and different degrees of acceptance of the necessary management measures. The project will address attitudes linked to the perception of 'zero risk' conditions or the total delegation of responsibilities.

Specific objectives of the project are to:

- Improve communications on flood risks by supporting both providers of information (through training for public bodies) and those who receive the information (through education and awareness raising of different stakeholder groups);
- Involve communities and stakeholders and encourage habits that can minimise the risks in a given territory;
- Develop an attitude of co-responsibility between public and private actors; and
- Produce guidelines on communicating and anticipating flood risk.

Expected results

- Customised maps of flood risk in case study areas for different user groups (decision-makers, technicians/professionals, general public);

LIFE15 GIC/IT/000030
LIFE FRANCA



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Duration of project:

42 months (01/07/2016 – 31/12/2019)

Total budget in euro:

1,058,242.00

EC contribution in euro:

630,383.00

- An analysis of how the different target stakeholder groups perceive flood risk;
- Creation of a digital platform (app and webGIS module) to disseminate information about flood risk maps and scenarios;
- Creation of an educational project with digital interactive exhibits/web media for schoolchildren and their families;
- A model of anticipatory governance for flood risk in the Alps, including a support programme for involving stakeholders in anticipatory exercises;
- A handbook for flood risk communication designed to be used by public bodies and professional groups in all Alpine regions;
- A communication strategy that includes meetings with local communities, public servants and technicians and training events for planning officers; and
- Development of a collaboration network for preparing wider projects (with and without EU funds) involving other regions and entities.

RainBO Life

Project background

The risk of flooding of small watercourses is a major problem in several Italian urban areas. Urbanisation, with a consequent decrease of soil permeability and loss of space for river and stream beds, is increasing the likelihood of flooding and the severity of its effects. Furthermore, climate change is likely to make severe rainfall events and flash flooding more common. Despite its dramatic and damaging effects, the risk of flooding of small watercourses in urban areas is often underestimated, and few prevention and mitigation measures have been undertaken.

Project objectives

The project will analyse rainfall phenomena related to climate change and demonstrate its impact in the municipality of Bologna. The main objective of the project is the improvement of knowledge, methods and tools for the understanding and forecast of the potential impact of heavy rains, especially with regard to the hydrological response of small basins and to the vulnerability of assets in the urban area.

Additional project objectives include:

- Developing an information system to provide territorial and census data, risks maps and information on critical infrastructure and buildings;
- Implementing advanced infrastructure for environmental monitoring;
- Creating hydro-geological models based on fields of precipitation for the forecasting of flash floods in small basins;
- Developing a flexible and scalable software platform to integrate data and models; and
- Demonstrating the effectiveness of the proposed methods and tools.

The RainBO project will contribute to EU policy objectives by supporting the development and implementation of local adaptation strategies and action plans against flood risks. This will be achieved through improved knowledge of the phenomena and the deployment of advanced technologies for environmental monitoring. RainBO aims to support the implementation of the EU Floods Directive, which requires Member States to assess flooding risk for all watercourses and coast lines, to map the flood extent and assets and humans at risk in these areas and to take adequate and coordinated countermeasures.

LIFE15 CCA/IT/000035

RainBO Life



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Duration of project:

37 months (01/07/2016 – 31/07/2019)

Total budget in euro:

1,235,745.00

EC contribution in euro:

677,656.00

Expected results

The project expects to achieve the following results:

- Implementation of an advanced monitoring infrastructure aimed at increasing the ability to diagnose actual weather conditions and to predict their evolution, overcoming limits of sensors currently available and improving meteorological forecasting models;
- Integration of a software platform of hydrological models to support the evaluation of the hydrological response of small basins and a number of vulnerability models for the main assets in the urban area potentially affected by flooding;
- Development of a support system that allows the user to apply models, and development of an adequate knowledge base on the potential impact on vulnerable targets;
- Monitoring of evolving conditions and the generation of watch alerts and warnings, using real-time data acquired by the monitoring infrastructure, the weather forecast and modelling; and
- Application of prototype monitoring infrastructure and a software platform in the municipality of Bologna.

Forage systems for less GHG emission and more soil carbon sink in continental and Mediterranean agricultural areas

Project background

The agricultural sector and climate change are strongly interlinked. On the one hand, climate change has a significant impact on the quality and quantity of agricultural production and related revenues while, on the other hand, agricultural practices generate considerable amounts of greenhouse gas (GHG) emissions that contribute to global warming. According to the European Commission Roadmap for moving to a competitive low-carbon economy in 2050, EU Member States should reduce GHG emissions by 80-95% compared to 1990 levels. The agricultural sector should contribute to this objective by reducing its emissions by around a half. Moreover, by 2021, Member States should prepare and maintain annual accounts that accurately reflect all emissions and removals resulting from agricultural activities on their territory, including croplands and pasturelands (Decision 529/2013).

Project objectives

The LIFE+FORAGE4CLIMATE project aims to demonstrate that agricultural systems connected to milk production can contribute to climate change mitigation through:

- The adoption of good practices to reduce emissions and maintain or increase the carbon stock in soil used to produce forage for ruminants; and
- The development and dissemination of tools for the evaluation of the carbon stock and GHG emissions resulting from activities relating to land use, land-use change and forestry (LULUCF) within the forage systems of two European climatic macro-areas: continental (for cow's milk) and Mediterranean (for sheep's and goat's milk).

The project will strive to increase the awareness of farmers of the role played by agriculture in the preservation of the environment and the climate through the development of tools that can be used by producers and legislators to quantify GHG emissions sources and carbon sinks. It will also highlight the real benefits at farm level, both in terms of climate change mitigation and economic sustainability, of good practices that do not require reduced production levels.

Expected results

- A consolidation of good production practices that favour the carbon stock in the soil and limit GHG emissions related to the dairy sector;
- Tools for the quantification of the carbon stock in the soil and GHG emissions;

LIFE15 CCM/IT/000039
LIFE+FORAGE4CLIMATE



Beneficiary:

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Maria Teresa PACCHIOLI

Duration of project:

48 months (01/09/2016 – 31/08/2020)

Total budget in euro:

2,850,980.00

EC contribution in euro:

1,704,963.00

- Greater awareness of the role of agriculture in the mitigation of climate change;
- A reduction in emissions by 530 000 tonnes of CO₂ equivalent per year for cow's milk production in the Po plain area; and
- A reduction in emissions of 223 000 tonnes of CO₂ equivalent per year for production of sheep's milk and goat's milk in the pilot areas in Sardinia and Greece.

Supporting the Implementation and Development of the EU ETS

Project background

In the context of the Roadmap 2050 and the 2030 Climate and Energy Policy Framework, the European Commission recently published a proposal for a revision of the EU ETS Directive that will apply as of 2021. The proposal identifies the following improvements to the directive:

- The implementation of robust, comprehensive, detailed and up-to-date ex-post economic assessments of the functioning of the EU ETS, including its impact and interactions with other climate and energy policies;
- The implementation of a high-level, international and diverse network of experts able to interact with policy-makers to provide feedback on the design and implementation of the EU ETS;
- Information to policy-makers in an accessible and usable form; and
- Ad hoc training that contributes to capacity building through the creation of a sound knowledge base for policy-makers on the economic issues associated with the design and implementation of the EU ETS.

Project objectives

The overall aim of the project is to support EU and Member State policy-makers who are contributing to the design and implementation of the new EU ETS legislation by providing them with the very best information on the economic functioning of the scheme to facilitate effective communication with other stakeholders. Specific aims of the project are as follows:

- Producing and delivering knowledge and information on the economic functioning of the trading scheme, focusing on the four areas where legislative action is foreseen: free allocation of emission allowances, impact on innovation and investment, interaction with energy policies, macroeconomic effects;
- Creating a forum for a constructive policy dialogue, in the four areas described above among the different policy-makers and stakeholders involved; and
- Bringing together EU ETS experts and creating a network that, together with the resources resulting from this project, will represent a knowledge hub and a point of reference for policy-makers involved in the design and implementation of the trading scheme.

Expected results

- An economic assessment of the first 10 years of the EU ETS, which will become the point of reference for understanding the functioning of this instrument;

LIFE15 GIC/IT/000051
LIFE SIDE



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Duration of project:

23 months (01/09/2016 – 31/07/2018)

Total budget in euro:

690,938.00

EC contribution in euro:

414,562.00

- A deeper understanding among policy-makers of the economic issues associated with the implementation of the trading scheme. This will be measured by means of a survey of 200 people working on climate policy;
- Enhanced coordination among policy-makers and other stakeholders in the design and implementation of new EU ETS legislation; and
- Creation of an expert group of around 20 people as well as online resources (including the economic assessment of the trading scheme) to act as a well-structured support system for policy-makers on the EU ETS.

The overall result will be to help EU and Member State policy-makers design and implement a more cost-effective EU ETS legislation, based on sound economic knowledge and informed engagement with other stakeholders.

MAInSTreaming Experiences at Regional and local level for adaptation to climate change

Project background

Southern Europe, particularly the Mediterranean basin, will be the area in the EU most affected by climate change. Strategies and plans for adaptation to climate change are developed at national and regional level in the EU. Italy launched its National Adaptation Strategy to Climate Change in 2014. Lombardy and Sardinia are facing similar challenges to other regions in the country and across the EU as a whole. Thus an analysis of their vulnerability to climate change and the mainstreaming of adaptation measures in these regions could represent a useful guide for other regions and countries.

Project objectives

The project aims to identify and test innovative tools of multi-level governance to support regions and local authorities in defining and developing adaptation strategies and policies. In particular, the project aims to build on existing developments in Lombardy to create a scalable methodology for integrating climate change adaptation into regional policies in different sectors.

The main objectives are to:

- Develop and supply a common methodology to support regions in identifying the principal vulnerabilities and priorities for action in line with Italy's national adaptation strategy;
- Equip the regions with a methodology for optimising the mainstreaming of adaptation in other regional policy areas as well as the multi-level governance of adaptation policies;
- Establish guidelines for the governance of adaptation in urban areas; and
- Supply guidance for the integration of the two main volunteer initiatives linked with the Covenant of Mayors.

Expected results

- A report on climate analysis and vulnerability assessment results in Sardinia and other selected areas;
- Guidelines and standardised procedures for climate analysis and vulnerability assessment;
- A network of regions and municipalities sharing adaptation practices from around the EU;
- Policy guidance for setting adaptation targets and planning at regional and sub-regional levels;
- Matrices of general and specific targets of the Adaptation Strategies developed for Sardinia and north of Milan; two municipalities in Sardinia, three municipalities in Puglia and the cities of Venice and Cagliari;

LIFE15 CCA/IT/000061
LIFE MASTER ADAPT



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Filippo ARRAS

Duration of project:

36 months (01/10/2016 – 30/09/2019)

Total budget in euro:

1,592,674.00

EC contribution in euro:

954,702.00

- An effective and reproducible method for mainstreaming adaptation and for multi-level governance in the definition of regional adaptation strategies;
- Guidelines for implementing mainstreaming in groups of towns and cities;
- Implementation of the guidelines in selected municipalities in Lombardy, Sardinia and Venice;
- At least 15 mayors signing up to the Covenant of Mayors for Climate & Energy initiatives;
- Test cases of vertical regional mainstreaming for one sector in Lombardy and one in Sardinia;
- Enhancement of at least 40 climate change adaptation measures in participating territories;
- Cooperation agreements with the Austrian Environment Agency, Puglia Region, Trento Province and selected municipalities in Sardinia and Lombardy;
- Training and involvement of at least 250 selected decision-makers; and
- Organisation of at least 30 regional and local meetings, one national event, and six workshops and panels at EU level. Participation in one international event, five EU conferences and five national conferences.

Adaptation of FORest management to CLIMATE variability: an ecological approach - AForClimate

Project background

Climate change is known to influence forest tree growth response and the CO₂ cycle. Research has shown that the climate signal, species composition and growth trends have changed in different types of forest ecosystems over the last century. Under current and demonstrated changes in climate variability at geographic, regional and local levels, the trends for tree growth change over time and from site to site.

Yield tables, site quality indices, age class, rate of growth, and spatial distribution are some of the most used tools and parameters for forest planning and management. However, these methods do not take account of climate variation over time even though climate is the main driver of forest and tree growth. For example, changing climate conditions may impact on temperature and precipitation thresholds critical to forest tree growth. Forest biomass, resilience and CO₂ storage may be adversely affected unless forest management adjusts to these trends.

Beech (*Fagus sylvatica* L.) is an economically and ecologically important tree species. There are some 15 million ha of beech forests in Europe, primarily in mountainous areas of central and southern Europe. The beech forests with the highest biodiversity in the EU are located in the Apennines mountain range in central Italy, including examples of two habitats listed as priority for conservation in the annexes of the EU Habitats Directive: Apennine beech forests with *Taxus* and *Ilex*; and Apennine beech forests with *Abies alba* and beech forests with *Abies nebrodensis*. Currently, Italian beech forests are mainly stored coppices, representing 89% of the whole coppice area in Italy, as well as managed coppices in transition to high forest, occupying around 150 000 ha.

Project objectives

The general objective of the LIFE AFORCLIMATE project is to maintain and improve the efficiency of the beech forest ecosystem in the Apennines, through effective forest management that is adapted to climate change. To achieve this objective, the project will define a method for measuring likely impacts of climatic factors, so as to manage beech forests in ways that promote forest regeneration and seed production while ensuring resilience. The project aims to achieve biomass increases (and therefore CO₂ sequestration) of 5-7% to 15-20% compared to the reference value deriving from the appli-

LIFE15 CCA/IT/000089
LIFE AFORCLIMATE



Beneficiary:

Name of beneficiary

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Duration of project:

70 months (01/09/2016 - 30/06/2022)

Total budget in euro:

2,386,250.00

EC contribution in euro:

1,431,063.00

cation of the traditional approach. This will also increase overall ecosystem functionality.

Expected results

- Forest management in the project areas through actions consistent with adaptation to climate change;
- A detailed forecast model for forestry management that takes climate change variability into account;
- A monitoring scheme to assess, by the end of the project, the impacts of the approach to forest management in terms of regeneration capacity, production capacity and biodiversity. This scheme will take into consideration the entire ecosystem of beech forest and all components essential for appropriate forest management; and
- An extensive information campaign in line with the EU Strategy on adaptation to climate change that aims to address gaps in knowledge.

Energy consumption and CO₂ and NO_x emissions Minimised in an Intermittent Ceramic Kiln

Project background

Ceramics manufacturing is one of the most energy-intensive industries. The sector is a significant contributor to greenhouse gas emissions, producing an estimated 1.84 million tonnes of CO₂ globally, including 400 000 tonnes of CO₂ in the EU.

Project objectives

The project aims to demonstrate an intermittent kiln for production of ceramic table ware and sanitary ware based on computerised management of air and gas flow, the complete re-use of warm air from cooling and the use of advanced materials for thermal insulation. The new technology is designed to significantly reduce emissions of carbon dioxide, nitrogen oxides, hydrogen fluoride, sulphur oxides and particulate matter, as well as cutting consumption of energy and raw materials.

Specific objectives are to:

- Consume 1 300-1 400 kcal/kg of firing product (45% less energy than intermittent kilns currently in commercial use);
- Calculate the environmental, economic and social impact of the new technology; and
- Develop a business plan for the commercialisation of the technology.

The project has the potential to strongly contribute to the specific objectives of the priority area of climate mitigation, to EU policy priorities and to the upgrade of Best Available Techniques Reference (BREF) documents for the ceramic industry. It has been designed to respond to Commission decision 2014/746/EU, which identifies the ceramics sector as at risk of significant carbon leakage. The LIFE ECONOMICK project fully contributes to the European Union's climate and energy targets related to reducing emissions from energy-intensive industries.

Expected results

- 45% lower energy consumption than state-of-the-art intermittent kilns;
- 45% lower CO₂ emissions with respect to state-of-the-art (38 tonnes of CO₂ saved);
- 50-55% lower nitrogen oxide emissions with respect to current practices;
- Natural gas savings of 34 449 Nm³;
- Production of market-quality tableware (30 000 pieces) and sanitary ware (4 220 pieces);

LIFE15 CCM/IT/000104
LIFE ECONOMICK



Beneficiary:

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Duration of project:

33 months (01/07/2016 – 31/03/2019)

Total budget in euro:

1,516,375.00

EC contribution in euro:

867,615.00

- Production of one life-cycle impact assessment, one life-cycle cost assessment and one social life-cycle assessment; and
- Development of a sound business plan at the project's completion, with the expectation of having sold at least two customised kilns within 12 months of the close of the project and 47 kilns within five years. This commercial development will prove the replicability of the technology.

A novel, sustainable and cost-efficient distributed street lighting dimming system

Project background

Most of Europe's energy is consumed by cities and urban areas, which are also the origin of most greenhouse gas (GHG) emissions. Street lighting is a key public service provided by public authorities at the local and municipal level, and it is essential for road and personal safety and overall quality of life in urban communities. As of 2014, there were more than 90 million traditional streetlights in Europe: in most European municipalities, public lighting accounts for 50% of electricity consumption and 60% of energy costs. New solutions such as solid state lighting (SSL) appear very promising because they can lead to savings of up to 50% of electricity and significantly reduce maintenance costs. Moreover, the deployment of energy saving SSL and 'smart' adaptive lighting technologies are important elements for sustainable and 'smart' cities, in line with the EU Green Paper "Lighting the Future: Accelerating the deployment of innovative lighting technologies" [COM/2011/0889 final], which aims for the rapid and widespread deployment of novel cost-efficient and sustainable lighting solutions. At the same time, state-of-the-art adaptive lighting systems are relatively costly, and are only able to monitor areas of some 600 m² (e.g. gardens and small parks).

Project objectives

The project will demonstrate a cost-efficient new street lighting dimming system that is designed to reduce energy consumption by 30% in comparison with state-of-the-art control systems. A distributed network of some 1 000 high-tech, low-cost sensors will be installed on a pilot basis in EUR, a residential and business district of Rome. As well as reducing street lighting energy consumption and CO₂ emissions, the distributed sensor network will enable the monitoring of noise, traffic and air pollution across the participating urban area. It will thus expand data acquisition, promoting more focused and transferable urban climate-related actions and enhancing road safety through the detection of anomalous conditions based on meteorological or traffic statistical data. In so doing, it will further facilitate the implementation of the strictest standards of road safety, climate mitigation and adaptation policies and urban initiatives.

The project will carry out a life-cycle assessment, life-cycle cost analysis and preliminary market and socio-economic analyses of the new system, which is expected to reduce street lighting maintenance, contribute to a reduction in national expenditure on public lighting and contribute to

LIFE15 CCM/IT/000110
LIFE-DIADEME



Beneficiary:

Name of beneficiary

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Name of contact person

Paolo DI LECCE

Duration of project:

44 months (01/10/2016 – 25/05/2020)

Total budget in euro:

1,428,742.00

EC contribution in euro:

812,400.00

the reduction of waste electrical and electronic equipment (WEEE) in compliance with Directive 2012/19/EU.

Expected results

- Reduced street lighting energy consumption and CO₂ emissions by at least 30% compared to the state-of-the-art pre-programmed solutions;
- The adoption of 2 million LIFE-DIADEME lighting units in the three years following the end of the project, leading to a saving of at least 159 GWh/yr and a reduction of 55 850 tonnes of CO₂/yr;
- Reduced street lighting maintenance costs by 10%, based on a predicted life-cycle on 20 years for the new system;
- Savings of at least 93 tonnes/yr of WEEE for three years following the end of the project, and 4 180 tonnes/yr assuming EU-wide adoption;
- 30% reduction in national expenditure on public lighting; and
- Support for green public procurement practices.

The project outcomes have the potential to create a significant socio-economic and environmental impact at EU and global level. The project will be seamlessly integrated with green public procurement strategies and future smart cities scenarios.

Looking for an eco-sustainable sheep supply chain: environmental benefits and implications

Project background

Improving the environmental performance of sheep farming could help combat climate change by reducing greenhouse gas (GHG) emissions and maximising ecosystem services. It could also promote the socio-economic sustainability of local supply chains, adding value by connecting products with the environment and land use and enabling business diversification into areas such as eco-tourism.

Project objectives

SheepToShip LIFE seeks to contribute in a practical way to EU climate change objectives by helping to reduce emissions of GHG from the sheep farming sector and dairy supply chain in Sardinia. The main objective of the project is to reduce by 20% in 10 years GHG emissions from the Sardinian livestock sector and sheep industry, with an annual rate of reduction of around 3 500 tonnes of CO₂ equivalent.

The immediate objectives of the project are to:

- Encourage environmental improvements of production systems in the sheep sector and demonstrate the environmental, economic and social benefits deriving from eco-innovation in the dairy supply chain and sheep farming sector;
- Promote the implementation of environmental policies and rural development, guided by the life-cycle approach, and aimed at enhancing the environmental quality of local sheep's milk and cheese supply chains; and
- Increase the level of knowledge and awareness of stakeholders and the general public regarding the environmental sustainability of products made from sheep's milk and their contribution to the mitigation of climate change.

Expected results

- Development of a common methodology for analysing the life-cycle of sheep's milk supply chains in order to determine their environmental impacts;
- Identification, for each type of production system, of the optimal management strategies needed to reduce environmental impacts;
- A manual of good practices for sheep farming;
- A manual of good practices for dairy businesses using sheep's milk;
- A plan for improving the environmental performance of 10 sheep farms and three sheep dairy businesses

LIFE15 CCM/IT/000123

SheepToShip LIFE



Beneficiary:

Name of beneficiary

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Pierpaolo DUCE

Duration of project:

48 months (01/07/2016 – 30/06/2020)

Total budget in euro:

2,610,043.00

EC contribution in euro:

1,533,561.00

through the introduction of low-input techniques compatible with maintaining product quality standards;

- A 20% reduction of GHG emissions of the farms and businesses selected;
- Engagement with stakeholders to drive eco-innovation and environmental improvement of sheep farming techniques and industrial cheesemaking processes;
- Implementation of an Environmental Action Plan for the sheep sector;
- Interactions among research centres, local authorities and the private sector in the implementation and development of strategies for climate change mitigation in agriculture and the food industry;
- Engagement with target groups and stakeholders through media including a project website, social media, videos and press releases;
- Promotion of the project at eight international events; and
- Collaboration agreements with national and international organisations.

Climate change mitigation through a sustainable supply chain for the olive oil sector

Project background

The olive tree is one of the most widespread agricultural tree species in the world. Some 70% of the world's olive harvest comes from the European Union, where almost 5 million ha of land is devoted to cultivating olives. Agriculture is particularly vulnerable to the effects of extreme weather events and faces the combined challenge of mitigation and adaptation to the new climate scenario. However, olive trees are able to survive and produce under different and difficult agro-ecological conditions. They represent, therefore, an unusual case of a crop which could be used to emphasize carbon sequestration and mitigate the effects associated with climate change. This is in line with one of the main objectives of the Common Agricultural Policy 2014-2020 which seeks to fully exploit the potential of agriculture to mitigate climate change and adapt the whole sector to its consequences, thereby increasing its positive contribution to carbon sequestration. Nonetheless, little is known about the CO₂ fixation capacity of olive groves and about their mitigation effect on greenhouse gases.

Project objectives

The OLIVE4CLIMATE - LIFE project proposes a holistic vision of the processes and products associated with the production of extra virgin olive oil, based on a quantitative assessment of the related carbon footprint. The proposed innovative cultivation approach will be tested in three Mediterranean countries with heterogeneous environmental conditions and with significant olive production: Israel, Italy and Greece. By means of a series of demonstration actions, the project will test strategies for the sustainable production of olive oil and promote the uptake of secondary products derived from integrated cultivation systems. A life-cycle assessment (LCA) will be conducted, allowing the quantification of the carbon sequestration potential in the olive groves and providing the necessary information to define a technical protocol, which can be replicable in different production and environmental contexts. A handbook for the sustainable management of olive groves, covering aspects such as the olive oil value chain, soil and waste management, and carbon credits, will also be drafted.

Expected results

- Demonstration of a series of replicable solutions and protocols for sustainable management of the olive oil value chain in different environmental and climatic conditions in the Mediterranean area;

LIFE15 CCM/IT/000141
OLIVE4CLIMATE - LIFE



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Primo PROIETTI

Duration of project:

36 months (01/07/2016 – 30/06/2019)

Total budget in euro:

2,397,748.00

EC contribution in euro:

1,259,499.00

- The creation of numerical models to define the carbon sequestration capacity of olive trees and optimise planting;
- The drafting of a greenhouse gas emission monitoring plan for the olive oil value chain, with the involvement of producers;
- Definition of a labelling system and quality assurance schemes based on the LCA and the carbon footprint evaluation; and
- Support for the inclusion of olive groves in the voluntary market of carbon credit certification, by reducing emissions and enhancing carbon storage capacity.

Montado & Climate; A Need to Adapt

Project background

Mediterranean ecosystems have been identified as being among the most likely to be impacted by climate change. A further clear trend towards drier and hotter conditions is predicted in the Mediterranean area. Here, substantial warming (about 1.5°C in winter and almost 2°C in summer) and a significant decrease in precipitation (5-10%) is likely to occur in the period 2021–2050, compared to the reference period of 1961–1990, although at local level changes might be even more dramatic. These changes are expected to increase the risk of erosion and may increase desertification. One Mediterranean ecosystem, known as *Montado* in Portugal and *Dehesa* in Spain, that is noted for its traditional agroforestry management practices, is becoming increasingly uneconomical, causing rural depopulation.

Project objectives

LIFE-Montado-adapt aims to:

- Introduce innovative adaptation technologies in Portuguese and Spanish *Montado* and *Dehesa* (M/D) landscapes and communities, through demonstration of sustainable and profitable integrated land use (ILU) systems, which help restore the landscape's multi-functional character and its contributions to socioeconomic development, environmental services, biodiversity conservation and carbon sequestration; and
- Maximise the transformational impact of these adaptation technologies and ecosystem services, and secure their replication and upscaling, through a farmer-to-farmer ILU adoption plan, developed commercialisation channels, sustainability and carbon certification, and a marketing plan for regional produce.

The project is aligned with the EU Adaptation Strategy objective of improving the knowledge base for better informed decision-making on adaptation, by ensuring that the lessons learned from the project's land-use demonstrations become available for replication purposes.

Expected results

- Establishment of an ILU system on 1 250 hectares of M/D land with combined methods e.g. inter-planting, diseased tree removal, reforestation, forage crop establishment and livestock fencing;
- Improved biodiversity functions, including a 10% improved presence of indicator species for birds and butterflies and a restored plant diversity and structural complexity matching habitat requirements for the Iberian lynx (*Lynx pardinus*);

LIFE15 CCA/PT/000043
LIFE-Montado-adapt



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Duration of project:

60 months (01/09/2016 – 01/09/2021)

Total budget in euro:

3,439,746.00

EC contribution in euro:

2,051,538.00

- Improved socioeconomic benefits of M/D land, including at least eight viable income sources for domestic and international markets, a €150 per hectare (or 300%) increase in farmers' incomes, an increase in employment of one full-time equivalent per 10 hectares, and an overall increase in internal rate of return to at least 6%;
- A carbon sequestration increase of 1 tonne CO₂ equivalent per hectare subject to carbon-saving activities;
- Widespread adoption and replication of the adaptation technologies, and a self-supporting commercial enterprise responsible for collective purchases, sales, marketing and farmer-to-farmer promotion;
- At least 10 cooperation agreements with commercial partners for products and eco-services, which will be promoted at two trade fairs;
- Eleven project partners trained as promoters, each successfully transferring their knowledge to 11 other farmers resulting in certified ILU designs for their land; and
- Creation of synergies with national governments, forest authorities, agricultural and environmental authorities, the WWF, and other public and private entities.

Adapting to the impacts of Climate Change in the Vipava Valley

Project background

Agriculture is an important element of the regional economy of the Vipava valley. However, agricultural production has been substantially affected by climate change in the past decades, with higher temperatures, decreased precipitation, increased solar radiation and increased drought intensity all apparent. In particular, there has been an increase in drought intensity since 1990, which is likely to increase even further in the coming years, entailing substantial costs and damage. The effects of climate change are unlikely to be avoided, so it is important to implement appropriate measures of mitigation and adaptation to avoid a substantial negative effect on agricultural production and the economy of the region.

Project objectives

The principal objective of the LIFE ViVaCCAdapt project is to develop a comprehensive strategy for climate change adaptation, which takes into account the specificities of the Vipava valley region, such as the EU Strategy for adaptation to climate change and the Water Framework Directive.

The specific objectives of the project are to:

- Define a set of strategic actions to adapt to climate change using a holistic approach that involves collaboration with experts in a number of different sectors, including agriculture, forestry, hydrology, tourism and urban planning. The project will take into consideration expert assessments of potential environmental problems triggered by proposed agricultural measures;
- Establish a pilot decision-support system (DSS) for irrigation, in order to rationalise water consumption in accordance with the requirements of the Water Framework Directive; and
- Design a demonstration centre to plant green wind breaks, in order to show their impact on the maintenance of soil quality and biodiversity and to increase their use.

Expected results

- A comprehensive strategy for adapting to climate change impacts in the Vipava valley, through defining climate change scenarios, best agronomic practices to better cope against climate change and climate change governance models;

LIFE15 CCA/SI/000070
LIFE ViVaCCAdapt



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David BRATOŽ

Duration of project:

60 months (01/07/2016 – 30/06/2021)

Total budget in euro:

869,028.00

EC contribution in euro:

520,516.00

- Creation of a pilot DSS for irrigation for the Vipava valley for all kind of crops (e.g. grapes, fruits and vegetables) on soils with different water retention capacity;
- Reduction of water consumption for irrigation, through use of the DSS, by 46 875 m³/yr during the project and 1 250 000 m³/yr within three to five years of the end of the project;
- Reduction of CO₂ emissions by 4 tonnes/yr during the project and 106 tonnes/yr within three to five years of the end of the project;
- Reduction of energy consumption by 7 813 kWh/yr during the project and 68 750 kWh/yr within three to five years of the end of the project;
- Creation of a demonstration centre with approximately 200 m of different green wind breaks in order to prove that formation of wind protection zones in areas with strong winds is essential;
- Involvement of up to 30 farmers in the project, increasing their awareness of their water and carbon footprint; and
- The project beneficiary and partners joining at least five new thematic networks.

Demonstration of an innovative solution to reduce GHG emissions in vineyards while improving the soil in arid areas

Project background

Like most economic sectors, agriculture produces greenhouse gases, accounting for around 10% of total CO₂ emissions in the EU (4.7 billion tonnes in 2012). In Europe, around 57 million hectares are cultivated for agriculture, of which 5.6% (3 million ha) is devoted to vineyards. The main wastes and by-products from viticulture and winemaking activities are pruned vine shoots, grape stalks, grape marc, wine lees and winery wastewater. Pruning vine shoots alone yields 800-1 500 kg/ha.

One third of Europe's vineyards are in Spain and vineyard waste management contributes to more than 5.5% of the entire CO₂ emission share within Spain's agriculture. Thus, improving the traditional management of vineyard pruning waste, which currently involves burning shoots, could significantly enhance sustainability and reduce climate impacts from viticulture and winemaking activities. The project is based in Murcia, which has 32 400 ha of vineyards, 1.1% of Europe's total vineyards and 11% of the total cultivated area in the region.

Project objectives

The main objective of LIFE SARMIENTO project is to contribute to the mitigation of, and adaptation to, climate change by significantly reducing CO₂ emissions from vineyards, and improving climate governance with new land-use practices that improve the profitability of vineyards, halt soil degradation and enhance soil resilience and biodiversity in arid climatic conditions.

The project will apply a circular economy principle to vineyard pruning waste, converting it into a substrate that can be applied as enriched compost in vineyards, seedbeds and urban allotments, as opposed to burning it. This will also help to avoid soil degradation and have positive socio-economic and biodiversity impacts. The process will be developed and tested on 750 ha of vineyards in Murcia. The project will also develop tools, training modules and guidelines to effectively transfer its solution to other wine production areas in Europe. Dissemination activities will have both a national and international dimension.

Expected results

- CO₂ emissions reduced by 85% (2.4 tonnes/ha/yr) in comparison with current management practices;
- Improved soil conditions and avoidance of soil degradation, increasing the soil's capacity to store carbon

LIFE15 CCM/ES/000032
LIFE SARMIENTO



Beneficiary:

Name of beneficiary

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Cristóbal SÁNCHEZ LÓPEZ

Duration of project:

52 months (01/09/2016 – 31/12/2020)

Total budget in euro:

835,020.00

EC contribution in euro:

495,365.00

and providing for better resilience that supports climate change adaptation;

- Positive impacts on biodiversity through a bottom-up approach that improves soil biodiversity;
- Establishment of a process to convert more than 250 kg/ha of vine shoots from residues to by-products with new uses, achieved by engaging with multiple stakeholders to promote the circular economy concept at the local level;
- 750 ha of vineyards managed according to this method;
- 1 850 tonnes/yr of CO₂ emissions saved;
- 200 tonnes/yr of waste turned into a by-product, providing 650 m³/yr of enriched compost to be used as fertiliser and bio-pesticide in the vineyards and 150 m³/yr of compost and substrate for urban allotments and for seedbeds;
- Development of tools to support the sustainability of this solution and its self-management by stakeholders; and
- Transfer of the project's methods to other wine production areas in Spain and beyond (target is at least 1 500 ha under this form of management within three years of the end of the project).

Sharing Awareness and Governance of Adaptation to Climate Change in Spain

Project background

Spain is highly vulnerable to climate change. It was one of the first countries in Europe to address the challenge of climate change adaptation, approving a National Climate Change Adaptation Plan (PNACC) in 2006. PNACC is closely aligned with the EU Strategy on adaptation to climate change that is promoting action by Member States, better informed decision-making and adaptation in key vulnerable sectors. Furthermore, the Spanish Office for Climate Change and Fundación Biodiversidad, working in partnership with the units responsible for adaptation to climate change in the autonomous regions of Spain, have established the AdapteCCa platform to support knowledge sharing, dissemination of information and networking among all individuals and organisations active in the field of climate change adaptation, at all levels. In July 2015, Portugal adopted its national strategy on adaptation to climate change, which provides for the establishment of a system for Iberian cooperation, particularly in terms of the resources and systems shared by the two countries.

Project objectives

The main objective of the project is to strengthen climate change adaptation governance in Spain and Portugal, so as to increase resilience to the impacts of climate change. This will be achieved through the following specific actions:

- Enhancing the capacity and functionality of the AdapteCCa platform, by improving the quality and quantity of the information it contains and encouraging its greater use;
- Strengthening technical capacities for adaptation to climate change and raising awareness by organising training courses and dissemination activities on climate change adaptation outcomes. By implementing these actions, the relevance of the PNACC and the need for adaptation action will be widely disseminated. Special attention will be paid to training the trainers;
- Enhancing coordination and cooperation among stakeholders through the reinforcement of links between the private sector and local, regional and national administrations in Spain, as well as with neighbouring Portugal. The project also aims to reinforce synergies between the AdapteCCa platform and the EU Climate-ADAPT portal;
- Assessing the influence of the PNACC in boosting Spain's adaptive capacities and climate change resilience; and

LIFE15 GIC/ES/000033
LIFE SHARA



Beneficiary:

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Sonia CASTAÑEDA RIAL

Duration of project:

54 months (01/09/2016 – 28/02/2021)

Total budget in euro:

1,569,139.00

EC contribution in euro:

888,917.00

- Contributing to the implementation of the EU adaptation strategy by supporting the development of vulnerability assessments and adaptation plans.

Expected results

- A 10% annual increase in new registered users of the AdapteCCa platform;
- 10% more content on the platform each year, as well as qualitative improvements such as new working groups;
- Six capacity-building courses attended by more than 200 local government technicians, academics and professionals;
- Four sectoral workshops involving more than 200 experts;
- An Iberian conference on adaptation to increase awareness of climate change impacts and adaptation measures;
- Greater information exchange between Spain and Portugal on shared vulnerabilities and identification of common priorities and actions;
- Strengthened synergies between AdapteCCa and Climate-ADAPT; and
- An assessment of Spain's PNACC that feeds into the first assessment of the impact of climate change adaptation in Spain.

European Network for Sustainable Mobility at University

Project background

Sustainable urban mobility can be defined as the implementation of a system in which private vehicles, public transport, roads and parking spaces form an integrated whole. The EU strategy on the urban environment proposes to “change radically the balance among different transport systems, favouring public over private and reducing the impact of car traffic in our cities”. This requires effective tools to encourage greater use of public transport, vehicle-sharing, intermodal transport, cycling and walking.

University campuses are a significant pole of attraction within cities, acting as the start-, end- and transit point for a huge number of journeys. The implementation of sustainable urban mobility practices in the many thousands of campuses across the EU can play a significant role in mitigating climate change.

Project objectives

The overall objective of the U-MOB project is to facilitate the exchange and transfer of best practices in sustainable mobility on university campuses across the EU.

Specific project objectives are to:

- Inform, communicate and increase awareness of the potential positive impact of sustainable mobility management on university campuses in terms of CO₂ emissions reduction;
- Help university campuses create sustainable mobility action plans and achieve CO₂ reduction targets defined in those plans;
- Consolidate, communicate and disseminate among EU universities good practices in sustainable mobility on campus;
- Encourage universities to appoint sustainable mobility managers;
- Develop and launch a training course and support materials on University Sustainable Mobility Management;
- Mainstream sustainable mobility policies among local authorities and local transport companies; and
- Create and consolidate a European University Network for Sustainable Mobility capable of multiplying, replicating and transferring best practices long after the conclusion of the project.

Expected results

- 10 000 campus CO₂ emissions surveys completed;
- 10 universities to sign action plans identifying mobil-

LIFE15 GIC/ES/000056
U-MOB LIFE



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Ángel GIMÉNEZ

Duration of project:
60 months (01/07/2016 – 30/06/2021)

Total budget in euro:
1,329,427.00

EC contribution in euro:
797,656.00

ity best practices and setting CO₂ emissions reduction targets;

- A 10% reduction in CO₂ emissions on 30 participating campuses by the end of the project;
- Creation of a training course for university sustainable mobility managers, completed by at least 15 people;
- 50 best practices in sustainable mobility on campus identified and compiled into a report, factsheets and graphics;
- Mainstreaming of sustainable mobility concepts and actions through an information campaigning targeting the university community, local authorities and transport providers. At least 20 000 visits to the project website;
- Creation of a Network of European Universities for Sustainable Mobility, initially involving at least 10 universities from five countries and expanding to cover 30 campuses in 10 EU Member States by the end of the project; and
- Each campus in the network requiring a sustainable mobility manager working half-time, meaning the creation of 15 full-time equivalent jobs.

LIFE SUSTAINHUTS: Sustainable mountain huts in Europe

Project background

Measures to increase the energy resilience of mountaineering tourism infrastructure are vital for the development of mountainous regions. Mountain huts, however, are usually isolated from heating and electricity grids. They depend on fossil-fuel powered generators and boilers. Equipment and fuel is often supplied by helicopter, a costly means of transport and another source of CO₂ emissions and pollution. Made of stone, the huts are moreover often highly energy inefficient. The development of energy-saving measures that significantly improve the sustainability and resilience of the off-grid mountain sector will contribute not only to the EU climate adaptation strategy but also to climate change mitigation, nature conservation and biodiversity objectives.

Project objectives

LIFE SUSTAINHUTS aims to reduce CO₂ emissions emanating from buildings in isolated environments, such as mountain huts. The project also aims to prevent air pollution, preserve mountainous forests, promote sustainable tourism and introduce environmentally friendly methods for the production, distribution and use of energy.

Specific project objectives are to:

- Create a resource assessment campaign adapted to extreme mountain conditions, measuring and evaluating the demonstration sites at micro level;
- Design and simulate environmentally friendly off-grid renewable installations adapted to different mountain environments;
- Design a complete off-grid hydrogen cycle, including an adapted electrolyser balance-of-plant that is able to withstand critical water conditions and a hybrid storage system;
- Integration of innovative and alternative technologies in mountain huts, such as hybrid storage systems and fuel cells to reduce fossil fuel dependency;
- Install new-generation insulation materials that are more environmentally friendly, have a low carbon cycle, increase the insulation capacity of the building by 10% and are cost-competitive;
- Demonstrate nine nearly zero-emission mountain huts in four different European countries (involving different operational conditions of altitude and temperature): one demo-hut at low altitude (<1 000 m), four at medium altitude (1 000-2 000 m), three at high altitude (2 000-3 000 m) and one at extremely high altitude (>3 000m);

LIFE15 CCA/ES/000058
LIFE SUSTAINHUTS



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Name of contact person
Pedro CASERO

Duration of project:
48 months (01/07/2016 - 30/06/2020)

Total budget in euro:
1,976,885.00

EC contribution in euro:
1,116,543.00

- Develop a life-cycle assessment of the huts to determine the environmental impacts of the new technologies compared with those currently used; and
- Develop guidelines for mountain huts and off-grid areas to promote the replication of results.

Expected results

- Transformation of nine mountain huts in four different European countries into sustainable, nearly zero-emission constructions powered by renewables: seven photovoltaic installations (35kW in total), three micro wind turbines (1.5 kW each), four micro hydro power plants (40 kW in total) and one hydrogen demonstration pilot system (3.3 kW off-grid electrolyser, high-pressure storage and 1.2 kW fuel cell);
- Eight energy efficiency actions carried out, including testing of the thermal energy savings provided by three new insulation materials in the mountain huts;
- Reduced CO₂ emissions by 21 tonnes/yr per hut;
- Reduced nitrous oxide emissions by 500 kg/yr per hut;
- Reduced energy use by 20% per hut;
- Reduced by three the annual number of helicopter flights to the participating huts, saving 350 kg/yr of CO₂;
- Reduced kerosene use by 1 tonne/yr per hut; and
- A range of dissemination activities.

Innovative management strategies for climate change adaptation of mixed sub-humid Mediterranean forests

Project background

Mixed sub-humid Mediterranean forests are ecosystems with great relevance at European level and worldwide. The foreseeable effects of climate change are expected to have a strong impact on the value and functions of such forests. These effects are aggravated by the prevalence of species poorly adapted to severe droughts and the abandonment of traditional forestry practices. These forest habitats are also found in highly populated and urbanised areas, where there is a lack of public awareness and a lack of integration of forest management and climate change adaptation into local and regional policies.

Project objectives

The main aim of the project is to contribute to the adaptation to climate change of European mixed sub-humid Mediterranean forests by increasing their resilience, ensuring their conservation and enhancing their productive, environmental and social functions. In particular, the project aims to:

- Demonstrate innovative forest management techniques designed to increase the resilience and intrinsic adaptation capacity of different types of sub-humid Mediterranean forests;
- Develop new tools for integrating the adaptation to climate change in the policy and legal framework related to forest management, such as enhanced local policy actions where this type of forest is located in areas highly dependent on its social and environmental functions;
- Develop new tools to strengthen the economics of forest management, linked to the products that sub-humid Mediterranean forests can provide, in order to prevent the abandonment of forest activities; and
- Transfer implemented techniques and developed tools to regional and European stakeholders.

Expected results

- Reduced competition among trees, while increasing their vitality and water use efficiency;
- Increased structural diversity and complexity of the forests in the pilot stands;
- Increased forest biodiversity;
- The cataloguing of added-value products from sub-humid Mediterranean forests and subsequent dissemination among opinion leaders and business sectors;
- A pilot system for the logistics and commercialisation of products from these stands accepted and validated by local forest owners;

LIFE15 CCA/ES/000060

LIFE MixForChange



Beneficiary:

Name of beneficiary

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Míriam PIQUÉ

Duration of project:

60 months (01/10/2016 - 30/09/2021)

Total budget in euro:

1,308,001.00

EC contribution in euro:

781,229.00

- Improvement of the forest legal framework;
- Transferability achieved through targeted involvement of stakeholders;
- Inclusion of the innovative silvicultural models in the guidelines for sustainable forest management in Catalonia (ORGEST);
- Active participation of at least five municipalities in the development of the project actions; and
- At least 10 municipalities attending the communication actions.

Valorisation of alcoholic wastes to produce H₂ to be used in the sustainable generation of electricity

Project background

New technologies play an essential role in helping to mitigate climate change by reducing greenhouse gas (GHG) emissions. Impure alcohol fractions with low commercial value are a waste product of bioethanol manufacturing. A new technology has been designed to re-use these waste fractions to produce gaseous hydrogen-rich streams for the production of electricity by means of high-temperature fuel cells.

Project objectives

ECOELCTRICITY LIFE aims to design and construct a pilot plant to produce electricity using industrial purges containing impure ethanolic fractions from the distillation of bioethanol that have a low commercial value, due to their composition. Through its actions, the project aims to optimise a comprehensive catalytic reforming process for these ethanolic purges to produce gaseous hydrogen-rich streams for the production of electricity by means of high-temperature fuel cells (solid oxide fuel cells - SOFCs).

Expected results

- Exploitation of impure alcohol fractions with low commercial value which are obtained during the purging operations carried out in the distilling and bioethanol production industries;
- A decrease in the production of carbon dioxide. Specifically, the reforming process would reduce CO₂ emissions from the 6.56 kg CO₂/l of impure alcohol that occurs when it is re-distilled to 1.83 kg CO₂/l of impure alcohol when it is reformed;
- Production of a reformed gas stream rich in hydrogen (H₂) to generate electricity in a 3 kW SOFC. The reforming capacity of the pilot plant will be 1.2 l/h of impure alcohol, to produce at least 2 022 kg/h of a gas stream;
- Development of a self-sufficient process that re-uses the by-products (heat and water) from the reforming reactor and SOFCs;
- Minimisation of the environmental impact of the overall process. The fact that the ethanolic purges come from renewable sources (biomass), will have a significant benefit in terms of reducing GHG emissions; and
- Creation of value for an industrial by-product (ethanolic purges) with low commercial interest, the production of which does not require land use change and is therefore beneficial to the environment.

LIFE15 CCM/ES/000080
ECOELCTRICITY LIFE



Beneficiary:

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Name of contact person

Lola CORVINOS

Duration of project:

39 months (03/10/2016 – 31/12/2019)

Total budget in euro:

1,572,043.00

EC contribution in euro:

943,193.00

Ceramic Sustainable Urban Drainage System

Project background

Combined sewers are those that, in addition to industrial and domestic wastewater, also collect surface runoff. Widely used throughout Europe, they pose the risk of combined sewer overflow spills and thus affect the ability of Member States to meet the water quality goals of EU legislation. Surface water drainage in dry areas of Spain has traditionally been overlooked and considered a secondary component of combined sewers, rarely relevant except during periods of torrential rainfall. This attitude, along with rain patterns that differ greatly from those in countries where the principles of sustainable drainage have been widely implemented, partially explains the relative lack of sustainable urban drainage systems (SUDS) in Spain.

SUDS involve a range of structural components (ponds, basins, swales and infiltration systems) and non-structural responses (cleaning programmes and amended regulations) designed to ameliorate the otherwise degrading effects of older, conventional drainage systems. One of the EU's priorities is to adapt urban areas to climate change by using green infrastructure, such as SUDS.

Project objectives

The main objective of LIFE CERSUDS is to improve the resilience of cities to climate change and promote the use of green infrastructure in their urban planning as a means of managing surface water flooding. It will demonstrate a low-carbon SUDS consisting of an innovative permeable surface with a very low environmental impact, based on the use of tiles with low commercial value.

Specific objectives are to:

- Reduce flooding caused by torrential rain by increasing the number of permeable surfaces in cities;
- Re-use water stored during the rainy season for use during periods of drought;
- Reduce runoff volumes and peak flows to treatment plants and receiving water bodies;
- Integrate treatment of rainwater into the urban landscape;
- Protect water quality by reducing diffuse pollution;
- Reduce CO₂ emissions linked with the manufacture of pavements for SUDS;
- Provide a SUDS that prevents puddles forming;
- Develop a ceramic SUDS with greater efficiency;
- Demonstrate a SUDS that is suitable for rehabilitating urban areas with light traffic;
- Guarantee transferability through training activities and a business plan aimed at engineers, architects and companies; and

LIFE15 CCA/ES/000091
LIFE CERSUDS



Beneficiary:

Name of beneficiary

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Name of contact person

Javier MIRA

Duration of project:

36 months (01/10/2016 – 30/09/2019)

Total budget in euro:

1,817,972.00

EC contribution in euro:

986,947.00

- Generate precise technical documentation to facilitate replication in other cities.

Expected results

- A reduction in runoff through the use of permeable pavements with volumetric yield close to 90%;
- A replicable demonstrator with storage capacity for rainwater which can be re-used as irrigation water;
- A major reduction in diffuse pollution and improved water quality compared to traditional systems;
- Significant CO₂ emissions reductions through the use of stored ceramic material (408 tonnes) with low commercial value to pave the entire surface of the demonstrator (3 000 m²);
- Educational materials on ceramic drainage to be disseminated via the six Ceramic Chairs of European Architecture (in Spain, Germany and UK);
- Increase in green surfaces irrigated by stored rainwater;
- Reduced slipperiness of the pavement;
- A reduction in the urban heat island effect through evaporation of water collected; and
- A significant increase in turnover and employment in the ceramic industry.

Fostering resilience. Opportunities and challenges of the local economy and society to adapt to climate change

Project background

Though the Province of Barcelona is highly vulnerable to climate change, adaptation measures are not being implemented fast enough. Local municipalities and businesses do not perceive climate change adaptation as an opportunity for the local economy, and there is no clear understanding of the threat failure to adapt poses. This challenge, however, is an opportunity to update the local economy, improve competitiveness and create employment. To this end, there is a need for social organisations that promote adaptation processes.

Project objectives

LIFE CLINOMICS aims to increase the climate change resilience of selected territories and economies within the Province of Barcelona. Proposed actions are in line with the Spanish climate change strategy. The project will also contribute to EU policy on biodiversity, natural catastrophes, agriculture, fisheries, infrastructure, tourism and forests, by engaging all the relevant stakeholders. The main objective is to build the resilience of Mediterranean local authorities through interventions in the counties of Montseny, Alt Penedès and Terres del Ebro within the Province of Barcelona. Specific objectives are to:

- Draft climate change adaptation action plans and strategies, and create the appropriate conditions;
- Give local authorities tools that allow them to affordably launch climate change adaptation processes;
- Develop a climate change adaptation planning model that can be replicated in the Mediterranean area and southern Europe;
- Establish criteria for attracting private investment and launch local investment processes with public-private partnerships;
- Improve the competitiveness of farming, forestry, fishing and tourism businesses through investment in climate change adaptation;
- Demonstrate, through the implementation of six pilot actions, possible adaptation measures, their costs and their benefits;
- Create knowledge, capacity and information about the impacts of climate change in the participating counties and economic sectors;
- Raise awareness among citizens, stakeholders and local authorities on the impacts of climate change and promote their participation in adaptation actions;
- Inform businesses of the long-term financial consequences of not adapting to climate change (e.g. insurance costs); and

LIFE15 CCA/ES/000102
LIFE Clinomics



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Núria PARPAL

Duration of project:
36 months (16/06/2016 – 16/06/2019)

Total budget in euro:
1,392,349.00

EC contribution in euro:
835,278.00

- Extend participation in the Covenant of Mayors scheme among the municipalities of Catalonia.

Expected results

- Climate change impact studies for Montseny, Alt Penedès and Terres del Ebro;
- Economic analysis of the three counties;
- A territorial platform for each county and three sectoral platforms;
- An strategy for each of the three counties informed by the territorial and sectoral platforms;
- Two pilot climate change adaptation measures in each of the three counties;
- 10 training courses (900 attendees) for specific groups of workers (farmers, entrepreneurs, public and private sector employees) and specific sectors of the economy (tourism, agriculture, forestry);
- Capacity building of 75 European stakeholders from the Mediterranean area;
- The effects of climate change and the importance of climate change adaptation communicated to 50% of farmers, business people and public and private sector workers in the three participating counties; and
- 24 events attended to disseminate the work of the project and 12 sector-specific sessions organised.

Restore desertified areas with an innovative tree growing method across the Mediterranean border to increase resilience

Project background

In the Mediterranean region, the impacts of climate change are increasingly felt and becoming more severe. Many semi-arid regions are suffering significant declines in water availability and increases in temperature, which has increased the rate of desertification and the prevalence of forest fires. Dealing with dry and non-productive soils requires an integrated approach through adaptation measures that reduce the vulnerability and strengthen the resilience of Mediterranean ecosystems.

The idea of replacing irrigation by using 'water buckets' to plant trees was tested by an earlier LIFE project, The Green Deserts (LIFE09 ENV/ES/000447). The Green Link project aims to improve the methods trialled by the earlier project in order to lower production and planting costs, thus making the technology viable for intensive reforestation activities. The new project is thus strongly aligned to EU climate change adaptation policy objectives.

Project objectives

The main objective of the project is to demonstrate an innovative growing method which replaces irrigation by using 'water buckets' in desertified areas where the failure rate of restoration can reach 70%. This low-cost Cocoon system, which made out of recycled material, is very water efficient and 100% biodegradable. It has resulted in survival rates of 90% in trials without irrigation.

Specific objectives are to:

- Demonstrate that the Mediterranean area can combat climate change with an effective tool through six trials in three countries suffering from desertification;
- Demonstrate the economic feasibility of an improved and more sustainable technology to plant trees without the use of irrigation;
- Design specific ecological interventions to respond to the demands of climate change adaptation through selection of indigenous and resilient species that will survive in the predicted bio-climates for 2050-2100;
- Integrate novel methodologies to measure biodiversity, soil carbon stock, soil loss and human well-being in the mid-term, while allowing assessment of climate change impact and resilience in the future;
- Map ecosystem services at landscape level to improve adaptation strategies; and
- Replicate the project experience during the project cycle by actively engaging stakeholders.

LIFE15 CCA/ES/000125
LIFE The Green Link



Beneficiary:

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Name of contact person

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Duration of project:

45 months (01/07/2016 – 31/03/2020)

Total budget in euro:

2,891,702.00

EC contribution in euro:

1,725,719.00

Expected results

- Demonstration of a 90% survival rate using the Cocoon technology for all the species selected;
- 30% reduction in tree planting costs without the use of irrigation;
- 20% improvement in soil quality by addressing water scarcity, promoting the growth of green cover, microorganisms and mycorrhiza to enhance the association among roots and soil, and planting along height lines to help prevent erosion and improve water retention in the project area;
- Enhanced ecosystem services, notably by increasing biodiversity by at least 15% and promoting the positive growth of soil carbon stock over time;
- Modelling and mapping of ecosystem services in the trial areas to demonstrate the potential for regional development and provide valuable information for climate change databases; and
- Increased awareness of adaptation strategies on forest management among stakeholders.

Adaptation to extreme rainfall; demonstration of FHVI to prevent damage by urban pluvial flooding

Project background

The Dutch town of Putten regularly encounters climate change-induced problems with pluvial flooding. During heavy rainfall, large parts of the town are flooded. Heavy rainfall also regularly leads to discharge of untreated sewage into Lake Veluwe directly from the town, or from a forced bypass of the wastewater treatment plant. Putten has developed a strategy to reduce damage from pluvial flooding. It has started decoupling and infiltration using state-of-the-art conventional technologies, and is interested in the potential of Fast High Volume Infiltration (FHVI) technology.

FHVI directly injects rainwater into a permeable layer or aquifer, at a rate much higher than conventional injection. Thus, discharge capacity of urban rainwater can be vastly improved. FHVI is known from continuous recirculation in the construction sector, using pumps to bring previously pumped up water back into the ground as quickly as possible. A major innovation in the case of rainwater infiltration is the elimination of the pumps and driving infiltration with the pressure of the water column in the infiltration tube only.

Small-scale testing has confirmed the ability of FHVI to deal with peak precipitation levels of T10 events (occurring once every 10 years). The technique must now be taken to the demonstration stage on a scale representative for use in a large city, to prove its added value and reliability.

Project objectives

LIFE AERFIT aims to demonstrate an innovative adaptation technology to prevent damage from urban pluvial flooding. The main objective is to prove that FHVI is an effective adaptation strategy. In this regard, through the project's actions and applications, the two main objectives are to:

- Demonstrate the effectiveness of FHVI in dealing with extreme rainfall, as well as its wide applicability and favourable costs; and
- Disseminate the results to authorities and professionals across the EU.

Expected results

- A successful demonstration of the FHVI technique as a cost-effective adaptation strategy for climate change (extreme rainfall) and prevention of damage from pluvial flooding in urban areas;

LIFE15 CCA/NL/000052
LIFE AERFIT



Beneficiary:

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Jan AAN 'T GOOR

Duration of project:

60 months (01/07/2016 – 30/06/2021)

Total budget in euro:

4,076,462.00

EC contribution in euro:

2,445,875.00

- A reduction of frequency, duration and level of flooding events in Putten, the target being no water on the street at peak precipitation levels of a T10 event, corresponding to a total quantity of 36 mm per hour;
- Improved quality of effluent at the wastewater treatment plant;
- Reduction of 5 200 m³/yr of discharge of excessive, untreated mixed rain and sewer water;
- Prevention of desiccation, through 46 800 m³/yr of water added to groundwater reserves;
- Resilience to spills (key in this respect is that a spill in a FHVI infiltration well can be 'reversed', i.e. used to pump back spills that penetrated the groundwater);
- Dissemination of project and monitoring results to stakeholders and target audiences;
- Creation of interest of at least 10 other European cities and municipalities to implement the FHVI technique to adapt to climate change; and
- Provision of a blueprint, facilitating rapid replication and transferability to other European cities and municipalities.

Demonstration of thermochemical reforming of natural gas for reducing GHG emissions in Energy Intensive Industries

Project background

A total of 58.9% of EU glass melting capacity is based on either end-fired or cross-fired regenerative glass furnaces. These recover waste heat in flue gas by pre-heating the combustion air with regenerators. This is currently the most economically viable choice for container and flat glass manufacturing in large-scale furnaces.

A further 19.1% of glass is melted using recuperative air-preheated furnaces, which consume large amounts of energy. Some 10% of the market is taken by oxy-fuel furnaces. These replace air combustion with pure oxygen, requiring 10-20% less natural gas and resulting in 80-90% lower nitrous oxide (NOx) emissions. This technology is considered state-of-the-art in current BREF documents. However, the high capital cost of oxygen separation plants, combined with the cost for electric energy required to operate these facilities, has limited the uptake of oxy-fuel combustion for glass melting in Europe.

Project objectives

The project will carry out the first full-scale demonstration of an innovative waste heat recovery concept. The technology, called OPTIMELT, is able to use an endothermic reaction of natural gas with water vapour/CO₂ in the flue gas to recover more heat than previously possible in high-temperature manufacturing processes. It serves as an add-on to existing oxy-fuel combustion furnaces, making this option more environmentally friendly and cost-effective.

The demonstration will be carried out in a furnace producing 105 tonnes/day of domestic glass. Specific objectives are as follows:

- Energy consumption and greenhouse gas emission savings of at least 20% compared to best available technology in the glass industry (oxy-fuel combustion), and lower NOx emissions;
- Demonstration of the economic viability of OPTIMELT technology;
- Dissemination of project results to at least 500 relevant manufacturing locations of high-temperature companies in the EU; and
- Definition of technical requirements for steel and aluminium manufacturing in which OPTIMELT is applicable, so as to facilitate technology transfer to project stakeholders from these industries.

LIFE15 CCM/NL/000121
LIFE OPTIMELT



Beneficiary:

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Duration of project:

39 months (15/07/2016 – 15/10/2019)

Total budget in euro:

8,284,751.00

EC contribution in euro:

2,275,538.00

Expected results

The project is expected to lead to the following at Libbey Leerdam (based on the implementation of oxy-fuel and OPTIMELT technology):

- Less energy used in the process, with no difference in the quality of the end products (59% less energy than recuperative air combustion, 36% less energy than regenerative air combustion; and 20% less energy than standard oxy-fuel combustion);
- A 59% reduction of in CO₂ emissions (8 323 tonnes/yr);
- A 41% reduction in NOx emissions (18.8 tonnes/yr).

The OPTIMELT technology will also:

- Contribute to the shift towards a resource-efficient, low-carbon and climate-resilient economy;
- Improve the development, implementation and enforcement of EU climate policy and legislation by labelling the technology as a BAT; and
- Act as a catalyst for, the integration and mainstreaming of climate objectives into other EU policies and public and private sector practice by providing a basis for replication and transfer.

LIFE "L'Instrument Financier pour l'Environnement" / The financial instrument for the environment

The LIFE programme is the EU's funding instrument for the environment and climate action

Period covered 2014-2020

EU funding available approximately €3.46 billion

Allocation of funds Of the €3.46 billion allocated to LIFE, €2.59 billion are for the Environment sub-programme, and €0.86 billion are for the Climate Action sub-programme. At least €2.8 billion (81% of the total budget) are earmarked for LIFE projects financed through action grants or innovative financial instruments. About €0.7 billion will go to integrated projects. At least 55% of the budgetary resources allocated to projects supported through action grants under the sub-programme for Environment will be used for projects supporting the conservation of nature and biodiversity. A maximum of €0.62 billion will be used directly by DG Environment and DG Climate Action for policy development and operating grants.

Types of projects Action Grants for the Environment and Climate Action sub-programmes are available for the following:

- > "Traditional" projects – these may be best-practice, demonstration, pilot or information, awareness and dissemination projects in any of the following priority areas: LIFE Nature & Biodiversity; LIFE Environment & Resource Efficiency; LIFE Environmental Governance & Information; LIFE Climate Change Mitigation; LIFE Climate Change Adaptation; LIFE Climate Governance and Information.
- > Preparatory projects – these address specific needs for the development and implementation of Union environmental or climate policy and legislation.
- > Integrated projects – these implement on a large territorial scale environmental or climate plans or strategies required by specific Union environmental or climate legislation.
- > Technical assistance projects – these provide financial support to help applicants prepare integrated projects.
- > Capacity building projects – these provide financial support to activities required to build the capacity of Member States, including LIFE national or regional contact points, with a view to enabling Member States to participate more effectively in the LIFE programme.

Further information More information on LIFE is available at <http://ec.europa.eu/life>.

How to apply for LIFE funding The European Commission organises annual calls for proposals. Full details are available at <http://ec.europa.eu/environment/life/funding/life.htm>

Contact

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