



European  
Commission



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# Potential for climate action

Examples of how to mainstream  
climate action and the potential  
for doing so

## ERDF

European Regional  
Development Fund  
2014-2020

## Introduction

The European Regional Development Fund (ERDF) is one of the five European Structural and Investment Funds (ESIF).

This Fact Sheet provides examples of how to mainstream climate action into the ERDF, and outlines the potential for doing so. Similar Fact Sheets are available for the other funds.

The five funds are governed by a Common Provisions Regulation (CPR)<sup>1</sup>. The CPR defines eleven Thematic Objectives (TOs) to help implement the Europe 2020 strategy. Page 5 lists the TOs.

The ERDF covers all eleven TOs and there is potential for climate action in each of them<sup>2</sup>. Therefore, by mainstreaming climate action into the ERDF, all objectives can contribute towards reaching at least 20% climate-related expenditure of the overall EU budget in the period 2014-2020.

The ERDF applies to all regions in Europe. It distinguishes between less developed regions, transition regions and more developed regions. In less developed regions, the GDP/capita is less than 75 % of the average GDP/capita in EU. In the transition regions, the corresponding figure amounts to between 75 % and 90 %, and in more developed regions it is above 90 %.

In terms of the so-called thematic concentration, the ERDF programmes must allocate a certain share of the available funds for four specific TOs. They are: research and innovation (TO1), use of information and communication technologies (TO2), small and medium sized enterprises (TO3), and climate change mitigation (TO4). In developed regions, at least 80 % of the ERDF funds must be concentrated on these four objectives, and at least 20 % must be for the purpose of climate mitigation (TO4). The corresponding minimum allocations in transition regions are 60 % and 15 % respectively. For less developed regions the minimum shares are 50% respectively 12%.

In less developed regions and in transition regions, ERDF funds may be used to support investments in infrastructure which provide basic services to citizens in the areas of information and communication technologies (ICT), transport, energy, and environment. Thus, the ERDF can support e.g. water, wastewater treatment and waste infrastructure. These kinds of investments have climate action potential. They can help reduce greenhouse gas (GHG) emissions from waste and promote water savings and more efficient water use. Support cannot be provided for basic infrastructure in more developed regions.

Supporting innovation, information and communication technologies, the competitiveness of small- and medium-sized enterprises (SMEs), skilled labour force, and adequate institutional capacity will underpin the transition to a low-carbon and climate resilient economy.

Of particular relevance is support for renewable energy production and distribution, energy efficiency and renewable energy use in public infrastructure and buildings and SMEs, smart grids, urban low-carbon strategies, adaptation to climate change, investments in the environment and resource efficiency, sustainable urban mobility and low-carbon transport systems, and interoperable railways.

The climate-related outputs and results of ERDF support may be even greater if they are coordinated with similar aspects of other ESI funds, other EU and national funds, as well as the European Investment Bank.

For example, ERDF and the European Social Fund (ESF) actions can work together to stimulate growth of the low-carbon and climate resilient economy and related job creation.

The use of financial instruments such as JESSICA and JEREMIE<sup>3</sup> are also important as they may leverage additional private-sector funding. JESSICA can provide support for urban developments and energy efficiency improvements. JEREMIE can provide support for venture capital, loan or guarantee funds that target the technological modernisation of productive structures to help reach low-carbon and climate resilient economy targets.

The ERDF also supports sustainable urban development through integrated actions to tackle the economic, environmental, climate and social challenges affecting urban areas. At least 5 % of national ERDF resources should be allocated to integrated actions for sustainable urban development.

## Examples of how climate issues were mainstreamed in the ERDF under the 2007-2013 financial framework

A wide range of the ERDF projects are already contributing to climate change mitigation and adaptation<sup>4</sup>, for example:

**ENWORKS** in the United Kingdom helps SMEs use scarce resources more efficiently, reduce their carbon emissions and become more profitable and competitive. It provides advice and support services to disseminate best practices and to facilitate knowledge transfer. ENWORKS has identified significant cost savings: 47.000 tonnes of CO2 emissions, 413.000 m3 of water, 9.300 tonnes of materials to date and it is also estimated to have safeguarded over 960 jobs.

**AMSTERDAM SMART CITY** tests smart technologies to save energy and facilitate sustainable choices by combining energy conservation and CO2 emissions reductions with innovation. It supports promising clusters, and involves more than 50 private-sector firms.

**UPTEC Science and Technology Park** in Portugal aims to support the transition of the Porto region in Portugal. It fosters the creation of, and provides support for, start-up companies and innovation centres supported by academia. Two of its four projects relate to climate change: UPTEC TECH, which covers energy and energy efficiency and UPTEC MARINE, which focuses on goods and services, such as wave energy.

The **Észak-Alföld reservoir** in Hungary will reduce the risk of damaging floods in the area around the river Szamos. The project involves the construction of a reservoir bordered by dykes with controllable water intake and outlet structures. The reservoir will significantly reduce the risk of flooding for more than 200.000 people.

**Energy saving:** In Lithuania, a scheme for renovating public buildings to reduce their energy consumption has been given a REGIOSTAR award for its innovative approach to tackling a high priority issue. Ex-ante energy audits are conducted to identify the reasons for high energy consumption in a specific building and the recommended works to be undertaken to improve energy performance. Substantial energy savings will be achieved and a significant number of jobs have been secured or created.

<sup>1</sup> Regulation (EU) No 1303/2013, published in the Official Journal, OJ 347 20.12.2013

<sup>2</sup> Cf. ERDF Regulation (EU) No 1301/2013 published in Official Journal, OJ 347 20.12.2013

<sup>3</sup> JESSICA (Joint European Support for Sustainable Investment in City Areas) supports sustainable urban development and regeneration through financial engineering mechanisms. EU countries can choose to invest some of their EU structural fund allocation in revolving funds to recycle financial resources to accelerate investment in Europe's urban areas.

JEREMIE (Joint European Resources for Micro to Medium Enterprises) promotes the use of financial engineering instruments to improve access to finance for SMEs via Structural Funds interventions. Countries can use part of their ERDF allocation to invest in revolving instruments such as venture capital, loan or guarantee funds. Instruments such as JESSICA and JEREMIE thus offer leverage of funds, opportunity for reinvesting returns and flexibility.

<sup>4</sup> For more examples, see: [http://ec.europa.eu/regional\\_policy/projects/stories/index\\_en.cfm](http://ec.europa.eu/regional_policy/projects/stories/index_en.cfm)

## Examples of mitigation action

| TO | Examples/Selected Investment priorities                                                                                                             | Potential mitigation action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Establishing and supporting mitigation-oriented Research and Innovation (R&I), clusters and networks that combine research, innovation and business | Stimulate innovation and commercial uptake of ideas, e.g. in tidal and wave energy, in energy saving technologies and in resource-efficient production. This could take the form of regional knowledge transfer projects that improve access for businesses to regional knowledge bases and facilitate interaction between business and research. This can help translate ideas into innovation, which is then translated into commercial activities. One such example is Innovation in Crops (InCrops) in East Anglia (United Kingdom, REGIOSTAR finalist 2013).                                |
| 2  | Improving access to and the quality of Information and Communication Technologies (ICT)                                                             | ICT has an important role to play in tackling climate change by enabling sectors such as transport, buildings, power and industry to become more efficient low-carbon sectors. For example, the Energy Management System in Haarlem as part of Amsterdam Smart City demonstrates the potential of ICTs to improve energy efficiency in domestic households.                                                                                                                                                                                                                                      |
| 3  | Enhancing the competitiveness of SMEs                                                                                                               | SMEs are a major source of economic growth and job creation in the EU. Helping them to achieve low-carbon growth can help ensure their competitiveness while also reducing emissions. Advisory services can raise awareness amongst SMEs of the profitability of low-carbon strategies, possibly combined with a more general focus on resource efficiency and sustainability. Green Business Growth in SMEs in Southern Denmark is an example (REGIOSTAR finalist 2013).                                                                                                                        |
| 4  | Shift towards the low-carbon and climate resilient economy                                                                                          | The 'low-carbon and climate resilient economy' refers to one which burns less fossil fuel and, as a result, emits lower volumes of GHG emissions. Projects may promote the development of renewable energy and energy efficiency measures to displace or reduce traditional fossil fuel use. For example, they may include the development of zero-emission hydrogen fuelling infrastructure such as the Hydrogen Region Flanders-South Netherlands project (REGIOSTAR finalist 2013), which focusses on early market demonstration of hydrogen technology developed by SMEs.                    |
| 4  | Supporting energy efficiency in public infrastructure                                                                                               | Improved energy efficiency in public infrastructures can, for example, be provided through the construction of new building infrastructure that incorporates energy efficient systems and materials (in line with available energy performance standards or better) to reduce their energy consumption and CO2 emissions. As another example, projects can improve the energy efficiency of existing public buildings through retrofitting and renovation.                                                                                                                                       |
| 4  | Energy Performance Contracting (EPC) in buildings                                                                                                   | Energy Services Companies (ESCOs) provide energy as a service. In customizing delivery of energy to meet the customer's needs, this business model offers further incentives to invest in energy efficiency and to adopt new technologies such as heat pumps and micro CHP. In EPC, an ESCO guarantees the energy savings generated from the installation of low-carbon technology. The savings generated through the installation cover the cost of the project and energy savings after the contract ends accrue to the customer. This could be supported by innovative financial instruments. |
| 4  | Renewable energy production                                                                                                                         | Increase the production of energy from renewable energy sources. This could, for example, involve the construction of concentrated solar power plants or wind farms to replace energy production based on fossil fuels and/or to accommodate expected increases in future demand.                                                                                                                                                                                                                                                                                                                |
| 4  | Renewable energy distribution                                                                                                                       | Upgrade existing distribution systems to facilitate the integration of energy from renewable sources into the main grid ('smart grids').                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 5  | Green roofs                                                                                                                                         | In providing an additional layer of insulation, a roof planted with vegetation reduces the need for heating and cooling in buildings.                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 6  | Upgrading or construction of waste treatment facilities or closure of existing landfills                                                            | Waste treatment infrastructure built in compliance with EU law will reduce methane emissions from landfill sites. Processing sludge from wastewater treatment also decreases methane emissions.                                                                                                                                                                                                                                                                                                                                                                                                  |
| 6  | Upgrading or construction of drinking water supply facilities                                                                                       | Construction or improvement of water supply systems incorporating low energy use technologies. The Barcelona Llobregat desalination plant, co-financed by ERDF, is an example. It integrates energy recovery technology and renewable energy like Photovoltaics (PV) technologies and wind to reduce its emissions from energy consumption.                                                                                                                                                                                                                                                      |
| 7  | Sustainable urban mobility                                                                                                                          | Promote and facilitate the use of sustainable modes of transport, which include transport demand management measures such as congestion-charging systems, parking management and low emission zones, complemented by improved public transport systems. Civitas MIMOSA (REGIOSTAR finalist 2011) supported innovative and sustainable mobility in the city of Funchal, Portugal.                                                                                                                                                                                                                 |
| 8  | Development of business incubators and investment support for self-employment and business creation in new areas for growth                         | Incubators and investment support could be targeted activities related to the low-carbon and climate resilient economy. This potential growth area also opens up opportunities for small businesses.                                                                                                                                                                                                                                                                                                                                                                                             |
| 9  | Contribution of social enterprises                                                                                                                  | Social enterprises could contribute to better waste management, recycling and collection and thus help reduce GHG emissions from landfills. ERDF can provide grants to enterprises unable to secure funding from mainstream sources.                                                                                                                                                                                                                                                                                                                                                             |

| TO | Examples/Selected Investment priorities                                     | Potential mitigation action                                                                                                                                                                                                                |
|----|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 | Investments in education and training infrastructure                        | Knowledge platforms can disseminate best practise projects. Community engagement activities like the Alterenergy project in the Adriatic can raise awareness and build capacity on energy saving measures and renewable energy production. |
| 11 | Enhancing institutional capacity and efficiency in programme implementation | Strong institutional capacity is needed to ensure that mitigation impacts are maximised. This includes ensuring horizontal coordination vis-à-vis other funds in programme implementation.                                                 |

## Examples of adaptation action

| TO | Examples/Selected Investment priorities                                                                                     | Potential adaptation action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Establishing and supporting adaptation-oriented clusters that combine research and business                                 | Stimulating innovation and commercial uptake of ideas, e.g. for urban solutions to respond to climate change and innovative technologies for adaptation.                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2  | Enhancing access to, use and quality of Information and Communication Technologies (ICT)                                    | Supporting the introduction of ICT applications that contribute to meeting future societal challenges and opportunities, such as early warning systems for flooding or heat waves, and solutions for integrating climate resilience into the supply chain.                                                                                                                                                                                                                                                                                                                           |
| 3  | Enhancing the competitiveness of SMEs                                                                                       | Encouraging SMEs with advisory competences in climate risk management, business continuity, and how to make investment projects more climate resilient.                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 4  | Supporting the shift towards the low-carbon economy                                                                         | Promoting low-carbon strategies for urban areas which have a strong emphasis on integrating climate change adaptation measures.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5  | Supporting networks in coping with major incidents and disasters                                                            | Promoting investment and disaster management systems to address specific climate-related risks. The Cooperation for Safety in Sparsely Populated Areas (CoSafe) is one example, and is supported by the ERDF.                                                                                                                                                                                                                                                                                                                                                                        |
| 5  | Construction of green infrastructure in urban areas                                                                         | Developing green urban areas, green walls and green roofs can help to reduce the adverse impacts of high temperature extremes. Green spaces and roofs can also help reduce the runoff and flooding following heavy rainfall events. Manchester City Council's 'City Green Infrastructure Plan' is one example.                                                                                                                                                                                                                                                                       |
| 5  | Construction of new buildings                                                                                               | In order to address risks of overheating, new buildings can incorporate design and building techniques for cooling and air conditioning which are resilient to projected changes in the climate, while at the same time ensuring that existing energy performance standards are achieved. Risks of increased water shortages can be addressed by making buildings more water efficient e.g. by harvesting rainwater for 'grey' water uses and using water-efficient fixtures and fittings.                                                                                           |
| 5  | Adaptation strategies                                                                                                       | Development, implementation and review of adaptation strategies and related action plans at the national, regional, local and urban levels.                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 6  | Leakage reduction in water distribution networks                                                                            | Water losses in networks may be sizeable due to degraded existing pipes. This will become of more concern if the region is exposed to increased drought risk with climate change. Pipe replacement will reduce leakage and the risks posed by water scarcity. This action will bring co-benefits for energy efficiency as less raw water will need to be produced.                                                                                                                                                                                                                   |
| 6  | Construction of rain overflow basins                                                                                        | Storm water reservoirs can help to address risks associated with increased precipitation and peak precipitation intensity.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 6  | Upgrading or construction of waste disposal facilities                                                                      | Waste disposal facilities may be exposed to increased risks of flooding due to climate change. Building flood protection barriers or, in extreme cases, relocating the facility can reduce this risk.                                                                                                                                                                                                                                                                                                                                                                                |
| 7  | Construction of rail and road infrastructure                                                                                | Road and rail infrastructure must be designed to be resilient to climate risks e.g. projected higher temperatures or heavier rainfall. New rail projects will also provide mitigation co-benefits by reducing greenhouse gas emissions, if traffic is diverted from roads. Network Rail (UK) - responsible for the safety and operation of 32.000 km of railway track across the UK - is an example of an institution investing heavily in securing the long-term viability of its critical assets and ensuring the security of supply for its customers in light of climate change. |
| 7  | Realignment of existing roads                                                                                               | More intense precipitation and sea level rises may make certain roads more exposed to flooding. Realigning roads may be the most cost-effective risk reduction measure in some high-risk coastal areas. New roads may also use heat-resistant asphalt to cope with the risk of more extreme high temperatures.                                                                                                                                                                                                                                                                       |
| 8  | Development of business incubators and investment support for self-employment and business creation in new areas for growth | Incubators and investment support could be targeted towards employment and business creation in specialised adaptation areas. It could also support necessary shifts in local communities whose dominant businesses are very negatively impacted by the adverse impacts of climate change.                                                                                                                                                                                                                                                                                           |
| 10 | Investments in education and training Infrastructure                                                                        | Investments can support the creation of facilities for education and training to meet the needs of high climate risk sectors, such as water, and to build a more climate-resilient economy in general.                                                                                                                                                                                                                                                                                                                                                                               |
| 11 | Enhancing institutional capacity and efficiency in programme implementation                                                 | Building capacity of national, regional and local administrations to develop and implement adaptation strategies, and to ensure that adaptation is integrated across programmes.                                                                                                                                                                                                                                                                                                                                                                                                     |

## Background information

### Why do we need to take climate action?

Tackling climate change is one of the great challenges facing the EU and its global partners.

The need for urgent action is clearly reflected in the Europe 2020 Strategy and the EU's ambitious 20/20/20 targets for climate change mitigation, i.e. to cut greenhouse gas emissions by 20 % (30 % if the conditions are right); reduce energy consumption by 20 % through increased energy efficiency; and to meet 20 % of energy needs from renewable sources.

Climate change is already happening and its effects will become more severe in coming years. So we need to take action on mitigation, and we also need to act to protect people, buildings, infrastructure, businesses and ecosystems from the impacts. These adaptation measures, which will make us more resilient to the adverse impacts of climate change, will become increasingly important. Adaptation measures can be taken at national, regional and local levels. Adaptation measures include for example actions that can stimulate more efficient water use, and development and use of design standards that protect constructions against the impacts of future climate conditions and extreme weather events. Other examples include the building of flood defences, raising the levels of dykes, and replacing exposed power overhead lines with underground cables. It also includes measures to take advantage of possible opportunities arising from climate change. The aim of the EU Strategy on adaptation to climate change is to help make Europe more climate-resilient and enhance its preparedness and capacity to respond to the impacts of climate change.

Building a low-carbon and climate resilient economy will enhance Europe's competitiveness, create new, greener jobs, improve energy security and bring health benefits to Europe's citizens by improving air quality.

### EU funding over the period 2014–2020

The EU budget has an important role to play in promoting climate action in all sectors of the European economy and in catalysing the investments needed to meet the climate targets and ensure climate resilience. Investment is needed in a wide range of technologies that improve energy efficiency, in renewable energy sources and related infrastructure, and in the adaptation to climate change.

Based on a proposal put forward by the Commission, the European Council concluded on 7-8 February 2013 that 'Climate action objectives will represent at least 20 % of EU spending in the period 2014-2020 and therefore be reflected in the appropriate instruments to ensure that they contribute to strengthen energy security, building a low-carbon, resource efficient and climate resilient economy that will enhance Europe's competitiveness and create more and greener jobs'.

### European Structural and Investment Funds (ESIF)

ESIF include the European Regional Development Fund (ERDF), the Cohesion Fund (CF), the European Social Fund (ESF), the European Agricultural Fund for Rural Development (EAFRD), and the European Maritime and Fisheries Fund (EMFF).

The ultimate responsibility for implementing the EU budget lies with the European Commission, but the ESIF are implemented under 'shared management' with individual EU countries actually distributing the funds and managing expenditure. Checks and balances are in place to ensure the funds are managed properly and in accordance with the rules.

## Common Provisions Regulation (CPR)

The CPR sets out the means to achieve consistency with the economic policies of the EU and its Member States, coordination mechanisms among the ESI Funds and with other EU policies and instruments, horizontal principles and cross-cutting policy objectives. It lays down arrangements to address territorial challenges, suggests action with high European added value and sets out the principles and the priorities for action.

Each Member State will prepare a Partnership Agreement, in cooperation with its partners and in dialogue with the Commission. In preparing the Partnership Agreement, each Member State translates the elements set out in the CPR into the national context and sets firm commitments to achieve the EU's objectives through the programming of the ESIF.

ESIF will be implemented through programmes in accordance with the Partnership Agreement. Each programme will cover the period 2014 - 2020. It will set out a strategy explaining how the programme will address the national and/or regional needs and contribute to the EU's strategy for smart, sustainable and inclusive growth, in line with the applicable regulations and the Partnership Agreement.

The CPR defines eleven Thematic Objectives (TOs), which will contribute to the implementation of the EU's strategy for smart, sustainable and inclusive growth. The eleven TOs are:

1. Strengthening research, technological development and innovation
2. Enhancing access to, and use and quality of, ICT
3. Enhancing the competitiveness of SMEs, of the agricultural sector (for the EAFRD) and of the fishery and aquaculture sector (for the EMFF)
4. Supporting the shift towards a low-carbon economy in all sectors
5. Promoting climate change adaptation, risk prevention and management
6. Preserving and protecting the environment and promoting resource efficiency
7. Promoting sustainable transport and removing bottlenecks in key network infrastructures
8. Promoting sustainable and quality employment and supporting labour mobility
9. Promoting social inclusion, combating poverty and any discrimination
10. Investing in education, training and vocational training for skills and lifelong learning
11. Enhancing institutional capacity of public authorities and stakeholders and efficient public administration

The fund-specific regulations define for each TO the corresponding investment priorities.

TO4 and TO5 are dedicated to climate change mitigation and adaptation. In addition, climate action issues can be mainstreamed into other TOs. Hence, ESIF can significantly contribute to the achievement of the climate objectives and the transition to a low-carbon and climate resilient economy.

The European Regional Development Fund (ERDF) will make a major contribution to the transition to a low-carbon and climate resilient Europe.

This Fact Sheet shows how this can be done and outlines the potential for climate mainstreaming in this fund.

The ERDF is one of the five European Structural and Investment Funds (ESIF) under the Common Provisions Regulation (CPR). These Funds have a key role to play in achieving the Europe 2020 Strategy for smart, sustainable and inclusive growth. The five Funds will contribute to the target that climate action objectives will represent at least 20 % of EU spending in the period 2014-2020, while helping to improve energy security, build a low-carbon, resource-efficient and climate resilient economy that will boost Europe's competitiveness and create more and greener jobs.

The ERDF aims to strengthen economic and social cohesion in the European Union by correcting imbalances between its regions. The ERDF supports regional and local development by co-financing investments in R&D and innovation; climate change and environment; business support to SMEs; services of common economic interest; telecommunication, energy and transport infrastructures; health, education and social infrastructures; and sustainable urban development.

The CPR defines eleven Thematic Objectives that will contribute to the implementation of the Europe 2020 Strategy. The ERDF covers all eleven Thematic Objectives. There is major potential for mainstreaming climate action in all objectives. By doing so, the ERDF can contribute towards reaching at least 20 % climate-related expenditure out of the overall EU budget.

#### Further information

DG Climate Action: <http://ec.europa.eu/clima>

