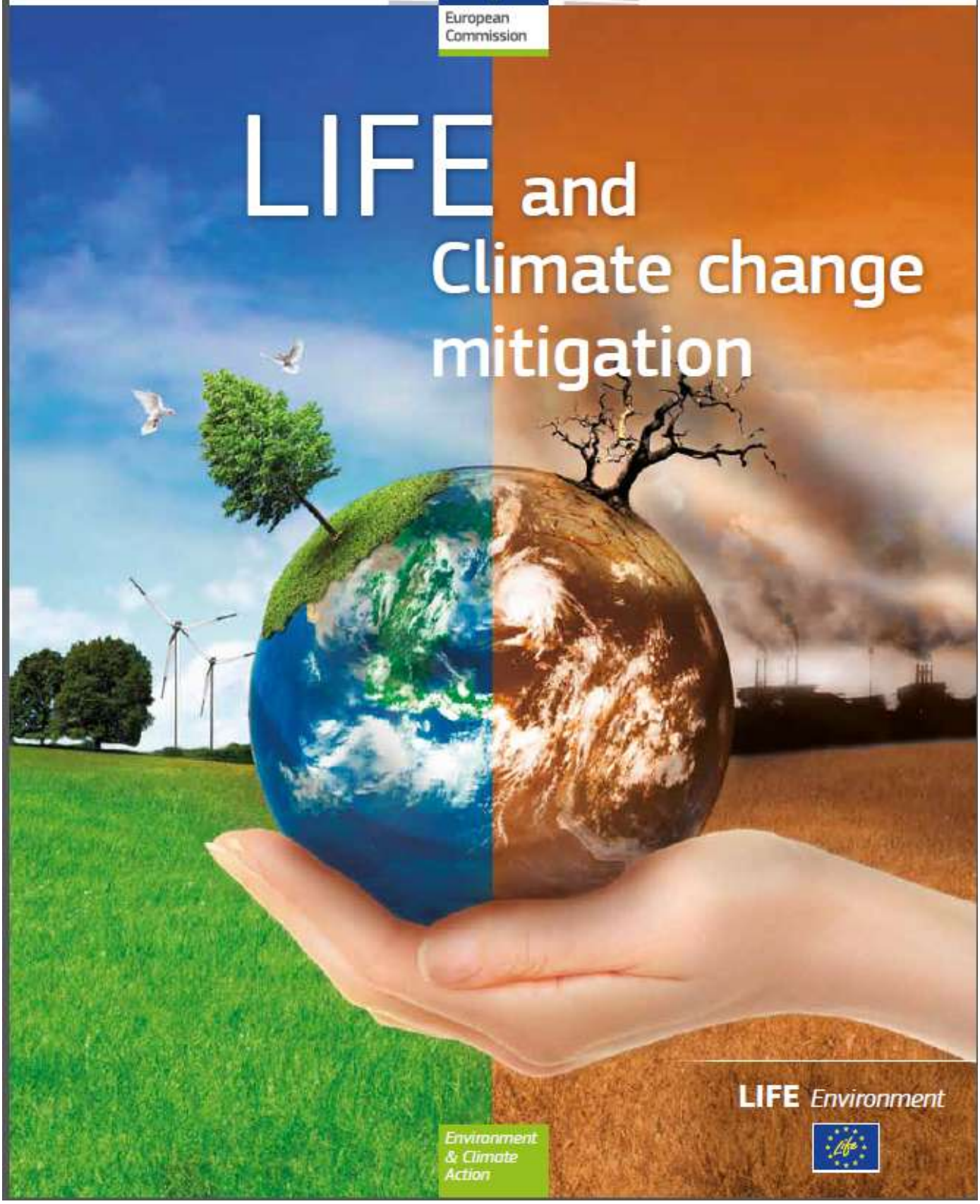
European Commission

LIFE and Climate change mitigation



LIFE Environment

Environment & Climate Action

Agricultural carbon audits

Although there is no current EU requirement for farmers to report GHG emissions at farm level, there are many voluntary initiatives to evaluate emissions from agricultural activities and to implement mitigation actions. New RDP measures in Pillar 2 of the CAP can now finance carbon auditing as a contribution to mitigating climate change and the audits can be extended to cover a full lifecycle analysis of farm production, examining factors beyond the farm gate that contribute to GHG emissions in agri-food chains (i.e. in processing, packaging, waste management and haulage).

Carrying out a farm carbon audit can help an agribusiness to identify GHG emissions and benchmark these in order to identify cost savings through improved use of inputs or energy-efficiency. LIFE projects such as AgriClimateChange and ClimatechangE-R represent some of Europe's pioneers in farm-based carbon audits, and their results have been recognised at the highest levels of EU policy (see the feature article on p.65).

Energy use is a key part of carbon audits and an informative collection of energy-efficient approaches has been taken forward by LIFE projects involved in cutting fuel consumption on farms. Reduced tillage, limited frequency of agri-chemical applications, and more efficient irrigation have all been objectively appraised by LIFE as viable tools for making farms less energy dependent. Increased use of renewable energy sources - by projects including Adapt2Change and BIOAGRO - further contribute to the LIFE knowledge-base in this sector. Also, OZERISE is developing an innovative rural development to farmers increase production of renewable energy and to reduce overall energy consumption on farm holdings.

The AGRICLIMATECHANGE project team did much to transfer knowledge about soil conservation techniques

Photo Tim Hudson

Agroforestry

Forests play an important role in the global carbon balance. As both carbon sources and sinks, they have the potential to form an important component in efforts to mitigate climate change. Accounting for the carbon within forest ecosystems and changes in carbon stocks resulting from human activities is a necessary first step towards the better representation of forests in climate change policy at regional, national and global scales.

Few LIFE projects have targeted agroforestry. SOL-MACC is encouraging farmers to combine trees, crops and livestock in one agricultural system and to plant new trees. The project also intends to conduct close scientific monitoring to show how these practices can assist farmers to mitigate climate change, as well as highlighting their economic feasibility and technical requirements. OPERATION CO_2 will demonstrate the economic viability and environmental validity of agroforestry carbon sequestering projects in Europe. It aims to promote active nature conservation and carbon management in forests over an area of 4 500 ha. To this end, it will demonstrate a series of targeted forest and carbon actions resulting in the long-term improvement of carbon sequestering in natural forests.

Looking ahead

This review of LIFE project contributions to mitigating climate challenges in agriculture emphasises the value of the programme as a popular and productive source of support for Europe's farmers. LIFE has helped Member States to test, validate, and implement a broad spectrum of innovations that reinforce farmers' efforts to remain competitive in environmentally-friendly ways.

LIFE's future on the farm therefore looks set to continue and the new LIFE funding period up until 2020 will undoubtedly see Member States using LIFE co-finance to generate an even more impressive set of multi-functional climate-friendly benefits for Europe, and the wider world, from our farms.

practices to take the full nitrogen cycle into account. Projects have cut methane and nitrous oxide emissions by optimising nitrogen application through precision farming as well as through livestock management, low-emission approaches to the spreading and storage of manure and slurry and through composting systems. Carbon levels have been maintained or enhanced through proper soil management and land management. Examples include conservation agriculture, no tillage farming, maintenance of soil cover, protection of organic matter in carbon-rich soils and restoration of peatlands, grasslands and degraded soil. Proper land management involves diversifying crop rotations, conversion of arable land to grasslands, organic farming and afforestation.

In the future, there is scope for more projects that explore the development of carbon audits for agribusinesses. By identifying and benchmarking their GHG emissions, farmers would be able to identify cost savings and ways of reducing those emissions through improved use of inputs and energy-efficiency. There is also a need for further projects aimed at linking farms with the production and use of renewable energy. So far, the LIFE programme has funded six projects of this type.

The Operation CO_2 project used the latest data-gathering methods to produce an inventory of a forested area

Photo: LIFE11 ENV/ES/000553 Sistemas Forestales

LIFE has helped reduce the carbon footprint of tourism businesses

Photo: LIFE11 ENV/IE/000523

LIFE offers many examples of successful engagement with the farming sector, providing on-farm demonstrations in real-world conditions. Education and targeted knowledge transfer have been an integral part of the projects in the sector. LIFE projects take account of the economic viability of their proposed solutions, and their cost assessments have been suitably robust to address concerns from EU farming communities. Furthermore, establishing conditions that enable farmers to continue to receive expert advice from agronomists after co-funding ends demonstrates the long-term sustainability of LIFE solutions.

Technological development in agriculture is one of the main priorities for LIFE Climate Action. More projects from the agriculture and forestry sectors need to test promising practices at a larger scale. Integrated Projects give Member States in the same agri-ecological zone the chance to work together and have an impact on a broader territorial scale. Member States are obliged to report on their actions to decrease GHG emissions from agro-forestry activities, thus more proposals are welcomed from this sector, which has been targeted by only two climate mitigation projects to date.

Peatlands

Between 1992 and 2013, more than 370 LIFE Nature projects carried out conservation measures on