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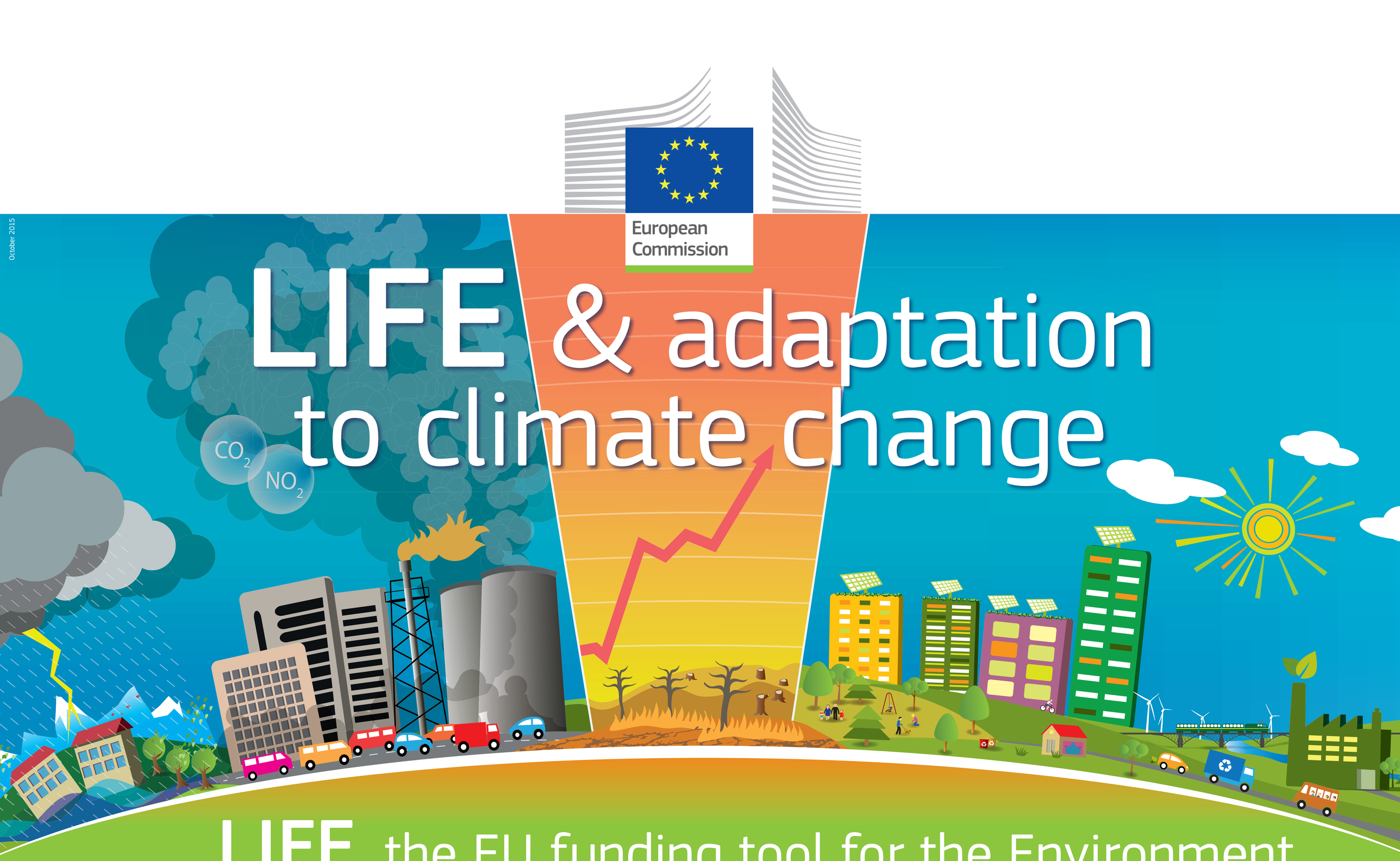
European Commission

LIFE & adaptation to climate change



LIFE, the EU funding tool for the Environment

Since 1992, LIFE has contributed to the implementation, updating and development of EU environmental policy and legislation by co-financing pilot or demonstration projects with European added value.
LIFE is helping with the EU's transition to a low carbon and climate resilient economy, strategically underpinning the implementation of the EU strategy on adaptation to climate change and demonstrating ways to meet the climate action challenges from now to 2030.

MANAGING DRINKING WATER IN URBAN AREAS

WIZ developed and demonstrated an innovative online platform that includes two informative services (WIZ4All & WIZ4Planners) that are able to incorporate the protection and sustainable management of water into urban planning processes and local policy areas.

WIZ4Planners is a decision-support service for local authorities and other stakeholders concerned with territorial and urban planning. An analysis of long-term management of drinking water integrated into land use planning and climatic scenarios was conducted, enabling water authorities to prepare investment plans and harmonise data characterising the water demands of an area.

WIZ4All provides information on current and future water resources availability for specific locations and citizens' active reporting on the quality of drinking water is amongst the activities making an optimum 'participatory management approach' possible.

The WIZ approach was introduced into the decision-making practices of 10 pilot municipalities in Tuscany, Italy, and two in Galicia, Spain. During the project lifetime, about 11% of the water needs for the population residing in the demonstration areas was managed through the WIZ services. The Tuscany Water Authority (AIT) officially invited the coordinating beneficiary to promote the use of WIZ throughout the region, while in Spain the approach is being extended to other municipalities.

The demonstration of the WIZ approach in two different European contexts and its inclusion in the projects CLIMATE – ADAPT (the European Platform on adaptation to climate change) means that it should be easily replicable in other countries.

WIZ *LIFE09 ENV/IT/000056*

FOREST FIRE PREVENTION

Photo: LIFE09 ENV/IT/000056

ArcFUEL delivered a complete and updated geospatial methodology and workflow for the production of fuel classification maps (FCMs) to be used in forest fire management operations in Europe.

The project team compiled information from previous forest fuel mapping initiatives, utilised ancillary data and developed a consistent and systematic ex novo methodology for rapid classification of forest vegetation as fuel types.

The project carried out specific actions in four different pilot regions of Greece, Portugal, Italy and Spain in line with the project methodology. It acquired low-cost LANDSAT satellite images; processed these images and produced an 'auto-processing' methodology (fully automated); prepared vegetation data/maps – clustering and classifying vegetation classes – for target areas; collected and processed of ancillary data for these areas; 'processed' vegetation maps and ancillary data in order to develop a methodology for delivering the project areas' FCM; and then created and harmonised the maps, obtained with the methodology, according to the INSPIRE principles.

The quality of the mapping was tested against field data – around 670 plots were sampled – through stakeholder inputs and field visits ('Ground Truth Surveys') at the pilot areas to verify the results of the methodology. Additionally, a geodatabase was developed (www.arcfuel.eu) to demonstrate the results of the Ground Truth Surveys and the new FCMs for the pilot areas.

The project developed a harmonised methodology that enables the mapping processes to be replicated easily in other local/regional areas and the maps produced to be updated.

ArcFUEL *LIFE10 ENV/GR/000617*

ADDRESSING THREATS OF EUTROPHICATION

Photo: LIFE09 ENV/FI/000569

GISBLOOM aimed to build tools and capacity for quantifying the effects of different climate change scenarios in order to help tackle the threats of eutrophication and algal blooms in rivers and lakes in Finland.

The project team used a combination of satellite imagery and data from automatic measuring stations to conduct a complete analysis of national data on hydrology, land use, nutrient loading, water quality, eutrophication and algal blooms.

Moreover, using an integrated model, they assessed eutrophication and algal bloom scenarios – monitoring the state of 11 water bodies – as a function of climate and land use changes, which led to the identification of feasible and cost-efficient measures for managing river basin areas.

The project developed an innovative web-based map service, Vesinetti, and an interactive portal, LakeWiki. These online services demonstrated the models and methods that were introduced to the pilot areas. The online services further facilitated the dissemination of information and viewpoints for educational purposes, as well as participatory river basin management at EU level – including the exchange of information among European projects and raising awareness about eutrophication and algal blooming among the public and key stakeholder groups.

As a result of the extensive testing – long-term monitoring and identification of environmental benefits – in several river basin pilot areas, the tools have been adopted by river basin management planners and stakeholders in public and private organisations.

GISBLOOM *LIFE09 ENV/FI/000569*

CLIMATE SMART AGRICULTURE PRACTICES

Photo: LIFE08 ENV/GR/000570

Hydrosense demonstrated precision agriculture practices by employing site-specific management and advanced technologies and tools for improving efficiency in the use of water, fertilisers and pesticides in the production of a Mediterranean agricultural crop (cotton).

The project team installed four infrared thermocouple sensors and a base station equipped with meteorological instruments in order to analyse air and canopy temperatures and regulate variable-rate irrigation. Supplementary to the infrared sensors, soil moisture sensors (measuring the rate of decrease of soil moisture) evapotranspiration devices (measuring the amount of water lost from the soil-crop system) and a variable-rate drip irrigation system (that allows independent irrigation) were installed.

This smart crop system approach uses the actual plant to determine the water needs by assessing stress effects due to water shortages and the time of irrigation events.

Additionally, multispectral proximal sensors were used to measure chlorophyll content in order to estimate segmented fertiliser requirements and the WeedSeeker was used for the detection of weeds and the targeted use of herbicides.

The application of precision farming technologies in the three pilot fields selected (each one 3 ha in size) resulted in a substantial reduction in the use of irrigation water by 18%, nitrogen fertilisers by 35% and total herbicides by 62%, while a 20% increase in energy use efficiency was also achieved in comparison to conventional farming practices. Finally, in spite of the reductions in water and chemicals, an average 10% increase in cotton yield was obtained.

Hydrosense *LIFE08 ENV/GR/000570*

Environment

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