

LIFE Smart4Action is coordinated by the Arma dei Carabinieri in collaboration with:

The National Research Council (CNR), with its ISE Institute (Institute for Ecosystem Study), engaged in the study of the structure and dynamics of ecosystems in response to anthropogenic threats and IBAF (Institute of Agro-Environmental Biology and Forestry), which studies plant-environment interactions and the effects of climate change and pollution on ecosystems;

The Council for Research in Agriculture (CREA), with its Research Center for Forestry and Wood (FL), specialized in the study of meteorology and forest management and structure;

The University of Florence, with two Departments, the Department of Earth Sciences and the Department of Agrifood Production and Environmental Sciences, experts in geological sciences and the study of the state of health, ecophysiology and biodiversity of forests.

The main objectives of the project are:

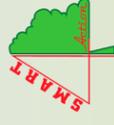
- to re-shape forest monitoring in Italy and its information and reporting system in a way that, while keeping them scientifically sound, they can be financially sustainable even under budget restriction;
- to design and implement improved communication, information and data transfer to stakeholders (regions and provinces, parks, associations, citizens);
- to develop and implement field tests aimed at direct citizen involvement in forest plot management and in carrying out basic data collection.

The banner features a background of a forest with trees covered in snow under a blue sky. At the top left is the Carabinieri logo. Below it, the text reads: "Financed by the LIFE instrument of the European Union". To the right of this text are the logos for the European Union (LIFE NATURA 2000) and Google Play. The main text in the center is: "Smart4Action Citizen Involvement" and "Smart4Action Reporting". Below this is the URL: "WEB GIS <http://smart4action.ise.cnr.it/smart4action>". At the bottom right is the project ID: "LIFE13/ENV/IT/000813".

The banner features a background of a forest with green trees. At the top left is the Carabinieri logo. Below it is the CREA logo. The main text in the center is: "LIFE SMART4ACTION SUSTAINABLE MONITORING AND REPORTING TO INFORM FOREST AND ENVIRONMENTAL AWARENESS AND PROTECTION". At the bottom right is the project ID: "LIFE13/ENV/IT/000813".



UNIVERSITA'
DEGLI STUDI
FIRENZE



LIFE Smart4Action: purpose of the project

Monitoring of forest conditions in Italy is carried out through a network of two types of test areas belonging to the International ICP Forests Program: Level I (253 sites) and Level II (31 square areas of 50 meters per side within the main forest types). At test areas, chemical-physical and biological measurements are carried out, in order to study the forest health status through the analysis of: biodiversity, tree growth, crown conditions, air quality and chemical composition of precipitation and soil solutions.

The LIFE Smart4Action project aims at re-shaping the network to reduce operating costs, while keeping the scientific accuracy of the data. Furthermore, the project introduces citizens to data collection carried out at forestry areas, so that they can act as direct actors of sampling activities, as "citizen-scientists". Smart4Action is financed by the LIFE instrument of the European Union.

PROJECT

Cost reduction testing of forest variables, ensuring the maintenance of correct results

Analysis and evaluation of data collected from reduced number of plots and/or sampling campaigns

Analysis and evaluation of existing data

Identification of priorities through the information flow to policy makers and citizens, with the cooperation of selected stakeholders

Field trips and local workshops with the participation of citizen as scientists

ACTIONS



It is possible to reduce the costs of test areas activity, while maintaining value and soundness of data, through a calibrated reduction of the number of considered areas and the number of sampling and / or analyses.



Crown conditions (Level I) : by reducing the number of areas (128 areas out of 253), costs are decreased by 50%, without affecting the accuracy of results



Forest biodiversity (Level I) : considering only 85 areas out of 201, costs are reduced by 42% and the error in the data remains below 5% (statistical limit), therefore acceptable



Chemical composition of precipitation and soil solutions (Level II) : reducing the number of samples or the frequency of the analyses or both, it is possible to achieve a cost reduction (up to 50%)



Tree growth (Level II) : in beech, oak and spruce forests, measuring tree growth in 23 areas instead of 31, costs are reduced by 26% without affecting the results and without significant information gaps



The network allows to evaluate deposition trends over time and their impacts on ecosystems

MAIN RESULTS

