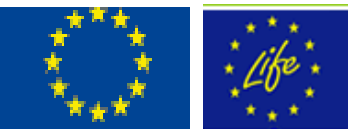


LA FUNDACIÓN CEAM/ CEAM FOUNDATION

25
ANIVERSARIO
1991 - 2016



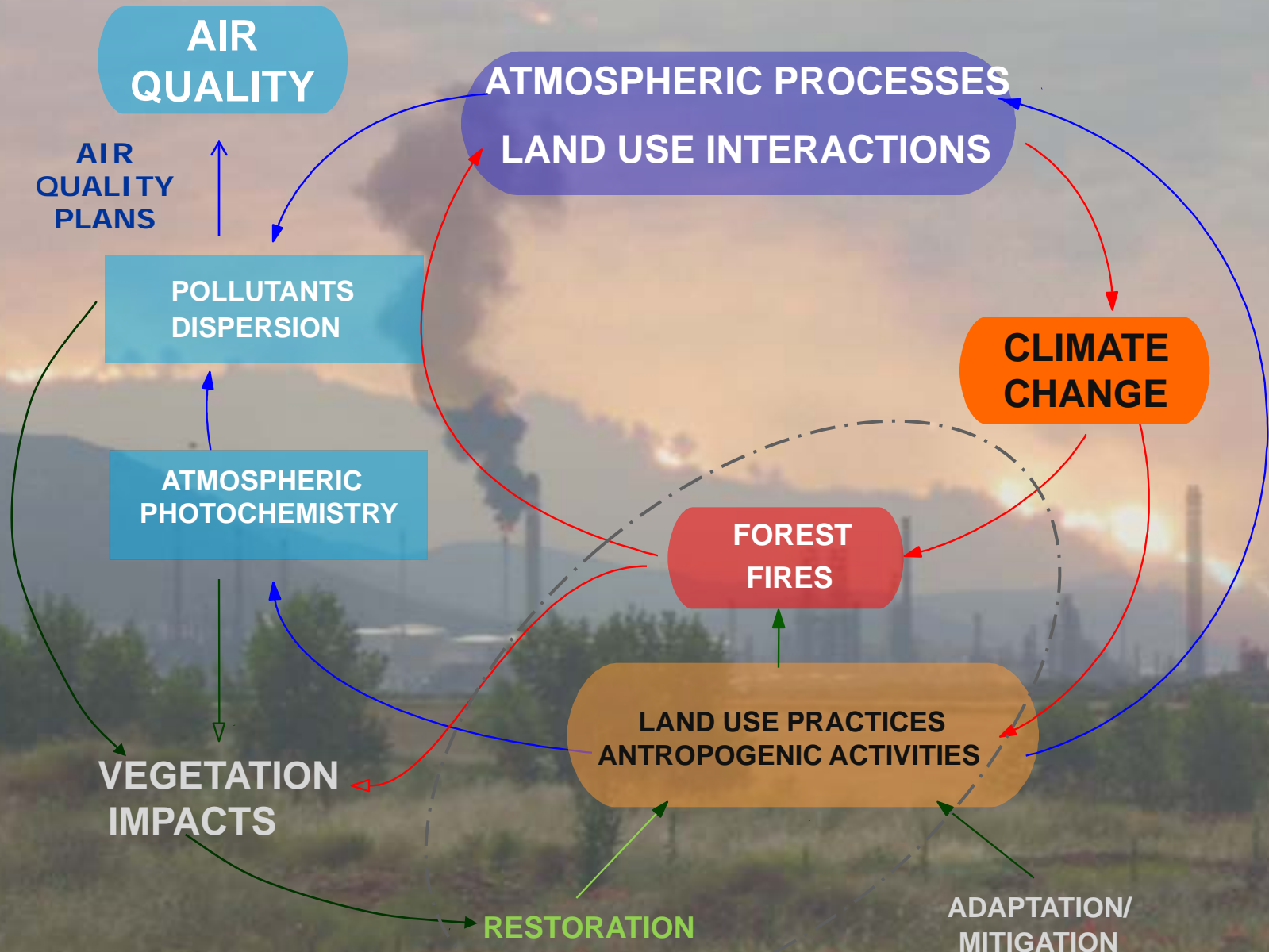
Ongoing CEAM Research Ramon Vallejo



PROGRAMA PROHETEO



RESEARCH APPROACH Specific RTD for the Mediterranean



EUPHORE: one of the largest facilities in the world

Experiments in controlled, close to real conditions

General objective:

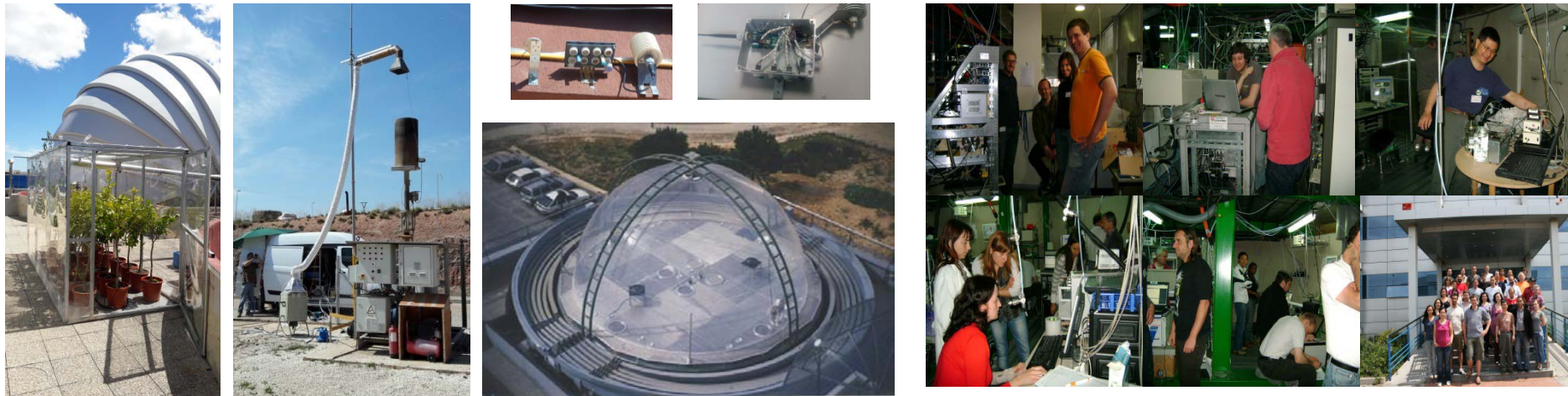
- Atmospheric chemical processes and analysis of air pollutants



Activities:

- Atmospheric degradation of plaguicides
- Use of photocatalytic textiles for the reduction of air pollutants in urban areas
- Experimental campaigns in EUPHORE by external groups
- Open air emissions and immissions characterization (schools, dumping sites, forest fires ,...)
- Photochemical models validation
- International dissemination, exchange of researchers

Challenge: Coupling meteorological, photochemical and dispersion models for predicting secondary pollutants levels at the local and regional scale



General objective:

- Meteorological mechanisms & processes
Mediterranean basin → Valencia Region
- Dispersion, transport & transformation of air pollutants
→ improvement of air quality



Activities:

- Network of weather stations and fog collectors
- Supporting administrations in complying with regulations: environmental monitoring, action plans,....
- Weather forecast for health protection
- Meteorological assessment for extreme events and industrial hazards
- Evaluation of environmental impact → enterprises

Challenges:

- Consolidation of an operational service for weather & pollutants dispersion surveillance and forecasting for the Region of Valencia (CV)
- Contributing to the design and implementation of improvement air quality plans for the CV.
- Mesoscale meteorology under climate change



Carbon Cycle

Objective:

Carbon and water cycle in Mediterranean ecosystems

Activities:

- Monitoring of water and carbon cycle in representative Mediterranean ecosystems – eddy covariance stations (since 1999) - Participation in international networks (ICOS, FLUXNET).

→ Analysis of fluxes of main GHG (CO_2 , CH_4 , N_2O and O_3)

- Impact of management practices onto ecosystem productivity
- Interactions between water, carbon and nutrient (N, P) cycles



Impacts of air pollutants on vegetation

Objective:

Assessment of air pollution levels and their effects on crops and natural vegetation

Activities:

- Air pollution and N impacts on forests and Mediterranean crops - UN programmes ICP-Forest & ICP-Vegetation, under the Convention on Long-range Transboundary Air Pollution (CLTRAP).
- Assessment of ozone risk for vegetation
- Collaboration with the Chinese Academy of Sciences for the assessment of air pollutant impacts under climate change
- GHG and N compounds emissions in farms – towards good practices for the reduction of emissions



Challenges:

- Promote link between flux-tower stations and remote sensing. Development, calibration and validation of remote sensing products related to ecosystem productivity, carbon and water fluxes for Mediterranean ecosystems.
- Monitoring of climate change impacts on the main crops in the Region of Valencia





EXTREME DROUGHT

3D perspective for the province of Valencia

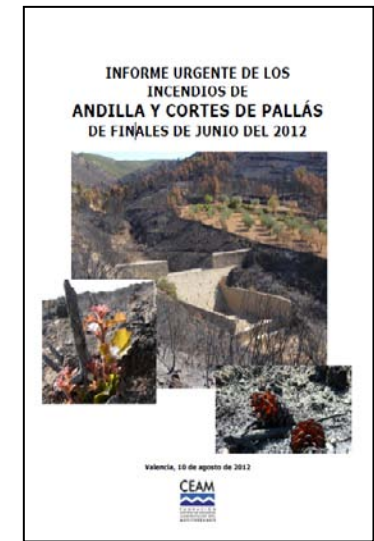
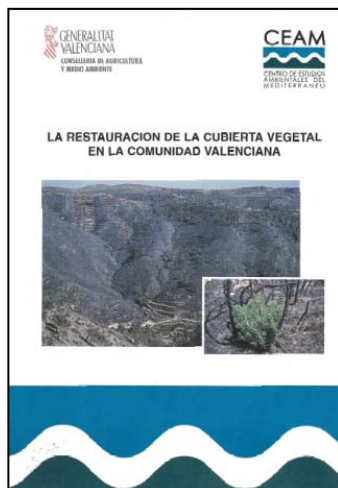
Mega-fires > 20.000 ha
since 1978

Objetives:

- Assessing the impacts of forest fires
- Forest restoration to improve climate change adaptation and fire-resilience

Activities:

- Assessing post-fire management
- Fire prevention innovation
- Improving water use efficiency in forest restoration under climate change



Challenges:

- Assess the ecological impacts of recurrent droughts combined with forest fires
- Identification of irreversible ecosystem degradation threats – early warning and potential recuperation of ecosystem services
- Stakeholders involvement in fire prevention



INTERACTIONS OF
ATMOSPHERIC PROCESSES
LAND USE CHANGES
FOREST FIRES
AIR POLLUTION



UNDER CLIMATE CHANGE

FOR
CLIMATE CHANGE ADAPTATION AND MITIGATION
HYDROLOGICAL CYCLE; UNDERSTANDING IMPACTS &
MANAGEMENT OPTIONS
DEVELOPING MANAGEMENT TOOLS