

**Project Number 282910**

**ÉCLAIRE**

**Effects of Climate Change on Air Pollution Impacts and Response  
 Strategies for European Ecosystems**

**Seventh Framework Programme**

**Theme: Environment**

**Deliverable D23.2: First periodic report on training  
 activities**

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<b>PU</b>	Public	<input checked="" type="checkbox"/>
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<b>CO</b>	Confidential, only for members of the consortium (including the Commission Services)	<input type="checkbox"/>

## 1. Executive Summary

- i). This document presents an overview of the ÉCLAIRE Training Activities for the first reporting period (Months 1-18)
- ii). The objectives of the ÉCLAIRE Training Work Package are:
  - a) *To organise specialised training events for postgraduate students and young scientists with the aim to train participants in advanced measurement techniques and modelling methodologies;*
  - b) *To develop a plan for and organise, run and evaluate a summer school for young scientists from within ÉCLAIRE and related projects around the topic of air pollution effects on ecosystems under climate change conditions.*
- iii). ÉCLAIRE training activities have been developed based on the Training Plan submitted in Month 9 (Deliverable D23.1) and adopted in Month 10 (Milestone MS118)
- iv). Frequent updates on training activities have been provided to the ÉCLAIRE community via the Training webpage on the project website
- v). Following an open call for Summer School hosts in Month 12, INRA Thiverval-Grignon (France) was selected to host the activity. A concept for the Summer School was developed jointly with them and was submitted in Month 15 (Deliverable D23.5) and adopted in Month 16 (Milestone MS119)
- vi). The proposed central theme of the Summer School is the measurement and modelling of exchange processes. This core theme could be coupled with an analysis of upscaling effects (plant-canopy-ecosystem-landscape-region-country-Europe-global) and advanced statistical analysis to cover two of the other identified training needs
- vii). The Summer School will be held in Paris between the 2nd and 12th July and registration was opened to those interested in participating on 6 May 2013.

## 2. Objectives:

The objectives of the ÉCLAIRE Training Work Package are:

1. *To organise specialised training events for postgraduate students and young scientists with the aim to train participants in advanced measurement techniques and modelling methodologies;*
2. *To develop a plan for and organise, run and evaluate a summer school for young scientists from within ÉCLAIRE and related projects around the topic of air pollution effects on ecosystems under climate change conditions.*

## 3. Activities:

### Task 23.1: Co-ordination of ÉCLAIRE training activities

ÉCLAIRE training activities have been developed based on the Training Plan submitted in Month 9 (Deliverable D23.1).

This Training Plan was developed using the results of a young scientist (and supervisor) training survey conducted in Month 7 that collected information on the young scientists' role in the project and their training needs. The survey was designed and completed online through [freeonlinesurveys.com](http://freeonlinesurveys.com) (Figure 1), which facilitated the tracking of responses and collation of data. Information obtained via the survey included personal information, academic qualifications and role within ÉCLAIRE (e.g. Work Package, PhD/research topic etc), previous training activities attended and training activities that are already planned. Information was also obtained on which specific scientific training activities the young scientists would be interested in and the interest level for a list of general training activities (e.g. scientific writing, statistics etc.)

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**éclair** Training survey

**General training activities:**

16: Which of the following general/training activities would you be interested in attending to support your PhD or work within ÉCLAIRE?

	Interested	Not interested	Level (if applicable)
Statistics	<input checked="" type="radio"/>	<input type="radio"/>	<input type="text"/>
Scientific writing	<input checked="" type="radio"/>	<input type="radio"/>	<input type="text"/>
GIS	<input type="radio"/>	<input checked="" type="radio"/>	<input type="text"/>
Media training	<input checked="" type="radio"/>	<input type="radio"/>	<input type="text"/>
Communication skills	<input checked="" type="radio"/>	<input type="radio"/>	<input type="text"/>

Figure 1: Screenshot of the “General training activities” page of the online survey

The young scientist survey was completed by 19 scientists (53% female, age range 22-40). The results of the survey and the supervisor responses to a separate questionnaire were collated and grouped into common themes e.g. measurement-based, modelling-based, exchange processes, ecosystem impacts etc. Respondents listed 16 specific training activities in which they would be interested in participating. These suggested activities were fairly equally spread between training in modelling and measurement techniques. Many of the specific training needs identified by the young scientists were also identified by the supervisors/managers, suggesting good communication between them and/or a coherent understanding of their role in ÉCLAIRE. See Deliverable D23.1 (ÉCLAIRE Training plan) for a detailed analysis of the survey results.

The Training Plan developed from the survey results provides the basis for the training activities to be carried out throughout the project. These activities will take the form of a Summer School to be held in Year 2 (see Task 23.2), as well as an additional ecosystem modelling course (to be confirmed). In order to be aware of additional training needs that may arise during the course of the project, a training request form has been added to the ‘Training’ section of the project website. The WP coordinator (Mark Theobald) has also been involved in the coordination of the Young Scientists’ Forum in order to be in direct contact with ÉCLAIRE young scientists and publicise training activities via the online forum and has also been in touch with other organisations (COST ES0804, iLEAPS, AlterNet, PEGASOS) in order to discuss synergies between training needs of ÉCLAIRE and these other organisations.

### Task 23.2: Organisation of Summer Schools and dedicated workshops

A common theme running through the young scientists’ suggestions of topics for a Summer School was the measurement and modelling of exchange processes and so this has been established as the core theme for the Year 2 Summer School. This core theme will be coupled with an analysis of up-scaling effects (plant, canopy, ecosystem, landscape, region, country, Europe, global) and advanced statistical analysis to cover two of the other identified training needs.

Following an open call for Summer School hosts in Month 12, INRA Thiverval-Grignon (France) was selected to host the activity. A concept for the Summer School was developed jointly with them and was submitted in Month 15 (Deliverable D23.5).

The Summer School will be entitled “Measurement and modelling of biosphere-atmosphere exchanges of trace gases and aerosols” and the suggested programme is shown in Table 1. The Summer School

will be held in Paris between the 2<sup>nd</sup> and 12<sup>th</sup> July and registration was opened to those interested in participating on 6 May 2013.

Table 1: Suggested programme for the ÉCLAIRE Summer School

Modules	Sessions	Type
<b>1. Modelling soil-plant-atmosphere exchange of reactive trace gases</b>	a) Basic theory (turbulent transfer, resistance analogy, stomatal and boundary layer resistances)	Theory
	b) Experience with a SVAT model: the Surfalm-O <sub>3</sub> model	Practical class using data from 2a
	c) Modelling NH <sub>3</sub> emissions from soils and slurry. The SAVA model for NH <sub>3</sub>	Practical class
<b>2. Advanced techniques in soil-plant-atmosphere exchange of reactive trace gases</b>	a) NO <sub>x</sub> and O <sub>3</sub> eddy covariance flux measurement	Lab and field work to provide data for 1b
	b) NH <sub>3</sub> volatilisation measurements by inverse modelling	Practical class
	c) Aerosol particle flux measurements	Lab and field work
<b>3. Ecosystem functioning with emphasis on nitrogen and ozone</b>	a) Ecosystem functioning, plant physiology and ozone impacts (Course)	Theory
	b) Modelling crops and nitrogen at the country scale (CERES-EGC)	Practical class
	c) Experience with another model from the ÉCLAIRE Community (e.g. Orchidee)	Practical class
<b>4. Pollutants and GHG exchanges at several scales and validation methods</b>	a) Modelling N transfer at the landscape scale	Theory
	b) Measuring NH <sub>3</sub> with badges at the landscape scale	Lab and field work
	c) Monitoring methods for NO <sub>x</sub> , O <sub>3</sub> , SO <sub>2</sub> , NH <sub>3</sub> , VOCs, aerosols (NEU methodology)	Theory + data analysis
<b>5. Introduction to statistical methods</b>	a) Basics statistics (course)	Theory
	b) Statistical methods for data analysis (course)	Theory
	c) Statistical method for model evaluation	Theory + practical

The Summer School will be held during the dates 1-12 July 2013 for a maximum of 40 students. See Deliverable D23.5 (Concept for the Summer School) for more details of the Summer School programme and funding.

#### 4. Milestones achieved:

The Table below shows the planned milestones for the first reporting period and the month each milestone was reached.

Milestone	Description	Month Planned	Month Reached
MS118	ÉCLAIRE Training plan adopted	7	10
MS119	Concept for an ÉCLAIRE Summer School in year 2 adopted for implementation	13	16

**5. Deviations and reasons:**

The completion of the Training Plan and the concept for the Summer School were delayed by approximately 3 months. This delay was partially due to the completion and defence of the coordinators PhD and partially due to delays setting up the Young Scientists' Forum page on the project website, from where the young scientists' survey was coordinated. Although the delay is regrettable it is not expected to have any adverse effects on subsequent milestones or the planning of the ÉCLAIRE Summer School

**6. Publications:**

No publications have arisen from this deliverable.

**7. Meetings:**

No meetings were necessary for this deliverable since all discussions were carried out through email exchanges.

**8. List of Documents/Annexes:**

None