

## Transnational integrated management of water resources in agriculture for the EUROPEAN WATER emergency control

### TRANSNATIONAL CAPACITY BUILDING TRAINING: COURSE CONTENTS AND ACTIVITIES Ferrara, 11 - 16 July 2011

<b>Sunday</b> 10/06/2011	<b>Arrival in Ferrara and accommodation in hotels</b> (B&B "Il Fluviale": <a href="http://www.fluviale.it/site/modules/tinyd0/">http://www.fluviale.it/site/modules/tinyd0/</a> , Hotel "San Paolo": <a href="http://www.hotelsanpaolo.eu/it/home.php">http://www.hotelsanpaolo.eu/it/home.php</a> )	
19:00-20:30	Welcoming drink in the city center (meeting point in front of the Cathedral – see map)	
<b>Monday</b> 11/06/2011	<b>Group A: Lab and field activities</b>	<b>Group B: GIS course</b>
09:00-11.00	Registration of participants and distribution of the CBT materials (Aula GSL) Welcome by the Lead Partner, Province of Ferrara Lecture 1: The case study of the Ferrara Province	
11:00-11.30	- Coffee break - (Aula R)	
11:30-12:30	Introduction to the Capacity Building Training (CBT) structure and contents (Aula GSL): - organization of the lectures, the of lab activities and of the site visits - brief overview of the topics covered by the two sections ( <i>groups A and B</i> ) - logistic information	
12:30-13:30	- Lunch - (Pacifico Bar & Restaurant)	
13:30-15:00	- Lecture 2A: Monitoring devices (Aula 406)	Lecture 2B: Assessment of the intrinsic vulnerability of agricultural land to water losses, via deterministic approach and regression analysis (Aula GSL)
15:00-15:30	- Coffee break - (Aula R)	
15:30-17:00	- Lecture 3A: Sampling techniques (Aula 406)	Lecture 3B: Assessment of the intrinsic vulnerability of agricultural land to nitrogen losses, via deterministic approach and regression analysis (Aula GSL)
<b>Tuesday</b> 12/07/2011	<b>Group A: Lab and field activities</b>	<b>Group B: GIS course (Aula GSL)</b>
09:00-10:30	- Visit to the Navarra (NAV) field site: Slug test and pumping tests to gain Ks	- Lecture 4B: The role of the hydraulic conductivity (Ks) distribution and of the slope



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10:30-11:00		- Coffee break - (Aula R)
11:00-12:30		- Lecture 5B: Rainfall, irrigation and meteorological parameters to determine the effective evapotranspiration (EVT)
12:30-13:30	- Lunch - (Pacifico Bar & Restaurant)	
13:30-15:00	- Exercise 1A: Calculation of the OM% via Loss of Ignition (LOI) in the Sedimentology Lab.	- Exercise 1B: Calculation of Ks and slope
15:00-15:30	- Coffee break - (Aula R)	
15:30-17:00	- Exercise 2A: Calculation of the grain size distribution in the Sedimentology Lab.	- Exercise 2B: Calculation of EVT

<b>Wednesday 13/07/2011</b>	<b>Group A: Lab and field activities</b>	<b>Group B: GIS course</b>
09:00-10:30	- Exercise 3A: Calculation of the Ks via direct and indirect approaches (Aula 406)	- Exercise 3B: Calculation of the annual losses of the percolated water beneath the root zone (LOSW-P) (Aula GSL)
10:30-11:00	- Coffee break - (Aula R)	
11:00-12:30	- Exercise 4A: Calculation of the Partitioning Coefficient of organic compound (Kd) and of the Cation Exchange Capacity (CEC) (Aula 406)	- Exercise 4B: Calculation of the annual losses of the surface runoff (LOSW-R) (Aula GSL)
12:30-13:30	- Lunch - (Pacifico Bar & Restaurant)	
13:30-17:00	Visit to Cocomaro di Focomorto (CCR) field site	

<b>Thursday 14/07/2011</b>	<b>Group A: Lab and field activities</b>	<b>Group B: GIS course (Aula GSL)</b>
09:00-10:30	- Exercise 5A: Calculation of the Matric Potential and of the Retention Curve (Aula 406)	- Lecture 6B: The role of the organic matter content (OM%) in determining the percolation rate of the Nitrogen species
10:30-11:00	- Coffee break - (Aula R)	
11:00-12:30	- Exercise 6A: Calculation of the potential	- Lecture 7B: Intrinsic Vulnerability Mapping VS



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	and effective evapotranspiration and of the recharge rate (Aula 406)	Risk Assessment Calculation
12:30-13:30	- Lunch - ( <i>Pacifico Bar &amp; Restaurant</i> )	
13:30-15:00	- Visit to the Biochemistry Lab.: Applications of the ion selective electrode (ISE) and of the Autoanalyzer	- Exercise 5B: Calculation of the OM% and of the fertilizer distribution
15:00-15:30		- Coffee break - ( <i>Aula R</i> )
15:30-17:00		- Exercise 6B: Calculation of the annual losses of the nitrogen leaching beneath the root zone (LOSN-PN)

<b>Friday 15/07/2011</b>	<b>Group A: Lab and field activities</b>	<b>Group B: GIS course (Aula GSL)</b>
09:00-10:30	- Visit to the Ion Chromatography Lab.: Analysis of major ions and organic acids	- Exercise 7B: Calculation of the annual losses of nitrogen through the surface runoff (LOSN-RN) - comparison of results
10:30-11:00	- Coffee break - ( <i>Aula R</i> )	
11:00-12:30	- Visit to the Ion Chromatography Lab.: Analysis of major ions and organic acids ( <i>continued</i> )	- Exercise 8B: Calculation of the nitrogen concentration of the percolated water under the root zone (CPW) and of the nitrogen concentration of the runoff water (CRW)
12:30-13:30	- Lunch - ( <i>Pacifico Bar &amp; Restaurant</i> )	
13:30-15:00	- Exercise 7A: Calculation of the profile concentrations of the dissolved species in the CCR site (Aula 406)	- Comparison and debate of results among partners
15:00-15:30	- Coffee break - ( <i>Aula R</i> )	
15:30-17:00	- Exercise 8A: Calculation of the Nitrate degradation rate for the CCR site (Aula 406)	- Comparison and debate of results among partners ( <i>continued</i> )

<b>Saturday 16/07/2011</b>	<b>Study Visit in the countryside of the Ferrara Province</b>	
09:00	Meeting at the hotels and departure	
12:20-14:00	- Lunch -	
17.00	Return to the hotels	



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### LOCATION OF AULAE AND LABS

**Instructors' Room:** Earth Sciences Dept.- Via G. Saragat, 1 – Block B, IV Floor, Room n° 406;

**Aula R:** Earth Sciences Dept.- Via G. Saragat, 1 – Block B, IV Floor;

**Aula GSL:** Earth Sciences Dept.- Via G. Saragat, 1 - Block B, IV Floor, Room n° 409/410;

**Ion Chromatography Lab:** Earth Sciences Dept.- Via G. Saragat, 1 - Block B, I Floor, Room n° 112;

**Sedimentology Lab:** Earth Sciences Dept.- Via G. Saragat, 1 - Block F, I Floor;

**Biochemistry Lab:** Biology and Evolution Dept.- Via L. Borsari, 46;



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