



# porto di ravenna

il porto dell'Emilia Romagna

## WaCoMa

WATER AND COASTAL MANAGEMENT

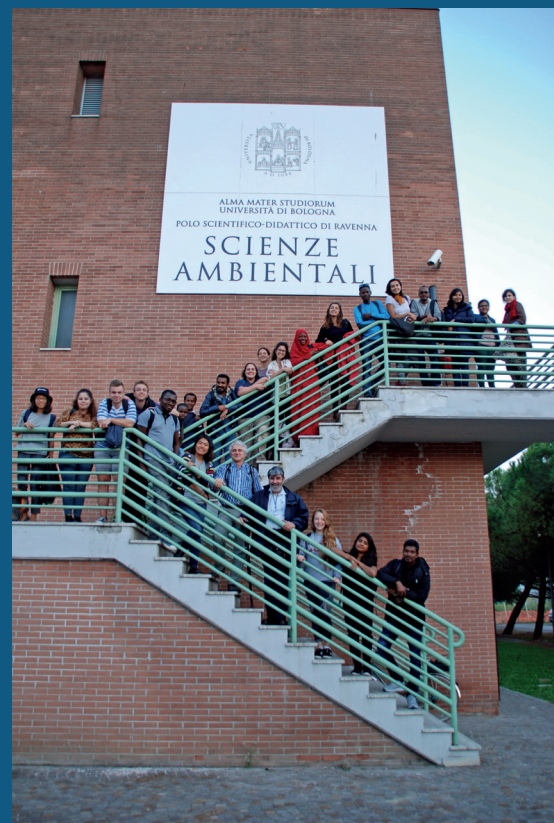
### Arrivano da Ravenna i super manager per la gestione delle coste

Primo traguardo per l'unico master internazionale in Europa per la gestione degli ambienti marini costieri e lagunari, promosso nella città romagnola dal dipartimento di Scienze Biologiche, Geologiche e Ambientali dell'Università di Bologna. A due anni dalla nascita, si laureano i primi 21 studenti, provenienti da tutto il mondo.

Promosso a Ravenna dal dipartimento di Scienze Biologiche, Geologiche e Ambientali (BiGeA) dell'Università di Bologna, è l'unico master internazionale Erasmus Mundus in Europa per la formazione di specialisti nella gestione degli ambienti marini costieri e delle aree lagunari. Ed è un punto di riferimento nel mondo per tutti gli studenti che vogliono acquisire le competenze necessarie a prevenire o mitigare i rischi correlati ai cambiamenti climatici. Ora WaCoMa – Water and Coastal Management – a due anni dalla nascita taglia un importante traguardo, con il conseguimento della laurea, il 20 giugno, dei primi 21 studenti, provenienti da 16 Paesi diversi, tra Africa, Nuova Zelanda, Asia, Europa, Sudamerica.

La rigida selezione all'ingresso premia, oltre al massimo dei voti ottenuti nelle varie università internazionali, l'ottima conoscenza della lingua inglese, forti motivazioni e la piena disponibilità alla mobilità e a trascorrere diversi mesi in Portogallo e in Spagna, nelle Università di Algarve e di Cadice, atenei partner dell'Alma Mater. Condizioni che spesso dissuadono i giovani italiani, nonostante una laurea Erasmus Mundus apra diversi sbocchi professionali in enti pubblici e privati e nei centri di ricerca internazionali o anche una promettente libera professione. La Commissione Europea attraverso una selezione molto rigorosa garantisce che i programmi Erasmus Mundus siano di qualità eccellente, innovativi e su tematiche di riconosciuta importanza internazionale. L'Erasmus Mundus è un marchio riconosciuto nel mondo. Chi si diploma in una Magistrale Erasmus Mundus associa alla laurea il bollino di eccellenza. Forse in Italia non è conosciuto e apprezzato come dovrebbe, ma questa è la realtà nel mondo. Su queste basi naturalmente i programmi Erasmus Mundus attraggono i migliori studenti d'Europa e del mondo a loro volta, pur se non è secondario il fatto che viene conferita ad ogni studente una borsa di studio di quasi 50.000 euro, comprensiva dello stipendio per 24 mesi, delle tasse di iscrizione universitaria e dei fondi di mobilità per spostarsi tra i diversi Paesi. Il motivo è che i migliori altrimenti verrebbero selezionati da altre Università, tipicamente americane, che offrono borse di studio ai top-students.

“I programmi Erasmus Mundus non hanno confronti nel permettere agli studenti di studiare e vivere insieme a studenti di altri Paesi del mondo - riferisce la Coordinatrice, professoressa Elena Fabbri - ma anche ai docenti di viaggiare nelle diverse istituzioni e costruire una rete di rapporti molto utili per il futuro professionale. Il cuore dei programmi Erasmus Mundus è proprio quello di promuovere scambi e condividere conoscenze, e promuovere l'Unione Europea come centro di eccellenza per la formazione nel mondo. Per WaCoMa si parla di figure professionali specializzate alle quali offriamo un percorso multidisciplinare che consente di diventare manager dell'ambiente costiero e lagunare capaci di prendere decisioni importanti, come valutare se è possibile realizzare un parco naturale o costruire alberghi, o prendere decisioni sulla residenzialità in aree esposte al rischio di innalzamento del livello marino”. Attualmente gli studenti iscritti al Master Erasmus Mundus WaCoMa sono 63. Tra loro 33 ragazze e 30 ragazzi, provenienti da 33 Paesi.



### FABBRI: “PROPOSTE DI LAVORO ANCOR PRIMA DELLA LAUREA”



La Coordinatrice Europea di WaCoMa è la Professoressa Elena Fabbri, ordinario di Fisiologia, attualmente anche Presidente del Campus di Ravenna. Insegna a Scienze Ambientali a Ravenna da 20 anni.

Crede nelle esperienze internazionali per la didattica e la ricerca, e da molti anni è coinvolta in Progetti Erasmus Mundus di Master e Dottorato. Le coordinatrici dell'Università di Algarve e di Cadice sono rispettivamente la Prof. Alice Newton (Oceanografa chimica) e la Prof. Irene Laiz (Oceanografa fisica). Un team di donne alla guida, quindi, coadiuvato dallo staff amministrativo internazionale del Campus di Ravenna, Daniela Farinelli e Giovanni Tardino, e dalla Tutor per gli studenti Filomena Volpe.

**Soddisfazioni?** Molte, intanto per aver avuto studenti estremamente motivati. Ma anche per i risultati raggiunti che in alcuni casi, ancor prima della laurea, si sono già concretizzati in opportunità di lavoro o di Dottorato.

**Rimpianti?** La risposta è scontata, i tre mesi di emergenza COVID. Avevamo 7 studenti a Ravenna, e gli altri erano divisi tra Cadice e Algarve. Tuttavia i ragazzi erano in tesi o in tirocinio, e purtroppo hanno dovuto ripiegare su attività in remoto. Devo ringraziare gli Enti e le Società e i laboratori dell'Università che li ospitavano di avercelo permesso, senza interrompere il percorso. Abbiamo seguito la pandemia, quando era soprattutto in Italia e poi la preoccupazione si è trasferita in Spagna e Portogallo. Nel nostro piccolo abbiamo trasferito le nostre conoscenze maturate sul COVID e soprattutto la raccomandazione a “stare a casa”. Nessuno dei ragazzi WaCoMa si è ammalato, mi sembra un miracolo. Eravamo molto preoccupati.



# >>>>>>>>> CHE COS'È WaCoMa

Il Master è riconosciuto dall'Unione Europea come progetto strategico per la gestione dell'ambiente costiero ed è finanziato con tre milioni di euro.

Agli studenti borse di studio di mille euro al mese per due anni, e i fondi per le mobilità.

Tra i requisiti per essere ammessi, una laurea in campo ambientale con il massimo dei voti

WaCoMa è un programma didattico internazionale finanziato dalla Commissione Europea che con la più prestigiosa 'etichetta' europea, quella di 'Erasmus Mundus' permette di conseguire un titolo di studio di grande valore sul mercato del lavoro europeo e internazionale. Nel sistema italiano è una Laurea Magistrale, quindi un corso di due anni. È stato approvato dalla UE nel 2017 come unico per l'argomento trattato e naturalmente per la qualità della proposta e dei suoi proponenti.

Gli studi sono indirizzati alla gestione dell'ambiente marino costiero, incluse le acque dolci che arrivano al mare, nella prospettiva dei rischi ambientali. Tocca il tema dei cambiamenti climatici e l'uso delle risorse, i concetti di mitigazione e adattamento, e l'economia sostenibile. Integra le scienze marine e ambientali all'interno di un programma didattico avanzato, e nello stesso tempo promuove lo scambio di informazioni attraverso un coinvolgimento dei professionisti del settore.

La gestione degli ambienti marini e di acqua dolce, come tutti i sistemi di interfaccia, deve essere condotta attraverso la integrazione di strategie all'avanguardia. Un futuro manager di alto profilo, come saranno i laureati WaCoMa, deve conoscere aspetti tecnici innovativi e quelli teorici avanzati e ancor più padroneggiare la loro integrazione. WaCoMa crea manager o scienziati esperti di gestione del rischio associato agli ambienti costieri, con una solida conoscenza dell'ambiente, dell'analisi dati e della trasformazione in informazioni, nonché degli strumenti legali a supporto.

Gli studenti sono chiamati a risolvere problemi pratici di gestione, a livello costiero, lagunare, di porto o aree marine, così come a paragonare le diverse soluzioni adottabili.

WaCoMa è coordinato dall'Università di Bologna, a Ravenna, insieme alle Università di Cadice (Spagna) e dell'Algarve (Faro, Portogallo); conferisce sia la Laurea dell'Università di Bologna che un Joint Degree internazionale. Il programma è svolto anche in collaborazione con partner tra cui 7 Università Internazionali e 11 partner non accademici: il Ministero della scienza, tecnologia, innovazione e comunicazione (Brasile); il Consiglio Superiore di Ricerca Scientifica (Spagna), ARPAE, la Regione Emilia Romagna (Italia), il Comune di Ravenna (Italia), Aziende private come Lighthouse (Italia); Techno (Italia), MarAlgarve e Sagres (Portogallo), TecnoAmbiente (Spagna). Tutti questi partner hanno collaborato per seminari, tirocini e le tesi. La parte di disseminazione e promozione è curata dalla Fondazione Flaminia (Ravenna, Italia).

Gli studenti che si stanno laureando sono arrivati a Ravenna nel settembre 2018, ricevuti dal Rettore Prof. Francesco Ubertini a cui hanno presentato uno ad uno la provenienza, gli studi compiuti e la motivazione a vivere due anni lontano da casa perseguendo la laurea Erasmus Mundus WaCoMa. È stato un incontro indimenticabile con il Rettore dell'Università di Bologna, hanno scritto i ragazzi su Facebook a suo tempo, una Università nota in tutto il mondo per la sua storia millenaria e di prestigio. Nel primo semestre 2018-19 hanno vissuto e studiato a Ravenna, seguiti da Professori dei corsi di Scienze Ambientali che a Ravenna hanno una sede storica. Per molti di loro è stata un'esperienza di vita, provenendo da Paesi con usanze e lingue molto diverse. Ragazzi con un background culturale molto importante, ma per alcuni già l'indirizzo con la via e il numero di casa era una novità.

A Febbraio 2019 si sono trasferiti a Faro, presso l'Università dell'Algarve. Una città su una laguna, con l'Atlantico raggiungibile a piedi. Sono rimasti due settimane, in cui hanno affrontato un corso intensivo teorico-pratico sulla gestione della zona costiera. Poi si sono trasferiti a Cadice, altra città di mare con un Campus universitario molto bello, moderno e funzionale. Quindi, già nel primo anno hanno fatto l'esperienza di visitare tre Paesi diversi. Per il secondo anno, gli studenti hanno scelto una delle tre università - e quindi dei tre Paesi - per l'anno di tesi e tirocinio. E adesso, dopo aver conosciuto diverse culture e qualcuno anche aver imparato tre lingue straniere, si laureano.

Un'esperienza apprezzata da tutti è stata quella del tirocinio, 200 ore di lavoro presso Enti, Aziende, Società, etc. In Italia hanno lavorato presso i partner di WaCoMa; ad esempio, tre di loro hanno lavorato su tematiche differenti presso ArpaE sia a Ravenna che a Bologna, uffici Ambiente del Comune di Ravenna, la società internazionale Lighthouse di Bologna con tecnologia dell'Oil and Gas, l'Autorità Portuale di Ravenna, lo studio Green.tech di Bologna e Ravenna, la società di ingegneria per l'ambiente e la sicurezza Zoppellari Gollini & Associati pure con sede a Bologna e Ravenna.





# >>>>> “Affrontiamo tematiche di ampio interesse anche a livello globale”



Sono attualmente una ricercatrice presso il Dipartimento di Scienze Biologiche, Geologiche ed Ambientali (BiGeA) dell'Università di Bologna. Il mare, le spiagge, la costa sono stati da sempre i miei luoghi preferiti e oggi ne ho fatto il mio lavoro. Svolgo le mie ricerche nell'ambito dell'idrogeologia e della geochimica; i miei interessi di ricerca sono legati soprattutto alle problematiche della zona costiera: salinizzazione di suolo e acqua, subsidenza, erosione costiera, recupero e ripristino delle dune, monitoraggio ambientale delle acque superficiali e sotterranee. Negli ultimi anni mi sono dedicata molto ai temi della gestione integrata delle zone costiere e delle risorse idriche.

Laureata nel 2003 in Scienze Ambientali Indirizzo Marino con una tesi sulla geomorfologia dei sistemi dunosi applicando un modello di simulazione del trasporto di sabbia lungo la spiaggia emersa, ho poi fatto un dottorato di ricerca sempre in Scienze Ambientali (Tutela e gestione delle risorse naturali) a Bologna sul tema dell'evoluzione idrologica ed idrogeologica delle pinete ravennati.

Ho sempre cercato di coniugare la mia grande passione per i viaggi con la formazione accademica e le diverse esperienze lavorative degli ultimi 15 anni. Ho quindi avuto diverse esperienze all'estero più o meno lunghe: Barcellona, con una borsa di studio per l'approfondimento della tesi all'estero presso l'Università di Geologia; Utrecht con una borsa di studio 'Marco Polo' vinta durante il PhD e svolta presso il TNO, l'Istituto olandese per la ricerca scientifica applicata, dove ho avuto la possibilità di lavorare a fianco dei migliori idrogeologici a livello europeo e mondiale e specializzarmi sull'applicazione di modelli numerici di flusso e di trasporto dei soluti in acquifero. Ma l'esperienza più bella e formativa è stata senza dubbio l'Australia. Dopo il dottorato ho partecipato e vinto un posto da ricercatore associato presso la School of Biological, Earth and Environmental Sciences dell'Università del New South Wales a Sydney, dove ho trascorso 3 bellissimi anni, dal 2007 al 2010. Catapultata in un altro mondo (emisfero, sarebbe meglio dire), mi sono ritrovata a lavorare con un gruppo di ricerca multidisciplinare sul tema della gestione della risorsa acqua. Il mio compito era quello di sviluppare dei modelli geologici 3D e implementare dei modelli di simulazione di flusso a supporto della gestione delle acque superficiali e sotterranee in diversi bacini idrografici del New South Wales. Era un progetto finanziato dal National Water Commission, l'ente nazionale australiano per la gestione delle acque, in collaborazione con diverse Autorità di Bacino. È stato un periodo impegnativo ma molto stimolante e ricco di soddisfazioni, che mi ha fatto crescere dal punto di vista professionale ma forse più da quello personale.

Credo che le difficoltà incontrate siano molto simili a quelle che gli studenti WaCoMa vivono quando iniziano la loro avventura, soprattutto nel primo anno del programma che li vede spostarsi e cambiare 3 Paesi in meno di 12 mesi: lingua, cibo, abitudini, ansie, malinconia di casa e dei propri cari, dubbi, paura di non essere all'altezza. In un paese straniero, lontano da casa e dalla propria 'zona di comfort', anche la più piccola azione (aprire un conto in banca, capire come muoversi con i mezzi pubblici, trovare il cibo che si desidera, etc.) può risultare un problema o comunque una fonte di stress. Se a questo si aggiungono poi il lavoro, lo studio e gli esami, si riesce a capire lo spasamento che si intravede negli occhi di alcuni ragazzi appena arrivati. L'aver vissuto in prima persona queste emozioni spiega la mia vicinanza a tutti gli studenti WaCoMa che si sono succeduti in questi ultimi 2 anni. Riconosco nei loro occhi lo smarrimento dei primi giorni per poi rimanere sempre affascinata dalla loro resilienza, da questa inesorabile capacità di riorganizzare la propria vita e far fronte alle difficoltà. Ed è sempre molto malinconico salutarli a gennaio.

All'università insegno Idrologia ambientale (modulo di geochimica) al corso di laurea magistrale di Analisi e Gestione dell'Ambiente, mentre nel Programma WaCoMa insegno due curricula: 'Gestione Integrata delle Zone Costiere' e 'Tecnologie avanzate e Sistemi di Supporto alle Decisioni (DSS) nella gestione del rischio idraulico e costiero', in collaborazione rispettivamente con la Regione Emilia-Romagna - Servizio Difesa del suolo, costa e bonifica (Dott. Roberto Montanari) e il Servizio Idro Meteo Clima di Arpa (Dott. Andrea Valentini).

Fra gli studenti WaCoMa della I coorte (2018-19) che si laureeranno a luglio 2020 sono relatore di 2 e co-relatore di altri 3. Le tematiche affrontate sono tutte legate al nostro territorio (cambiamento dell'uso del suolo, drenaggio, subsidenza, rischio idrogeologico, salinizzazione degli acquiferi, erosione costiera, mareggiate), ma di ampio interesse anche a livello globale perché legate alle zone costiere e ai previsti cambiamenti climatici. Tutto ciò ha visto la collaborazione con enti istituzionali quali la Regione Emilia-Romagna, Arpa, e il Consorzio di Bonifica che, oltre a partecipare come relatori e/o co-relatori nei diversi lavori di tesi, hanno messo a disposizione le loro competenze professionali per seminari, lezioni e uscite didattiche, e hanno ospitato gli studenti tirocinanti.

Il programma WaCoMa è un'esperienza professionale unica, stimolante e ricca di soddisfazioni che ha permesso di collaborare con diverse università nazionali e straniere e con gli enti locali che si occupano della gestione del nostro territorio. L'aspetto umano rimane comunque quello più gratificante. Un ringraziamento smisurato va alla Prof.ssa Elena Fabbri che, con la sua esperienza e gentilezza, mi ha sempre sostenuto e appoggiato in questo percorso... non si smette mai di imparare!

Beatrice Maria Sole Giambastiani







## Voglio acquisire le migliori conoscenze e tornare in Sri Lanka per proporre soluzioni contro l'inquinamento del mare



### GUNAALAN KUDDITHAMBY

Il problema delle microplastiche nell'ambiente marino è emerso in tutta la sua grandezza, a maggior ragione perché la conoscenza delle sue conseguenze è molto scarsa. Io, Gunaalan Kuddithamby, sono molto sensibile alle sfide blu anche per il mio Paese di origine, Sri Lanka, l'isola perla dell'Oceano Indiano. Ironicamente anche nel mio Paese l'inquinamento delle acque da plastiche non è studiato in maniera approfondita né si investe sulla gestione dello smaltimento delle plastiche. Come lecturer del Dipartimento di Scienza della Pesca, Università di Jaffna, Sri Lanka, ho una grande motivazione ad imparare quali sono i reali problemi dell'inquinamento delle plastiche in mare, voglio affrontare il loro impatto e tornare nel mio Paese dopo gli studi in Europa con le conoscenze giuste per trovare soluzioni.

Il Master Erasmus Mundus WaCoMa ha fornito un solido sviluppo professionale che ha fornito le occasioni di costruire network e ponti fra i differenti esperti nelle diverse parti del mondo nel campo della gestione dell'ambiente

marino costiero. I corsi di WaCoMa sono stati svolti in 3 università di elevata reputazione, Bologna, Algarve e Cadice.

Io ho scelto l'Università di Bologna per il secondo anno dei miei studi. È un mio grande privilegio aver studiato nella più antica università del mondo, fondata nel 1088, dove ho lavorato per la mia tesi sugli impatti degli additivi rilasciati dalle plastiche sui mitili usati come sentinelle ambientali. Sono onorato di essere studente della Professoressa Elena Fabbri, mia relatrice di tesi, Presidente del Campus di Ravenna, ma anche studiosa degli effetti dell'inquinamento sugli animali acquatici riconosciuta a livello internazionale.

Ho lavorato in laboratorio con il Dr. Marco Capolupo che mi ha guidato nella ricerca in maniera eccellente. Inoltre, ho lavorato 200 ore per il tirocinio ad Arpa Emilia Romagna presso la sede di Ravenna sotto la guida del Dr. Fabrizio Bandini. Ho imparato una serie di test di tossicità acquatica usati secondo la legislazione italiana ed europea, ed è stata una esperienza scientifica e umana che non dimenticherò mai.

Quanto ho imparato in WaCoMa e all'Arpa mi ha dato incoraggiamento durante la scrittura della tesi, ed entusiasmo e convinzione nell'affrontare il concorso per un posto di dottorato alla Technical University of Denmark (DTU). Dopo una valutazione sui titoli, ho sostenuto due colloqui orali successivi e finalmente ho avuto il posto! In conclusione, la mia cultura scientifica si è arricchita immensamente, e la ricompensa a questo lungo tempo all'estero sarà tornare nel mio Paese con robuste capacità per dare un contributo ai futuri studenti universitari a cui vorrei insegnare l'importanza della qualità dell'ambiente marino costiero e della gestione dei suoi problemi.

## Il mio sogno è diventare un professore universitario



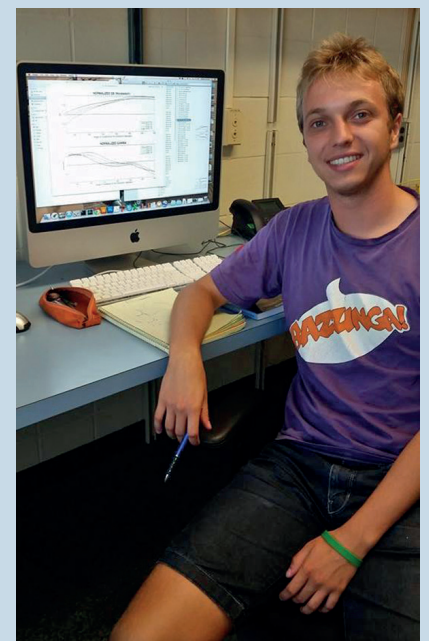
### LUIS GERMANO BIOLCHI

La mia laurea triennale è stata in Oceanologia, presso la FURG (Università Federale di Rio Grande, in Brasile), considerata una delle lauree migliori del Sud America su questi temi. Ho ottenuto una borsa di studio per studiare negli Stati Uniti (Montclair State University - MSU), Montclair-NJ, USA nel semestre autunnale 2014 e quello primaverile 2015. Alla MSU non c'era una laurea in Oceanografia e quindi durante quei mesi mi sono orientato alle Geoscienze, cogliendo l'opportunità di lavorare per la prima volta sull'evoluzione delle coste.

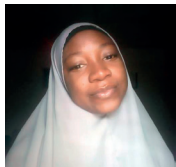
Da Maggio ad Agosto 2015 sono stato studente ospite al dipartimento di Geologia e Geofisica del Woods Hole Oceanographic Institution (WHOI) - MA, USA dove ho usato strumenti di modellistica avanzata per studiare il trasporto di sedimenti lungo la costa orientale degli Stati Uniti. Poi ho iniziato il biennio di master alla Universidade Federal do Rio Grande do Sul (UFRGS) sviluppando la tesi al Centro studi in geologia marina e costiera (CECO). Studiare in 2 differenti università brasiliane, fra le migliori, e in differenti istituzioni negli USA mi ha reso consapevole delle mie conoscenze in merito ai processi costieri, già al centro del mio futuro scientifico. Comunque, ancora durante la scuola superiore io desideravo diventare un professore universitario, per insegnare e fare ricerca nello stesso tempo. Dopo che il governo brasiliano ha cominciato a tagliare i fondi che in precedenza aveva dedicato alla scienza, dovevo cercarmi opportunità all'estero per specializzarmi e poi tornare in Brasile con nuove idee, metodi ed energie per affrontare i problemi sociali, economici e scientifici del mio Paese. La possibilità di avere una borsa di studio era l'unico modo per poterlo fare, e l'Erasmus Mundus WaCoMa - suggeritomi da un mio professore alla UFRGS - era la migliore opportunità che mi poteva capitare. Ho subito fatto domanda e ho avuto una delle borse di studio disponibili. Dopo la grande esperienza di studiare in 3 differenti università nel primo anno (Bologna al Ravenna Campus, Algarve e Cadiz) ho scelto di fare la tesi in una delle più prestigiose e antiche università in Europa, Bologna.

La tesi è stata svolta in collaborazione con il Dott. Andrea Valentini di Arpa su un innovativo sistema di allertamento costiero (Early Warning System - EWS) applicato alle coste dell'Emilia Romagna per la previsione dei fenomeni di ingressione marina dovuta a mareggiate. Devo dire che l'esperienza nell'Erasmus Mundus WaCoMa è stata ancora migliore di quanto potessi sognare. Ho incontrato scienziati eccellenti e ho imparato moltissimo. Adesso, a pochi giorni dalla laurea, ho alcune concrete opportunità di proseguire la mia formazione: presso l'Università, presso Arpa, in Italia e all'estero.

Devo scegliere velocemente: è una sfida, ma ovviamente una soddisfazione immensa.







**Sakinat Mojisola Ahmad**  
Oyo, Nigeria



*Study qualification*  
**Bachelor of Water Resources Management and Hydrology**  
awarded by  
**Federal University of Agriculture, Abeokuta, Nigeria**

My experience abroad has been very enlightening, interesting, full of learning and challenging. Even though the program was intense, I was able to travel to and enjoy some European countries and found a new family (my classmates). The challenges I encountered were: The language barrier, Racial profiling in some airports, Difficulty getting accommodation because of race, And the worst of all, having to go through a pandemic without family or friends. How I overcame them.

For the language barrier, I associated more with people in the University (because they speak English) and less with people outside the university. I also learnt basic Italian and Spanish to help ask about price of goods and directions. For racial profiling, I just ignored and concentrated more on people that were kind to me. As for the pandemic, I spoke more with people I love (family and friends) on the phone and I intentionally avoided reading negative news to help my sanity. A sentence to describe myself "The calm, easy going nature-loving young woman".

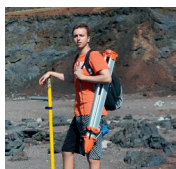


**Asrat Tekle Asresu**  
Axum, Ethiopia



*Study qualification*  
**Master of Arts in Development**  
awarded by  
**Addis Ababa University, Ethiopia**

Getting world class education being the benefit of studying abroad, equally important is the opportunity to discover oneself and the experiences from people with different culture, language and educational background. Settling and socializing to new situations tests your ability to adopt while strengthening your problem-solving aptitude. It was a wonderful experience of discovery, amusements and everlasting friendships.



**Luis Biolchi Germano**  
Porto Alegre, Brazil



*Study qualification*  
**Bachelor Degree in Oceanography/Oceanology**  
awarded by  
**Universidade Federal do Rio Grande (FURG), Brazil**

Living abroad is an invaluable experience that provides us the opportunity to interact with people from a completely different background and share ideas, thoughts and experiences.

Saudade, the Portuguese word used to express our melancholic feelings when we miss someone/something, defines well some difficult moments we go through while studying in another country: saudade of home, saudade of family and friends, saudade of an environment that we know. Europe sometimes looks like a magic cube with so many different colors that is hard to combine them all in just one side; getting to know small pieces in this big context already amazes one due to the cultural and social singularities of each place.



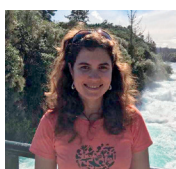
**Addisu Guaddie Dagnew**  
Bahir Dar, Ethiopia



*Study qualification*  
**Bachelor of Science in Water Resource Management**  
awarded by  
**Bahir Dar University, College of Agriculture and Environmental Science**

Studying abroad gives you numerous career advantages and education benefits. It is an opportunity offered me to see the world, and experience a new country with incredible new outlooks, civilization, customs and activities, communication, and cultural awareness.

It is a unique combination of learning and traveling. One of the best parts about studying abroad is the skills I gained because I can use them both in my employment and personal life. Besides the good things, there was a challenge of adapting the weather variability (summer and winter). Am sensitive to this kind of weather. In general, I had a very interesting stay in Italy, Spain and Portugal. I Love it!!!!



**Tegan Rose Blount**  
Auckland, New Zealand

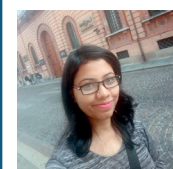
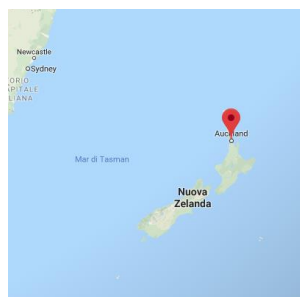


*Study qualification*  
**Bachelor of Art and Engineering (Civil and Environmental)**  
awarded by  
**The University of Auckland, New Zealand**

Gained great friendships and education while broadening horizons.

The logistics of mobility can be challenging but the pay back of living in different countries during the programme is immense.

The experience has been life changing and irreplaceable.



**Masuma Chowdhury**  
Bangladesh



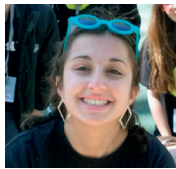
*Study qualification*  
**Bachelor of Science in Environmental Science**  
awarded by  
**Institute of Forestry and Environmental Sciences, University of Chittagong, Bangladesh**

Being a part of WaCoMa is a life changing experience to me both in terms of academic as well as cultural point of view.

I enjoyed a lot through the whole time and feel the essence of different culture from different continents. I felt language was the greatest barrier to communicate the local people and to enjoy European culture, however it was always nice to be surrounded by nice and very supportive friends.





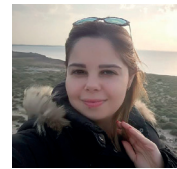


**Ifigeneia Leontini Giannoukakou**  
Athens, Greece



*Study qualification*  
**Bachelor in Marine Sciences**  
awarded by  
**University of the Aegean, Grecia**

During my experience abroad I got to know at first-hand at least one story or fact from each country that my colleagues came from (16 countries, 4 continents!). House hunting was a nightmare in all the four cities that I lived in but with patience, focus, and careful research I always found my way. As to the Programme, being an Erasmus Mundus it was challenging, but I gained a lot! I would summarise as follows: Seize every chance to learn something new and have trust in people around you.



**Rasha Hassan**  
Latakia, Syria



*Study qualification*  
**Master Degree in Environmental Systems Engineering**  
awarded by  
**The Higher Institute of Environmental Research, Tishreen University, Latakia, Siria**

As I ponder deeply through the two years of Wa-CoMa, I can state that it changed everything in and about my life. I had the experience of living in different European cities, making connections with people from different nationalities and attending events in water industry. These facets are key additions to my resume and network. On the other hand, I faced various challenges in many aspects that I had to encounter by developing myself and skills. However, no excellent results can be achieved without challenges.



**Assaye Mehari Kidanemariam**  
Dangla, Ethiopia



*Study qualification*  
**Masters of Science in Water Resources Engineering and Management**  
awarded by  
**Hawassa University, Ethiopia**

Studying in a different country forces me to be more flexible, to new surroundings, and to new people. It is an opportunity to discover myself while gaining an understanding of a different culture. It is also for the chance to experience different styles of education and to meet new lifelong friends from different backgrounds. The only challenge for me was that I am the father of the two children and I always worry about them. This makes me weak in social interaction.



**Maureen Mokeira Kombo**  
Nyamira, Kenya



*Study qualification*  
**Bachelor of Environmental Science**  
awarded by  
**Pwani University, Kenya**

"Fast-forward, two years later in Europe, I can say my experience was GREAT! First having been covered by the Erasmus Mundus scholarship was a privilege. That means I didn't have to stress out myself with tuition fee and maybe going for loans. I had top-notch professors who were caring and ready to help despite the Covid-19 pandemic. As a student, I had moments when I had wanted to pass out from the many overlapping class deadlines, internship and my project but I smoothly coped with the stress by listening to my favourite music, taking walks and exercising. This really worked out for me. Besides, thanks to the beautiful mosaics in Ravenna, the quality tapas, the local Cuban cocktails and the excellent Flamenco in Cádiz, Spain. It made my experience worthwhile."

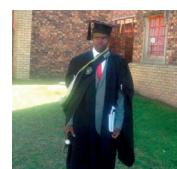


**Heloisa Labella Fonseca**  
San Paolo, Brazil



*Study qualification*  
**Bachelor in Oceanography**  
awarded by  
**University of Paraná, Brazil**

*What do you think you gained from this experience abroad?* On a professional level, I believe that the exchange of experiences and different ways of thinking was one of the best things about this experience.  
*What do you consider where the most difficult challenges faced and how you overcame them (e.g. homesickness)?* For me, the most difficult challenge was mental health. It is a long story, but I only survived and controlled it thanks to my friends who got my back when I could not do it to myself.  
*Maybe one sentence that defines you during this time in the countries we have stayed. Sorry, but I have two quotes from Sense8 and Finding Nemo that together are perfect to summarize my master's experience:* "There's nothing more frightening than having a dream come true. However, when life gets you down, you know what you gotta do? Just keep swimming."



**Patrick Mbethe Sibusiso**  
Lusikisiki, South Africa



*Study qualification*  
**Bachelor of Science**  
awarded by  
**Walter Sisulu University, South Africa**

I can call this a learning process. My experience has been mainly on integrated coastal management with no knowledge on coastal aquifers and marine science and that has changed. I am still grappling with homesickness challenge though and apart that, different cultures and perceptions have been wonderful to observe in EU. Having a dream of obtaining an international qualification in particular with the well-respected institution all over the world, the University of Bologna, one need not look far than Erasmus Mundus Joint Master Degree in Water and Coastal Management (WaCoMa) Scholarship. When I was selected, I became one of the 23 South African student candidate selected all over the world!!





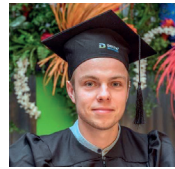


**Thet Oo Mon**  
Falam, Myanmar



*Study qualification*  
**Bachelor of Engineering**  
awarded by  
**Myanmar Maritime University, Myanmar**

The most difficult challenge for me when I first arrived was that I felt I am different from anyone else or any situation around me (you name it culture shock?), and made me a bit uncomfortable, wanting to go back to the familiar environment and routine. In my case, friends and people around me helped the most for me to understand that the differences I have can be sometimes a valuable asset that I can bring to the table as theirs can be the same for me for our mutual growth. I will remember these years as a learning journey with a lot of changes, memories and lessons learnt. What I have learnt most is to be able to better navigate my thoughts and actions through change and to embrace diversity more.



**Lukas Varas**  
Vilnius, Lithuania



*Study qualification*  
**Bachelor of Science**  
awarded by  
**HZ University of Applied Sciences, Olanda**

During WaCoMa I have gained new knowledge, made new friendships and got to do that in three different countries. During these two years learning and experiencing new things have grown me as a person. It was an incredible journey, which I will talk about for years to come.



**Lukman Adeboye Soboyejo**  
Kabba, Nigeria



*Study qualification*  
**Bachelor of Science in Water Resources management and agrometeorology**  
awarded by  
**Federal University of Agriculture, Abeokuta, Nigeria**

First and foremost, studying Water and Coastal Management (WaCoMa) as my second cycle degree is not a nightmare but a dream come true. The academic sojourn of WaCoMa is the best I ever had because of my exposure to multifaceted academic and multicultural events such as experiencing different styles of teaching, enhance networking, learning about new cultures and perspectives, see the world among others. The main challenge for me is how to adapt to a new cold environment and food style which I overcame after several trials. All in all, I am overwhelmed and I strongly believe that the uniqueness of this program will make my talent grow more in the academic and professional sphere.



**Richard Takyi**  
Accra, Ghana



*Study qualification*  
**Master Degree in Fisheries Science**  
awarded by  
**University of Ghana, Ghana**

My perspective with regards to the importance of cities and communities planning have changed for the better. Also, the need to cherish and promotes one's culture and history. My challenge was learning three languages within a 1 year although it was fun at the end. I will describe myself as having fun in all the countries I stayed in.



**Ayesha Siddiqua Asha**  
Tangail, Bangladesh



*Study qualification*  
**Bachelor of Science in Environmental Science and Resource Management**  
awarded by  
**Mawlana Bhashani Science and Technology University**

It was the first time for me to live outside of my country and I got so amused when I arrived in Italy. Beautiful cities, foods, sculptures, natural beauties, and diverse cultures amazed me always. Truly speaking I barely feel homesick after surrounded by all friendly souls. The language barrier is a challenge here but when I discover myself in the edge of the Atlantic I feel like a free bird.



**Gunaalan Kuddithamby**  
Jaffna, Sri Lanka



*Study qualification*  
**Master of Science in Disaster Analysis, Management and Mitigation**  
awarded by  
**University of Colombo, Sri Lanka**

EMJMD WaCoMa gave a powerful professional development experience and provides a platform for the huge network and build bridges between different parts of the globe in the field of water and coastal management. The program designed to focus on different horizons of the field which allows to enhance the scientific knowledge and best management practices of the aquatic environments.







**Thi Bich Hop Hoang**  
Vietnam



*Study qualification*  
**Master in Environmental Sciences**  
awarded by  
**Vietnam National University, Hanoi, Vietnam**

What do you think you gained from this experience abroad? Firstly, I have been gaining more knowledge of my major and social life.

I think I get more independent when I started to live alone. Now, I think I have known how to cook and do housework. What do you consider where the most difficult challenges faced and how you overcame them (e.g. homesickness)?

The language barrier is the most difficulty. It would better to study and live in a place that you can communicate well with local people. I would love to learn more culture and history of countries where I studied but it is really difficult when I could not speak Spanish, Italian, or Portuguese.

My classmates have helped me a lot to lessen the difficulty. Additionally, I am learning these languages.

It is very nice to learn them. Maybe one sentence that defines you during this time in the countries we have stayed. Italy, Spain, and Portugal have given me a great welcome with their people, culture, nature, and architecture.

Because of the disease, it is quite weird in recent months. I got confused at the beginning, but I feel being protected in Faro.



**Júlia Terra Miranda Machado**  
Rio de Janeiro, Brazil



*Study qualification*  
**Bachelor of Environmental Management**  
awarded by  
**IFRJ - Instituto Federal de Educação, Ciência e Tecnologia do Rio de Janeiro, Brazil**

What do you think you gained from this experience abroad? Hi, my name is Júlia Terra and I'm a WaCoMa student from the 2018 year.

During these 2 years of Erasmus Mundus we learned a lot academically and develop our professionalism through a variety of ocean and environmental themes that fulfilled my initial expectations. And I can say that the personal growth goes even beyond.

The exchange of experiences and knowledge between me and my colleagues and teachers from more than 16 different countries was life changing. What do you consider where the most difficult challenges faced and how you overcame them (e.g. homesickness)?

For sure staying these years away from home was very hard many days, even not being my first time abroad but with all excitement provided by the mobility and challenges of this master time flies and now you even miss the fresh starting days.

Although, is clear that building a thesis during a pandemic was not easy at all, becoming even unbearable some days with the high levels of anxiety, the lack of hope and hugs combined with this highly stressful moment.

A moment in which the uncertainties about our future became even greater than they would be in a "normal" scenario of a final master's year.

Fortunately we have internet to keep in touch with our family and friends from before and the ones gained on this journey.

But, most importantly, we all - WaCoMa students, went through these changes together and I'm sure that our union and friendship made going through all these unexpected changes and the high mobility of the programme in a smoother way.

Maybe one sentence that defines you during this time in the countries we have stayed. Embrace who you are while respecting the world's diversity and learning from it, waking up everyday open to constantly build your better self.



**Antara Sen Gupta**  
Ranchi, India



*Study qualification*  
**Bachelor of Technology in Environmental Engineering**  
awarded by  
**Biju Patnaik University of Technology, Odisha, Rourkela, India**

What do you think you gained from this experience abroad? Coming to Europe has always been a childhood dream of mine. This dream of mine got its wings when I got selected for one of the most Prestigious Scholarships "Erasmus Mundus". Coming to Italy all alone from India was one experience on its own, especially for a single girl child of a family going abroad for the first time that too alone. Living in Europe has taught me many things.

I can feel some positive growth in my personality. Learning new language, getting to know new cultures, trying on new cuisines, visiting new places, meeting new people, and interacting with them not only has helped me learn more and gain more experience but has definitely made me a better and stronger person.

After this, I can definitely say that everyone should at least once in life must have such an experience that will help you grow into a better human being with a more positive outlook towards life. What do you consider where the most difficult challenges faced and how you overcame them (e.g. homesickness)?

When staying so far away from one's home totally in a different environment definitely once in a while made me homesick.

he most difficult part is that one really starts to miss their family, especially parents, the food, the comfort of staying at home, this leads to many changes in the behaviour like losing interest in work, becoming less patient and lazy.

For me personally this was not hard for me to deal with since I have previous experience of staying away from my home from the 8 years due to education and other things. But normally in such situations, I try to focus more on my work and keep myself busy, have frequent conversations with my family, try to go out and have more fun and keep my mind away from this and eat whatever I feel like eating. Sometimes, shopping also helps. Maybe one sentence that defines you during this time in the countries we have stayed in. I think one sentence will be too less to define myself for all the times I have stayed in Italy, Portugal and Spain.

Other than becoming more independent, smarter and a better person there is lots of other things too which I have gained through this programme which is very hard to write since one needs to experience by themselves in order to understand this better. All I can say is that I will always consider myself very lucky and privileged to be able to have such a great and unique opportunity because of WaCoMa and I will be forever grateful to my whole WaCoMa cohort for giving me live this experience.



**Il Consorzio WaCoMa finanziato dalla Commissione Europea, con le Università leader di Bologna, Algarve e Cadice, e i 19 Partner: un grande insieme di conoscenze e di applicazioni per la gestione delle coste.**



Co-funded by the  
Erasmus + Programme  
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ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA

EU UNIVERSITY



NON-EU UNIVERSITIES



ASSOCIATED PARTNERS

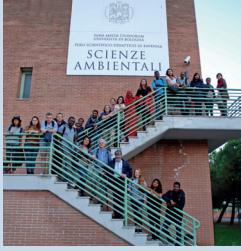




<b>WACOMA 1° ANNO</b>	
<b>1° semestre – Università di Bologna Campus di Ravenna (Italia)</b>	
Idrologia della zona costiera	6 ECTS (Prof. Antonellini)
Gestione Integrata della Zona Costiera	6 ECTS (Prof. Giambastiani, in coll con esperti Regione Emilia Romagna)
Fisiologia applicata all'ambiente: impatti degli inquinanti sulla salute umana e gli ecosistemi	6 ECTS (Proff. Fabbri e Pasteris)
Economia dell'ambiente e gestione del rischio nella politica costiera	6 ECTS (Prof. Ricci, USA)
Tecnologie avanzate e Sistemi di Supporto alle Decisioni (DSS) nella gestione del rischio idraulico e costiero	6 ECTS (Proff. Giambastiani, Valentini, Arpae; Barboza, Brasile)
Febbraio, Università di Algarve (Portogallo): Corso intensivo su tematiche attuali di gestione integrata del rischio costiero	
<b>2° semestre – Università di Cadice (Spagna)</b>	
Analisi chimiche della qualità dell'acqua	Diversi insegnamenti a scelta
Valutazione ecotossicologica del rischio nella gestione costiera e delle acque	Diversi insegnamenti a scelta
Geochimica ambientale	Diversi insegnamenti a scelta
Diritto Ambientale	Diversi insegnamenti a scelta
Biologia degli organismi acquatici	Diversi insegnamenti a scelta
Impatto ambientale e gestione ambientale	Diversi insegnamenti a scelta
<b>WACOMA 2° ANNO</b>	
Tirocinio 200 ore	Partner non accademici
Tesi magistrale	A scelta dello studente (Univ di Bologna, o Algarve o Cadice)
Altri corsi a scelta per completamento dei ECTS	Analisi e integrazione dei dati; Python e Q-GIS; Uso di Droni; Scrittura di articoli/progetti scientifici; Analisi critica della letteratura scientifica

<b>WACOMA 1ST YEAR</b>	
<b>1st SEMESTER (University of Bologna, Campus of Ravenna, Italy)</b>	
Hydrocomplexity of the Coastal Zone	6 ECTS (Prof. Antonellini)
Integrated Coastal Zone Management	6 ECTS (Prof. Giambastiani, in coll with Experts Regione Emilia Romagna)
Physiology applied to the Environment: pollutant impacts on human health and ecosystem	6 ECTS (Prof. Fabbri, Prof. Pasteris)
Environmental Economics and Risk Management in Coastal Policy	6 ECTS (Prof. Ricci, USA)
Advanced technologies and Decision Support Systems in water and coastal Risk Management	6 ECTS (Prof. Giambastiani, Prof. Valentini, Arpae; Prof. Barboza, Brasil)
February, University of Algarve (Faro, Portugal): INTENSIVE THEORETICAL AND PRACTICAL COURSE: HOT TOPICS IN INTEGRATED COASTAL RISK MANAGEMENT (6 ECTS)	
<b>2nd SEMESTER (University of Cadiz, Spain)</b>	
Chemical Analysis of Water Quality	Choice of different teaching courses
Ecotoxicological evaluation of Risk in Water and Coastal Management	Choice of different teaching courses
Environmental Geochemistry	Choice of different teaching courses
Environmental Legislation	Choice of different teaching courses
Biology of aquatic organisms	Choice of different teaching courses
Environmental Impact and Management	Choice of different teaching courses
<b>WACOMA 2ND YEAR</b>	
Internship (200 hours)	Non Accademic Partners
Master Thesis	Student's choice (Univ Bologna or Algarve or Cadiz)
Further teaching courses at the student's choice for completing the 120 ECTS	Data analysis and intergration; Python and Q-GIS; Drone use; Writing of scientific papers/proposals; critical analysis of scientific literature, etc.





### THE SUPER MANAGERS OF THE COASTAL AREA ARRIVE FROM RAVENNA

First milestone for WaCoMa, the only international master in Europe for the management of coastal marine and lagoon environments, promoted in Ravenna by the Department of Biological, Geological and Environmental Sciences of the University of Bologna.

Two years after beginning, the first 21 students from all over the world will obtain the degree.

Promoted in Ravenna by the Department of Biological, Geological and Environmental Sciences (BIGEA) of the University of Bologna, WaCoMa is the only Erasmus Mundus master in Europe for the training of specialists in the management of coastal marine environments and lagoon areas. And it is a reference point in the world for all students who want to acquire the skills necessary to prevent or mitigate the risks related to climate change. Now WaCoMa - Water and Coastal Management - two years after its birth, has reached an important milestone, with the graduation (on July 20 and 21) of 21 students from 16 different countries, including Africa, New Zealand, Asia, Europe, South America. There is no Italian among them. The strict initial selection based on excellent curricula, in addition to the top marks obtained in the respective international universities, an excellent knowledge of the English language, strong motivations and full availability to spend several months in Portugal and Spain, in the Universities of Algarve and of Cadiz, partner universities of Alma Mater are requirements that often dissuade young Italians, despite an Erasmus Mundus is a prestigious degree opening several professional opportunities in public and private bodies and in international research centers or even a promising freelancer career.

The European Commission through a very rigorous selection ensures that Erasmus Mundus programs are of excellent quality, innovative and on issues of recognized international importance. Erasmus Mundus is a recognized brand in the world.

Those who graduate in an Erasmus Mundus Master programme associate the excellence stamp to their diploma. Maybe in Italy it is not known and appreciated as it should, but this is the reality in the world. On these bases, of course, the Erasmus Mundus Programmes attract in Europe the best students worldwide. Of course, it is not secondary the fact that each student is awarded a scholarship of almost 50,000 euros, including salary for 24 months, tuition fees, university enrollment and mobility funds to move between different countries.

The reason is that the best students would otherwise be selected by other, typically American, universities that offer scholarships to top-students "Erasmus Mundus programs have no comparison in allowing students to study and live together with students from other countries of the world - reports the Coordinator - but also allow teachers to travel to different institutions and build a network of relationships that are very useful for the professional future.

The heart of Erasmus Mundus programs is precisely to promote exchanges and share knowledge, and to promote the European Union as a center of excellence for training in the world ". For WaCoMa we talk about specialized professionals to whom we offer a multidisciplinary path allowing to become managers of the coastal and lagoon environment, capable of making important decisions, such as assessing whether it is possible to plan a natural park or build hotels, or make decisions on residential areas exposed to the risk of sea level rise ". Currently 63 students are enrolled in the Erasmus Mundus WaCoMa Master. Among them, 33 girls and 30 boys, from 33 countries.



### JOB OFFERS EVEN BEFORE GRADUATION

The European Coordinator of Wacomma is Professor Elena Fabbri, full professor of Physiology, currently also President of the Ravenna Campus. She has taught at the Environmental Sciences Courses in Ravenna for 20 years. She believes in international experiences for teaching and research, and for many years she has been involved in Erasmus Mundus Masters and Doctorate Projects.

The institutional coordinators for the University of Algarve and Cadiz are Prof. Alice Newton (chemical oceanographer) and Irene Laiz (physical oceanographer) respectively. So a team of women at the wheel, assisted by the international administrative staff of the Campus of Ravenna (Dr Daniela Farinelli and Dr Giovanni Tardino) and by the students' Tutor Dr. Filomena Volpe.

Satisfactions? Many, first of all for training extremely motivated students. But also for the results achieved which in some cases, even before graduation, have already resulted in job or doctoral opportunities.

Regrets? The answer is obvious, the three-month COVID emergency. We had 7 students in Ravenna, and the rest were divided between Cadiz and Algarve. However, the students were performing the thesis or internship, and they had to go on remote activities. I must thank the Bodies and Companies and laboratories of the University that hosted them for allowing us to do so, without interrupting the paths. We got the pandemic first, in Italy, and then the concern moved to Spain and Portugal. We were able to transfer the other students our experience on COVID in advance and the recommendation to "stay at home". None of the WaCoMa students got sick, it seems to me a miracle. I must admit that we all were very worried.



### WHAT IS WACOMA

WaCoMa is an international teaching program financed by the European Commission which, with the most prestigious European "label", that of "Erasmus Mundus", allows to obtain a highly valued qualification on the European and international job market.

In the Italian system WaCoMa is a Master's Degree, therefore a two-year course after the bachelor. It was approved by the EU in 2017 as unique for the topic covered and of course for the quality of the proposal and its Proponents. The studies are aimed at the management of the coastal marine environment, including fresh water that reaches the sea, in the perspective of environmental risks. It focuses on the issue of climate change and the use of resources, the concepts of mitigation and adaptation, and the sustainable economy. It integrates marine and environmental sciences into an advanced educational program, and at the same time it promotes the exchange of information through the involvement of professionals in the sector.

The management of marine and fresh water environments, like all interface systems, must be conducted through the integration of advanced strategies. A high-profile future manager, such as WaCoMa graduates, must know innovative technical aspects and advanced theoretical ones and even more master their integration. WaCoMa creates managers or scientists who are experts in risk management associated with coastal environments, with a solid knowledge of the environment, data analysis and transformation into information, as well as the legal tools to support it. Students are asked to solve practical management problems, at the



coastal, lagoon, port and marine areas, as well as to compare the different solutions that can be adopted.

WaCoMa is coordinated by the University of Bologna, Campus of Ravenna, together with the Universities of Cadiz (Spain) and Algarve (Faro, Portugal); it grants both the University of Bologna Degree and an international Joint Degree. The Program is carried out in collaboration with Partners including 7 International Universities and 11 Non-Academic Partners: the Ministry of Science, Technology, Innovation and Communication (Brazil); the Higher Scientific Research Council (Spain), ARPAE, the Emilia Romagna Region (Italy), the Municipality of Ravenna (Italy), private companies such as Lighthouse (Italy), Techno (Italy), MarAlgarve and Sagres (Portugal), TecnoAmbiente (Spain). All these Partners collaborated for seminars, internships and theses. The dissemination and promotion part is managed by the Flaminia Foundation (Ravenna, Italy). The students who are graduating in a few days arrived in Ravenna in September 2018, welcomed by the Rector Prof. Francesco Ubertini to whom they presented one by one their Country of origin, the background studies and the motivation to live two years away from home pursuing the Erasmus Mundus WaCoMa degree. It was an unforgettable meeting with the Rector of the University of Bologna, the students wrote on Facebook at the time, a university known worldwide for its millenary and prestigious history. The first half of 2018-19 they lived and studied in Ravenna, followed by Professors of the Environmental Science courses that is open in Ravenna since 1989. For many of them it was a life experience, coming from countries with very different customs and languages. They are young people with a very important cultural background, but for some also the address with the name of the street and the home number was a novelty.

In February 2019 they moved to Faro, to the functional Campus of the University of the Algarve. A city on a lagoon, with the Atlantic within walking distance, where they remained two weeks, for an intensive theoretical-practical course on coastal zone management. Then they moved to Cadiz, another seaside city with a very nice, modern and functional university campus. So, already in the first year the experience of visiting three different countries. For the second year, students chose one of the three universities - and therefore of the three countries - for the thesis and internship year. And now, after knowing different cultures and some even having learned three foreign languages, they graduate.

An experience appreciated by all students was that of the internship, 200 hours of work at Bodies, Companies, etc. In Italy they worked with WaCoMa Partners, e.g. 3 students worked on different topics at ARPAE both in Ravenna and Bologna, at the Environmental offices of the Municipality of Ravenna, at the international company in Bologna Lighthouse with Oil and Gas technology, at the Port Authority of Ravenna, the Green.tech Group at Bologna and Ravenna, the engineering company for the environment and safety Zoppellari Gollini & Associati Srl also based in Bologna and Ravenna.



#### **WE WORK ON KEY TOPICS OF HIGH INTEREST ON GLOBAL SCALE**

Currently I am a researcher at the Department of Biological, Geological and Environmental Sciences (BiGeA) of the University of Bologna. The ocean, the beaches and the coast have always been my favorite places and today I have turned them into my job. I carry out my research in the field of hydrogeology and geochemistry; my research interests are mainly related to coastal area themes: soil and water salinization, subsidence, coastal

erosion, recovery and restoration of dunes, groundwater and surface water monitoring. In the recent years I have been working a lot on ICZM – Integrated Coastal Zone Management and IWRM – Integrated Water Resource Management.

I graduated in 2003 in Environmental Sciences – Abiotic Marine Specialization (University of Bologna) with a thesis on the geomorphology of the Ravenna dune system by applying a numerical model for the sand transport across the emerged beach. In 2007 I then completed a PhD in Environmental Sciences (Protection and management of natural resources) still at the University of Bologna. The was the hydrological and hydrogeological evolution of the Ravenna pine forests.

I have always tried to combine my great passion for travel with academic and professional activities. Therefore I had several experiences abroad: Barcelona, thanks to a scholarship at the University of Geology to work on my master degree thesis; Utrecht, thanks to the 'Marco Polo' fellowship that I gained during the PhD and carried out at the TNO - the Netherlands organization for applied scientific research, where I had the opportunity to work alongside the best European and worldwide known hydrogeologists. Here I specialized myself in the application of numerical modelling of variable-density groundwater flow and coupled solute transport in coastal aquifers. But undoubtedly the most beautiful and formative experience was Australia.

After my PhD I participated and won a research associate position at the School of Biological, Earth and Environmental Sciences of the University of New South Wales in Sydney, where I spent 3 beautiful years, from 2007 to 2010. Catapulted into another world (hemisphere I would say), I found myself working within a multidisciplinary research group in the field of water resource management. My task was to develop 3D geological models and implement 3D groundwater flow modelling to support interconnected groundwater and surface water in several watersheds of the New South Wales. It was a project funded by the National Water Commission, that is the Australian national organization in charge of water management, in collaboration with several Catchment Management Authorities. It was a demanding but very interesting and rewarding period, which made me grow both professionally and personally. I believe that the difficulties I encountered at that stage of my life were very similar to those that WaCoMa students experience, especially during the first year of the program, when they need to move and change 3 countries in less than 12 months: language, food, routine, worries, doubts, home sickness, fear of not being up to it. In a foreign country, away from home, family and own 'comfort zone', even the simplest duty (opening the bank account, understanding how to get around by public transport, purchasing the favorite food, etc.) can turn into a problem and be source of stress. If you add to this the work, study activities, lectures, and exams, it is easy to understand the disorientation that can be glimpsed in the eyes of some newly arrived students. Having experienced these emotions can explain my closeness to all WaCoMa students who I have met in the past 2 years. In their eyes I recognize the bewilderment of the first days and then I always remain fascinated by their resilience, by their inexorable capability to reorganize their lives and face difficulties. And it is always very moving to say goodbye to them when January comes.

Currently I teach Environmental Hydrology (module of Geochemistry) at the two year master in Environmental Assessment and Management, while for the WaCoMa Program I teach two curricula: 'Integrated Coastal Zone Management' and 'Advanced Technologies and Decision Support Systems (DSS) in water and coastal management', in collaboration with the Emilia-Romagna Region - Soil Protection, Coast and Reclamation Service (Dr. Roberto Montanari) and the Hydro-Meteo-Climate Service of





Arpae (Dr. Andrea Valentini), respectively. Among the first cohort WaCoMa students, who are going to graduate in July 2020, I am the supervisor of 2 and the co-supervisor of other 3. The thesis topics are all related to our territory (land use change, drainage, subsidence, flood risk, coastal aquifer salinization, erosion, storm surges).

These are key topics of high interest on global scale because related to the coastal zone management and climate change effects. The WaCoMa program has permitted the collaboration with institutional authorities, such as the Emilia-Romagna Region, Arpae, and the Reclamation Consortium, which have supervised several thesis and internships, and have shared their knowledge and experience during seminars, workshops and lectures.

The WaCoMa program is an outstanding and satisfying professional experience that has allowed me to collaborate with various national and international universities as well as local authorities, which deal with the management of our territory and coastal zone. However, the human aspect remains the most rewarding one.

A grateful thanks goes to Professor Elena Fabbri who, with her experience and kindness, has always supported me on this journey.... "you live and learn"!



**I WANT TO ACQUIRE THE BEST KNOWLEDGE AND RETURN TO SRI LANKA TO PROPOSE SOLUTIONS AGAINST SEA POLLUTION**

The warning bell of the microplastics born issues from the marine environment is very desperate as people are so ignorant about the consequence– the skyrocketing rate of plastic pollution in the oceanic earth. I, Gunaalan Kuddithamby, sensitive to blue

issues because of my indigenous affection is from the pearl of the Indian Ocean island, Sri Lanka. Ironically, the plastic pollution in the aquatic body is not investigated in depth and not well managed. As a lecturer in the Department of Fisheries Science, University of Jaffna, Sri Lanka, have the perception and passion to learn about the real insights of marine plastics and want to tackle their impacts and go back to my Country with the acquired knowledge needed to find solutions.

The EMJMD WaCoMa gave a solid professional development which provides a platform to build network and bridge between different experts from various part the globe in the field of water and coastal management. Course works of the WaCoMa program was followed in three reputed universities in the Europe, University of Bologna, Italy, University of Algarve, Portugal and University of Cadiz, Spain.

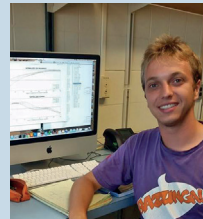
I chose the University of Bologna for my dissertation during the second year of the program. It is my great privilege to learn at the world's oldest university, founded by the Holy Roman Emperor in 1088 where I had an opportunity to pursue my thesis on "Impacts of Plastic leachates on Mediterranean mussels using selected biomarkers" at the University of Bologna for the second year of the degree.

In addition, I am honoured to be a student of Professor Elena Fabbri, who is my thesis supervisor, President of the Campus of Ravenna and internationally acknowledged as an excellent scientist, and also to have worked with Dr Marco Capolupo, co-supervisor who guided me in the research studies.

Besides, I received the internship at ARPAE, Emilia-Romagna, Italy (Regional Agency for Prevention, Environment and Energy) under the guidance of Dr. Fabrizio Bandini where I performed a series of lab works related to aquatic toxicity. It was an excellent scientific and human experience,

that I will never forget.

I felt more encouraged when I did my thesis with the support and guidance provided by Prof. Elena Fabbri and Dr Marco Capolupo. The excitement remains for the rest of my future endeavor, awarded a PhD scholarship in risk assessment of microplastics at the Technical University of Denmark (DTU). Yes, the knowledge and experience I gained from WaCoMa and ARPAE ignite my enthusiasm which is the key alliance that made me secure the PhD opportunity at DTU. My learning experience at the WaCoMa environment was aided tremendously by deepening the knowledge and skills in the marine plastic studies, and was subsequently one of the best rewards I brought back from my two-year stay at the University of Bologna.



**LUIS GERMANO BIOLCHI, MY DREAM IS TO BECOME A UNIVERSITY PROFESSOR**

My bachelor was focused on Oceanology at FURG (Federal University of Rio Grande), considered one of the best majors in the subject in South America. During my undergraduate studies I got a scholarship to study in the United States (Montclair State University (MSU), Montclair-NJ, USA) during the

Fall semester of 2014 and the Spring semester of 2015. As at MSU there was not a major in Oceanography, I focused my exchange period in Geosciences.

I got the opportunity to work with coastal evolution for the first time. From May 2015 – August 2015 I was Guest Student at the Department of Geology and Geophysics Woods Hole Oceanographic Institution (WHOI) - Woods Hole-MA, USA where I conducted research seeking to better understand how alongshore sediment transport behaves along the east coast of the United States, using advanced modelling tools. Then I started my master degree at Universidade Federal do Rio Grande do Sul (UFRGS) developing the thesis within the Center of Coastal and Marine Geology Studies (CECO). The studies in two different top-level Brazilian universities and my stay in two different institutions in the United States, made me confident when talking about coastal processes that were at the center of my scientific future. However, even before the College I wanted to become a University professor, to teach and conduct research meanwhile.

After the Brazilian government started cutting funds that were once dedicated to science I had to look for opportunities abroad to specialize and return to Brazil with new ideas, new methods and renewal energy to face the social, economic and scientific problems happening in my Country.

The possibility of having a scholarship was the only way to move and study, and the prestigious Erasmus Mundus WaCoMa was the best opportunity I could think about.

So I applied immediately and I won the position. After the great experience in three Universities during the first year (Bologna at Ravenna Campus, Algarve, and Cadiz) I have chosen to perform my thesis in one of the most prestigious Universities in Europe, i.e. Bologna. The thesis has been performed in collaboration with Dr Andrea Valentini at ARPAE on Ensemble technique for a coastal Early Warning System (EWS): an application on the Emilia-Romagna Coast.

I must say that the Erasmus Mundus experience within WaCoMa was much better than my dreams. I met excellent scientists and learned a lot. Now, a few days before graduation, I already have different concrete to continue my training. University? Arpae? Italy or abroad? I must select. It is a challenge, but also an immense satisfaction.

