**ELENCO DISPONIBILITA’ PER LO SVOLGIMENTO DI TESI / TIROCINI ALL’ESTERO**

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| **Thematic Area:** Plant Pathology |
| **Hosting Institution:** University of Santiago, Chile – University of Rancagua, Chile |
| **Indicative period/ duration:** 3 months |
| **Short activity description:** survey in fields and molecular work in laboratory |
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| **Thematic Area:** Plant Pathology |
| **Hosting Institution:** University of Stellenbosh, South Africa |
| **Indicative period/ duration:** 3 months |
| **Short activity description:** survey in fields and molecular work in laboratory |
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| **Thematic Area:** Plant Pathology |
| **Hosting Institution:** National Institute of Biology, NIB, Ljublijana, Slovenia |
| **Indicative period/ duration:** 3 months |
| **Short activity description**: molecular work in laboratory |
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| **Thematic Area:** Plant Pathology |
| **Hosting Institution:** Aarhus University, Denmark |
| **Indicative period/ duration:** 3 months |
| **Short activity description:** molecular and bioinformatic work in laboratory |
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| **Thematic Area:** Agricultural and Environmental Policy |
| **Hosting Institution**: The James Hutton Institute (UK) |
| **Indicative period/ duration:** 6 months |
| **Short activity description:** Farmers’ decision-making process and policy interventions |
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| **Thematic Area:** agricultural economics.  **Specific topic**: Simplified life cycle assessment (LCA), life cycle costing (LCC) and social LCA (S-LCA) of CRFS initiatives |
| **Hosting Institution:** to be defined depending on the interest. The hosting institution can be a foreign organization as well as an Italian organization.  Potential foreign institutions include: APT - Institut des Sciences et Industries du Vivant et de l’Environnement – Agro Paris Tech (France), Swass - Fachhochschule Sudwestfalen (Germany), UAB - Universitat Autònoma de Barcelona (Spain) and others. |
| **Indicative period/ duration:** 3-6 months |
| **Short activity description:** Working within the FoodE project, the thesis will contribute to the collection of CRFS data to develop sustainability assessments. First, it will investigate key parameters identified in the FoodE project as a base for the assessment; second, it will identify CRFS case studies for data collection. The analysis will highlight major hotspots and improvement scenarios with regard to the sustainability of the selected CRFS initiatives. The integration of environmental, economic, and social indicators will provide an insight on current trade-offs and/or win-win situations. Suggestions on potential policy implications will be also discussed  **Related projects:**  FoodE (<https://www.foode.eu/>)  **Expertise/competences achieved during the research thesis**: CRFS methodological framework; good understanding of life cycle analysis (LCA), life cycle costing (LCC) and social life cycle (S-LCA); data analysis; stakeholders consultation and workshops development; basics in policy design. Competencies might vary depending on the chosen subject |
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| **Thematic Area:** agricultural economics.  **Specific topic**: Identification, validation, and classification of innovative business models (BM) in CRFS |
| **Hosting Institution:** to be defined depending on the interest.  Potential foreign institutions include: Swass - Fachhochschule Sudwestfalen (Germany) and others. |
| **Indicative period/ duration:** 3-6 months |
| **Short activity description:** Working within the FoodE project, the thesis will contribute to the screening of available knowledge and newly created datasets in order to identify a classification of BMs in CRFS. Particular attention will be dedicated to innovative BMs, where multiple benefits of CRFS together with their economic, social and environmental assessment will be accounted for (Ex. Triple layer BM). Key features of CRFS have to be added to state-of-the-art research in this field to result in a classification of CRFS BMs. SWOT analyses on strengths, weaknesses, opportunities, and threats of each BM type will be carried out by addressing relevant topics such as job creation, nutrition security, social cohesion, technological advancement, and the interactions of food chain actors.  **Related projects:**  FoodE (<https://www.foode.eu/>)  **Expertise/competences achieved during the research thesis**: CRFS methodological framework; analysis of CRFS innovative business model; development of comparative analysis; classification of business models; basics in policy design; basics of life cycle analysis (LCA) and life cycle costing (LCC) for analysis of impacts and policy scenarios.  Competencies might vary depending on the chosen subject. |
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| **Thematic Area:** agricultural economics.  **Specific topic:** Business model and life cycle thinking integration |
| **Hosting Institution:** to be defined depending on the interest. The hosting institution can be a foreign organization as well as an Italian organization.  Potential foreign institutions include: Swass - Fachhochschule Sudwestfalen (Germany) and others. |
| **Indicative period/ duration: a**vailable from April, 3-6 months duration |
| **Short activity description:** Working within the FoodE project, the thesis will contribute to the integration of classified business models with Life Cycle Thinking approaches. The most relevant indicators for defining CRFS sustainability should be included. The social, technological or market access innovation together with additional key sustainability indicators will be identified and validated against a newly created classification of effective business models in CRFS.  **Related projects:**  FoodE (<https://www.foode.eu/>  **Expertise/competences achieved during the research thesis**: CRFS methodological framework; analysis of CRFS innovative business model; policy analysis and evaluation; good understanding of life cycle analysis (LCA) and life cycle costing (LCC) for analysis of impacts and policy scenarios. Competencies might vary depending on the chosen subject. |
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| **Thematic Area:** agricultural economics.  **Specific topic**: Food policy with particular focus on food waste |
| **Hosting Institution:** to be defined depending on the interest. The hosting institution can be a foreign organization as well as an Italian organization.  Potential foreign institutions include: University of Rovira i Virgili (Spain); University of Missouri (USA); Oregon State University (USA); Tuskegee University (USA); University of Guelph (Canada); University of Wageningen (The Netherlands); Tecnologico de Costarica (Costarica) and others. |
| **Indicative period/ duration:** 3-6 months |
| **Short activity description:** Despite a growing attention from the academic world, civil society and policy makers, the debate on food waste is affected by a lack of a consensus over its definition and scope boundaries, the conditions that lead to its creation and the (lack of) quantification along the food supply chain. Moreover, as policies and policy proposals are emerging, there is a greater need for quantification and analysis of policy interventions. The projects will focus on the analysis of specific food policies with particular focus on food waste.  **Related projects:** FP7 FUSIONS <https://www.eu-fusions.org/>; H2020 REFRESH <https://eu-refresh.org/>  **Expertise/competences achieved during the research thesis**: Food waste qualification and quantification, policy analysis and evaluation; development of comparative analysis; case study development; basics in policy design; basics of life cycle analysis (LCA) and life cycle costing (LCC) for analysis of impacts and policy scenarios. Competencies might vary depending on the chosen subject. |
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| **Thematic Area:** agricultural economics.  **Specific topic**: experimental and behavioral economics, food economics, food related behaviors and drivers. |
| **Hosting Institution:** to be defined depending on the interest. The hosting institution can be a foreign organization as well as an Italian organization.  Potential foreign institutions include: University of Rovira i Virgili (Spain); University of Missouri (USA); Oregon State University (USA); Tuskegee University (USA); University of Guelph (Canada); University of Wageningen (The Netherlands); Nofima (Norway) and others |
| **Indicative period/ duration:** 3-6 months |
| **Short activity description:** Consumers’ food management and behaviors are deeply connected with dietary patterns and household food waste. Many theoretical frameworks have been developed to analyze which drivers are the most relevant in explaining dietary choices and food waste behaviors and how those drivers are influencing each other. Behavioral and experimental approaches have been proven to be effective in studying these relationships and impacts.  **Related projects:** H2020 COMFOCUS  **Expertise/competences achieved during the research thesis**: Food waste qualification and quantification, consumer behaviours related to diets, policy analysis and evaluation; development of comparative analysis; case study development; basics in experimental design; Competencies might vary depending on the chosen subject. |
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| **Thematic Area**: agricultural economics.  **Specific topic**: sustainability assessment of water reuse technologies in the Mediterranean region; sustainability assessment of innovative cash crops farming systems, specifically *camelina sativa* |
| Hosting Institution: to be defined depending on the interest. The hosting institution can be a foreign organization as well as an Italian organization.  Potential foreign institutions include: Ecofilae-environmental consultancy, (Montpellier, France); Arvalis, Agricultural research organization (Boigneville, France); University of Tunis El Manar (Tunisia, Tunisia) |
| **Indicative period/ duration:** 3-6 months |
| **Short activity description:** The growing worldwide population is increasing the pressure on natural resources, specifically on water and energy demand, and land consume. To overcome this issue before a non-return point, new technologies and crop cultivation are being experimented to rely on alternative water sources, such as waste water, and crops, like camelina sativa. If properly treated, wastewater can be used to increase the access to safe and sufficient water supplies for agricultural and civil purposes. The same for *camelina sativa,* which is well suited for conservation agriculture and can apport environmental and economic benefit to the areas in which it is grown.  **Related projects:** PRIMA FIT4REUSE <https://fit4reuse.org/>; PRIMA 4CE-MED <https://www.4cemed.eu/>  **Expertise/competences achieved during the research thesis**: Waste water treatment pilots and farming systems sustainability and policy assessment; development of comparative analysis; case study development; basics in policy design; basics of life cycle analysis (LCA), social life cyle assessment (S-LCA), and life cycle costing (LCC) for analysis of impacts and policy scenarios. Competencies might vary depending on the chosen subject. |
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| **Thematic Area:** agricultural economics.  **Specific topic**: Sustainability assessment of selected city/region food systems (local agro-food system) |
| **Hosting Institution:** to be defined depending on the interest. The hosting institution can be a foreign organization as well as an Italian organization.  Potential foreign institutions include: University of Rovira i Virgili (Spain); University of Missouri (USA); Oregon State University (USA); Tuskegee University (USA); University of Guelph (Canada); Wageningen University (The Netherlands); Tecnologico de Costa Rica (Costa Rica) and others |
| **Indicative period/ duration:** 3-6 months |
| **Short activity description:** Sustainability has been in national and international agendas for decades; however there ii is more pressure than ever now to consider integrated strategies to address improvements in the production and consumption in food systems. Life cycle thinking provides a paramount opportunity to assess the sustainability of food systems as it can be adapted to sections, products or types of the food system.  **Related projects:** H2020 REFRESH <https://eu-refresh.org/> ; 4CE-MED?? / Sustainability assessment of agri-food products (this is from the thesis so not sure it fits here, there are other project at TEC related to natural fibers and biomass)  **Expertise/competences achieved during the research thesis**: adoption of a Life Cycle Thinking (LCT) approach, basics of specific LCT methods such as life cycle analysis (LCA) and life cycle costing (LCC), linkage and application to Decision Methods. Competencies might vary depending on the chosen subject. |
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| **Thematic Area:** agricultural economics.  **Specific topic**: Climate change and migration in rural areas: drivers, impacts and rural development. |
| **Hosting Institution:** to be defined depending on the interest.  Potential foreign institutions include: University of Rovira i Virgili (Spain); University of Missouri (USA); Oregon State University (USA); Tuskegee University (USA); University of Guelph (Canada); Ince-Nier (Moldova); Tecnologico de Costa Rica (Costa Rica) and others. |
| **Indicative period/ duration:** 3-6 months |
| **Short activity description:** Environment may be understood as one among numerous interacting factors that shape people’s decisions to move. However, nowadays, the human cost of climate change falls unequally between and within countries and mobility as well is experienced in dramatically different ways across the globe. Indeed, unprecedented levels of migration in today’s globalized economy are dramatically reshaping social, economic and political landscapes in sending and receiving countries. For policymakers and practitioners, understanding and responding effectively to such rapid transformation is a pressing issue with a particular focus on transformations taking place in the agrarian sector in rural areas of low and middle-income countries.  **Related projects:** DEAR #CLIMATEofCHANGE <https://climateofchange.info/>; H2020 AGRUMIG <https://agrumig.iwmi.org/>;  **Expertise/competences achieved during the research thesis**: migration policy analysis and evaluation; policy evaluation for rural development; development of comparative analysis; case study development; basics in policy design; basics of climate change economics; basics of behavioural economics; Competencies might vary depending on the chosen subject. |
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| **Thematic Area: Genetics, Genomics and Plant Breeding** |
| **Hosting Institution:** Swedish University of Agricultural Sciences: Uppsala |
| **Indicative period/ duration:** 6 months |
| **Short activity description:** apply genomics to search for resistance genes in a panel of durum wheat and emmer collected from GenBanks world-wide.  The collaboration includes the characterization of pathogens response in a panel of durum and emmer wheat and use genomics (genome-wide association mapping) to identify the chromosome regions harboring resistance genes. Use of imaging and lab techniques like qRT-PCR and digital PCR for the characterization of the genotype respoonse and for the quantification of the pathogen invasion.  Pathogens considered are: Fusarium graminearum/culmorum, wheat yellow rust. Septoria tritici blotch, Stagonospora nodorum |
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| **Thematic Area: Genetics, Genomics and Plant Breeding** |
| **Hosting Institution:** University of Copenhagen |
| **Indicative period/ duration:** 4-6 months |
| **Short activity description:** characterization of a wide collection of durum wheat and emmer from GenBanks assembled by UNIBO for positive microbe-wheat interaction that positively affect the capacity of the plant for root growth and nutrient and water uptake. The collaboration is built based on UNIBO experience in wheat genomics and University of Copenhagen experience in characterizing the microbe-host interaction based on metabolomic and proteomic analysis.  The aim is to identify bacterial strains that positively interact with wheat genotypes at active root growth stage, and to characterize the interaction using an integrated genomic and metabolomic approach |
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| **Thematic Area: Genetics, Genomics and Plant Breeding** |
| **Hosting Institution:** University College of Dublin (UCD) |
| **Indicative period/ duration:** 4-6 months |
| **Short activity description:** genomics and transcriptomics of wheat-fusarium and wheat-Septoria interaction.  UNIBO collaborates with UCD to carry out a series of studies for the transcriptomic characterization of the wheat-fusarium and wheat-septoria interaction using a common panel of durum and bread wheat from European Countries. The activities includes artificial inoculation of adult plants grown in growth chamber, RNA sampling and sequencing through RNAseq, data analysis in R and LINUX |
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