14 positions of Early Stage Researchers within a Marie Curie Initial Training Network (ITN)

Careers in Sustainability Excellence
CASTLE

Call for applications closes: December 31st 2012

CASTLE consortium – (Marie Curie Initial Training Network) –
invites applications for 14 **full-time research vacancies** for **early stage researchers (ESR)**. Selected researchers are expected to undertake transnational mobility in order to implement an **Individual Research Project (IRP)** at one of the consortium partner institutions, as well as to participate in a joint network training programme.

1. Description of CASTLE training network

By 2020 the increasing demand for biomass as a feedstock for fuel, fibre and food will have measurable economic, environmental and social effects. The forest-based sector is responding to the competition for biomass with innovative products, such as renewable chemicals produced in biorefineries. The agricultural sector is also reinforcing innovations based on fast-growing biomass crops. Such innovations may bear completely new bio-based production systems, the long-term impact of which on the environment, economic viability and social cohesion is difficult to foresee. Policy makers, businesses and civil society organisations demand that the sustainability of new production systems is safeguarded. Hence, sustainability assessment methods that quantify environmental, economic and social impacts are needed for the bio-based economy.

However, so far academic training insufficiently reflects the relevance of sustainability impact assessment in business and policy making. "**Careers in Sustainability Excellence" (CASTLE) closes this gap as it combines scientific, innovative, problem-oriented research and practical training of young academics on methods used for sustainability impact assessments in the bio-energy and forest-based sector in Europe. CASTLE educates sustainability experts for the broader bio-based economy.**

The scientific programme of CASTLE refines and improves state-of-the art sustainability assessment methods and applies them to current sustainability challenges in industry and policy making. With its training programme, CASTLE imparts a wide range of methods and skills. It covers assessment of direct environmental, economic and social sustainability impacts like GHG-emissions, carbon footprint, structures beneficial for biological diversity, water consumption and pollution, land use, value added, rural development, small business opportunities, job opportunities and recreation. But as the increasing demand for biomass may also induce indirect effects, CASTLE provides training on global market effects and land use changes. Finally, as communication of sustainability issues and interaction with public and civil society organisations becomes increasingly important, training of communication skills essential for e.g. transparent reporting on social corporate responsibility of companies is an important part of CASTLE's training programme, too.

The CASTLE consortium consists of nine full partners and 10 associated partners from six countries. The ESRs will be hired at the full partners under employment contracts. The duration of the employment is 30-36 months. The compensation will be highly competitive, and the salaries will vary based on the

country where the ESRs will be recruited (country correction factors are given by the European Commission).

2. Eligibility criteria

- Nationality: Nationals from any country may apply.

- Mobility: at the time of the recruitment, the researcher must not have resided or carried out his/her main activity (work, studies, etc.), in the country of the chosen host institution for more than 12 months in the three years immediately prior to the date of the recruitment (01.01.2010 - 31.12.2012).

Early Stage Researcher (ESR): researchers who, at the time of the recruitment, have not yet been awarded a doctorate degree and are in the first four years (full-time equivalent) of their research careers, including the research training period that would entitle them to a doctorate. *(Non-research work after acquiring a Master's degree is not counted in the four years of the research career; certificates on the nature of tasks in non-research employment will be requested for shortlisted candidates.). Each ESR position includes a planned PhD affiliation with a university, which can be negotiated, including cases of an existing enrolment to a PhD programme.*

3. General evaluation criteria

- Educational background relevant for the chosen position/IRP. A Master's degree is desirable.
- Previous research experience, relevant to the chosen position/IRP.
- Language skills (English compulsory).
- Networking and communication skills (to be evaluated in the interview).

4. How to apply

Applications must be completed entirely online and will include:

- Application form, including a brief research statement on how you will contribute to the chosen IRP. You should apply for at least one IRP and explain your choice, but also state two more alternative IRPs (by order of preference).
- Curriculum Vitae (link to template here) including two references.

If it is not possible for you to apply online please send your application to: Human Resources Office, EFI, email: castle.hr@efi.int.

Any questions on the CASTLE project or the individual research projects can be directed to castle.hr@efi.int.

IMPORTANT: No copies of diplomas or other supporting documents are necessary at this stage. However, please note that shortlisted candidates will be required to provide certified copies of their degrees before the interview.

5. Recruitment calendar

- Deadline for applications: **December 31st, 2012**
- Notification to candidates shortlisted for interview: **January 14th, 2013**
- Interviews with shortlisted candidates: **January 21st-25th, 2013**
- Notification of selected candidates **February 1st, 2013**
- Contract begins: **April 1st, 2013**

6. Summary of Individual Research Projects (IRP)

Fellow number	Project title	Host institution	Host Country
ESR1	Ex-ante SIA system for biomass production from arable land	ZALF	Germany
ESR2	Dynamic indicator calculation in ToSIA using a framework for model linkage	EFI	Finland
ESR3	Multi-criteria evaluation of sustainability impact assessment (SIA) results	BOKU	Austria
ESR4	Assessing impacts of technological change on sustainable development	Skogforsk	Sweden
ESR5	Using material flow indicators for SIA of bio-energy systems	UNI-KLU	Austria
ESR6	Implementation of LCA in complex wood industry production	vTI	Germany
ESR7	Quantitative and qualitative impact assessment of sustainability with the aid of LCA and changed structures deemed to be crucial for biodiversity	Skogforsk	Sweden
ESR8	Harvested wood products carbon assessment using ToSIA	EFI	Finland
ESR9	Mitigation options through innovative wood product use	ZALF	Germany
ESR10	Sustainability impact assessment as management tool on enterprise level	vTI	Germany
ESR11	Implementing feedstock management and carbon tracking modules in enterprise resource planning services	MHG Systems	Finland
ESR12	Footprint Indicators in Sustainability Communication	VTT	Finland
ESR13	Eco-efficient Transport	FCBA	France
ESR14	GHG emissions accounting and reduction in the forest products sector	FCBA	France

Details of Individual Research Projects (IRP) can be found at:
http://www.efi.int/portal/careers/castle/

7. Condensed Individual Research Project (IRP) descriptions

ESR1		
Project title: Ex-ante SIA system for biomass production from arable land	**Duration 36 months**	**Start date April 1st 2013**
Project Description: Methods and tools for impact assessment are often either quantitative making use of comprehensive modeling and data analysis or qualitative also involving participation and stakeholder involvement. This study will improve the integration of quantitative and qualitative methods for ex-ante IA of biomass production scenarios. The impact assessment will be conducted at landscape level to consider the multiple function and services at the agriculture-forestry interface. The participatory tool FoPIA (Framework for Participatory Impact Assessment) that covers various land use sectors and sustainability issues will be combined with a Bayesian network approach to allow for probability considerations in the assessment of the environmental and socio-economic impacts of alternative production options at landscape level and to derive trade-offs for decision making.		
Educational requirements: • Master degree (university) in the field of environmental sciences, agricultural sciences, forestry sciences or landscape ecology: • Experience in interdisciplinary analysis, ecosystem services, science-policy interface; methods in policy assessment and evaluation, sustainability sciences		
Other host/topic specific requirements: Applicant should have a basic understanding of the interactions between agricultural and forestry land use on one side, and environmental and socio-economic processes at landscape/regional level. Proven skills in bridging between disciplines and understanding social, economic and natural science approaches. Applicant should be familiar with participatory methods for stakeholder involvement as well as with statistical methods and data analysis. Experience with Bayesian network approaches is welcome.		
Host institution: ZALF (Leibniz Zentrum für Agrarlandschaftsforschung) www.zalf.de		
Host location: Germany (Müncheberg)		
Proposed PhD affiliation: University of Potsdam		

ESR2		
Project title: Dynamic indicator calculation in ToSIA using a framework for model linkage	**Duration 36 months**	**Start date April 1st 2013**
Project Description: ToSIA has been developed during the FP6 project EFORWOOD as a flexible and data-driven sustainability impact assessment tool. ToSIA is now targeted towards multiple users (researchers, policy makers, industry, other stakeholders). This requires ease of using the tool to e.g. define new case studies and to allow also making increasingly complex assessments. To facilitate faster and less error-prone set up of new case studies, this study will develop routines for dynamic indicator calculation and for creating linkages between ToSIA and other datasets and models (e.g. the resource model EFISCEN).		
Educational requirements: University degree (MSc or equivalent) in natural sciences (environmental sciences, forest sciences, geoecology, bioinformatics, computer sciences, agricultural sciences, biology, or a related discipline).		
Other host/topic specific requirements: • Experience in modelling of environmental or technological systems, systems analysis, indicator concepts, ecosystem services, sustainability sciences • Capacity to work with simple mathematical equations and knowledge of statistics • High motivation to work both in an international, multi-disciplinary team and independently • Excellent English communication skills (written and oral) Assets: • Good skills in statistical software • Java software development experience • Knowledge of relational databases (SQL, MySQL) In context of CASTLE, EFI (an International European Interest Organization, IEIO) is considered a "country", and therefore the mobility rule means that ESRs may not have worked/studies at EFI for more than 12 months in the 3 years immediately prior to the date of the recruitment.		
Host institution: EFI (European Forest Institute) www.efi.int		
Host location: Finland (Joensuu)		
Proposed PhD affiliation: University of Eastern Finland		

ESR3		
Project title: Multi-criteria evaluation of sustainability impact assessment (SIA) results	**Duration 36 months**	**Start date April 1st 2013**
Project Description: SIA may assess a system ex post and compare it to some baseline, or in a scenario-based ex-ante approach to evaluate the likely impacts of e.g. policy, technology or management changes on the sustainability of the analysed system. Evaluating the likely impacts of policy scenarios or courses of action on sustainability issues involves judgements and preferences of experts and stakeholders. Integrating factual information with preferences and beliefs to determine the overall preferable alternative (i.e., scenario) is a classical multi-criteria decision analysis problem which can be addressed with multi-criteria analysis methods. This ESR project will explore the methodological challenges of different SIA settings (e.g. different stakeholders along value chains, consideration of spatial preferences) by means of several CASTLE study cases and derive general components that can then be used to tailor a suitable multi-criteria analysis approach for any given SIA context.		
Educational requirements: Master degree in Environmental Sciences and related fields; students with a Master in Economics with a strong interest in environmental issues may also apply.		
Other host/topic specific requirements: Interest to combine hard and soft data and methods; ability and willingness to interact with stakeholders		
Host institution: BOKU (Universität für Bodenkultur Wien) www.boku.ac.at; Institute of Silviculture [http://www.wabo.boku.ac.at/mcdm_dss.html]		
Host location: Austria (Vienna)		
Proposed PhD affiliation: University of Natural Resources and Life Sciences (Vienna)		

ESR4		
Project title: Assessing impacts of technological change on sustainable development	**Duration 36 months**	**Start date April 1st 2013**
Project Description: New technologies for procurement, production and distribution of bio-energy related products from the forest sector will result in altered sustainability impacts for forest management and industry. The structure of the industry may develop towards small scale or large scale operations depending on which kind of energy products (e.g. liquids or pellets) might emerge in conjunction with products from traditional industry. Whereas economic evaluation methods are well established, this is not the case with sustainability aspects, such as emissions of harmful compounds and effects on important habitats for wildlife and trees. This study will investigate effects of developing a regional traditional FWC setting into a structure with extended biofuel procurement and production. Using tools and methods developed in other CASTLE studies, forest sector development scenarios will be compared and evaluated.		
Educational requirements: Pre-qualifications for being adopted to the position at SLU: The candidate should hold a Master degree in Biology (or equivalent). For further information, please contact Professor Göran Thor (goran.thor@slu.se). There are also specific pre-qualifications, including at least 90 HEC (ECTS) that should be examined in the area of forest resource management / technology. The 36-month education fulfils the requirements for Licentiate degree (120 HEC (ECTS) or 24 month). If funding will be granted it is normally possible to prolong the education to Doctoral degree (240 HEC or 48 month). Selection among applicants meeting the requirements is made with reference to a written application including curriculum vitae, copies of degrees and transcripts of academic records, one copy of the dissertation for Master's or undergraduate degree, a list of at least two references familiar with the applicant's qualifications, certified knowledge of the English language and an interview.		
Other host/topic specific requirements: Proficiency in spoken and written English as well as good teamwork skills are essential. The Department of Ecology conducts empirical and theoretical research for sustainable forest and agricultural production and efficient biological conservation. Research on populations, communities, and ecosystems forms the foundation for studying the influence of land use and climate change on animals, plants, and soils. Solutions are sought that will improve greenhouse gas balances, preserve threatened species, benefit biological diversity and ecosystem services, and control pests in forest and agricultural landscapes as well as in urban areas. Presently, about 40 PhD students work at the department. **Further information**: Professor Göran Thor, goran.thor@slu.se		
Host institution: Skogforsk (Stiftelsen Skogsbrukets Forskningsinstitut) www.skogforsk.se		
Host location: Sweden (Uppsala)		
Proposed PhD affiliation: Swedish University of Agricultural Sciences, Department of Forest Resource Management		

ESR5		
Project title: Using material flow indicators for SIA of bio-energy systems	**Duration 30 months**	**Start date May 1st 2013**
Project Description: Material- and Energy flow analysis (MEFA) provides a framework to assess resource use intensity and sustainability of industrial activities in a top-down (systemic) perspective. Material Flow Accounts derived with MEFA have been implemented as integral components of the environmental reporting schemes of national and international statistical offices (e.g. EUROSTAT, EEA). In this study, these methods are adopted to assess changes in resource use intensity for a number of alternative bio-energy supply scenarios based on agricultural and forest biomass, using case study information from bio-energy related CASTLE research studies.		
Educational requirements: Master degree (university) in the field of environmental sciences, agricultural sciences, forestry sciences or landscape ecology: Experience in interdisciplinary analysis, ecosystem services, Socio-ecological indicators, sustainability sciences.		
Other host/topic specific requirements: Applicant should have a basic understand of the interactions between agricultural and forestry land use on one side and environmental and socio-economic processes at landscape/regional level. Interest in interdisciplinary research, proven skills in bridging between disciplines and understanding social, economic and natural science approaches. Affinity to quantitative (data) work, knowledge of common spreadsheet and database programmes (MS Office), effective oral and written communication skills, Open-minded, creative and flexible to work in a research team, fluent English and at least proficient German language skills are required.		
Host institution: UNI-KLU (Alpen-Adria Univ. Klagenfurt-Graz-Wien) www.uni-klu.ac.at/socec		
Host location: Austria (Klagenfurt)		
Proposed PhD affiliation: Alpen-Adria Univ. Klagenfurt-Graz-Wien		

ESR6		
Project title: Implementation of LCA in complex wood industry production	**Duration 36 months**	**Start date April 1st 2013**
Project Description: Existing LCA studies in the forest and wood sector so far have focused on relatively straightforward production environments, such as sawnwood or wood panels. In cases of industries with a wide range of highly variable products, such as the furniture industries, new approaches need to be identified with regard to e.g. the definition of functional units and the allocation procedures to be used. This study will focus on the adaptation of the LCA methodology to the specific problems in the furniture industry. A proposal will be developed on how to integrate the LCA approach into the decision making process of the industrial Associated Partner company and more generally in eco design of furniture.		
Educational requirements: Diploma or MSc degree in wood, forest or environmental sciences, or polymer/material sciences		
Other host/topic specific requirements: • Basic knowledge on LCA methodology and relevant LCA-software (e.g. GaBi) • Knowledge and expertise in wood technology and/or wood engineering are an asset • Knowledge of common spreadsheet and database programmes (MS Office) • Effective oral and written communication skills • Highly motivated to work both in a multi-discipline or multi-functional team and independently • Open-minded, creative and flexible to work in an European research environment • Fluent English and at least proficient German language skills are required		
Host institution: vTI (Johann Heinrich von Thuenen-Institut) www.vti.bund.de		
Host location: Germany (Hamburg)		
Proposed PhD affiliation: University of Hamburg		

ESR7		
Project title: Quantitative and qualitative impact assessment of sustainability with the aid of LCA and changed structures deemed to be crucial for biodiversity	**Duration 36 months**	**Start date April 1st 2013**
Project Description: There are several methods used to assess sustainable use of natural resources. LCA is used to follow flows from defined start and endpoints in order assess impact for products or services during their life time. Environmental impact assessment (EIA) includes qualitative assessments with a societal interpretation perspective often prescribed in national law to investigate impacts e.g. of an industrial investment on natural resources. This study will test alternative environmental evaluation methods to investigate the impacts of biomass harvests (tops, branches and stumps) for bio-energy in a landscape perspective. The consequences of removing biotic material for generating energy are evaluated as LCA of the energy products (compared to those of fossil origin) and assessment of changes of the structures supporting biodiversity.		
Educational requirements: Pre-qualifications for being adopted to the position at SLU: According to the Higher Education Act 7 § 39. This implies higher education studies of at least 240 HEC (ECTS) and 60 HEC (ECTS) of these should be on advanced level. Please observe that there are exceptions from these rules – contact Professor Tomas Nordfjell (tomas.nordfjell@slu.se). There are also specific pre-qualifications, including at least 90 HEC (ECTS) that should be examined in the area of technology/ forest resource management. The 36-month education fulfils the requirements for Licentiate degree (120 HEC (ECTS) or 24 month). If funding will be granted it is normally possible to prolong the education to Doctoral degree (240 HEC (ECTS) or 48 month). Selection criteria are mainly based on a written application, CV and appendices, and are regulated by the Faculty of Forestry.		
Other host/topic specific requirements: The applicant should have good ability to apply a systems perspective and to analyse complex systems. This includes, for example, the ability to understand and apply theoretical frameworks, both on a general level and on specific cases and environmental systems analysis tools. Good knowledge in forest ecosystems and experience in using LCA and other environmental systems analysis tools is meriting. Further merits of value include, for example, experience from forest industry, forest management, policy making and policy analysis. Processum offers the possibility to work in cooperation with forest industry companies from the whole value chain, ranging from forest owners to industries that convert and distribute forest-based energy and products. Successful interaction with these companies requires a professional attitude and good communication skills. Specifically, good skills in written and spoken English are required. The accepted candidate will be offered to take part in the educational, research and development environment at Processum. This involves social activities as well as useful contacts with researchers and professionals in the field of biorefining.		
Host institution: Skogforsk (Stiftelsen Skogsbrukets Forskningsinstitut) www.skogforsk.se		
Host location: Sweden (Uppsala)		
Proposed PhD affiliation: Swedish University of Agricultural Sciences		

ESR8		
Project title Harvested wood products carbon assessment using ToSIA	**Duration 36 months**	**Start date April 1st 2013**
Project Description: Carbon accounting in harvested wood products is increasingly understood as an important component of carbon mitigation strategies, complementing the ecosystem carbon storage and the substitution of fossil fuels. The aim of this study is to define national forest wood chains and quantify carbon flows in products using the common product and industry groupings as used in the European and FAO statistics, using ToSIA. This work will incorporate latest wood product modelling approaches in compliance with UNFCCC accounting rules as agreed in Durban in late 2011. Different national LULUCF scenarios with alternative carbon mitigation strategies (focus on carbon in forest, bio-energy or long-lasting wood products) will be compared.		
Educational requirements: University degree (MSc or equivalent) in natural sciences (environmental sciences, wood or forest sciences, bioinformatics, agricultural sciences, computer sciences, or a related discipline).		

Other host/topic specific requirements:

- Knowledge on climate change and forestry interactions
- Solid computer skills (spreadsheets, databases)
- Experience with interdisciplinary cooperation and good systems thinking
- High motivation to work both in an international, multi-disciplinary team and independently
- Excellent English communication skills (written and oral)

Assets:

- Experience in programming
- good statistical knowledge

In context of CASTLE, EFI (an International European Interest Organization, IEIO) is considered a "country", and therefore the mobility rule means that ESRs may not have worked/studies at EFI for more than 12 months in the 3 years immediately prior to the date of the recruitment.

Host institution: EFI (European Forest Institute) www.efi.int

Host location: Finland (Joensuu)

Proposed PhD affiliation: University of Eastern Finland

ESR9		
Project title: Mitigation options through innovative wood product use	**Duration 36 months**	**Start date April 1st 2013**

Project Description: The impact of climate change on the carbon budget of forests can be assessed by applying dynamic simulation models. The biogeochemical simulation model BIOME-BGC was extended to allow the simulation of managed forest stands at plot to regional scales, including consideration of multi-species and canopy layers as well as multiple soil layers. The model was re-calibrated and validated on the basis of data from intensive forest monitoring sites and simulates the main indicators of carbon balance (GPP, NPP, NEP, NBP), but does not yet consider the life time of wood products and the resulting net sector exchange (NSE). Carbon storage in wood products is a component of the global carbon balance with significant carbon mitigation potential. This study will assess mitigation effects of different wood product utilization options using BIOME-BGC (version ZALF) linked with a wood product model.

Educational requirements:
University degree (MSc, Diploma, or equivalent) in natural sciences (ideally in forest sciences, agricultural sciences, environmental sciences, biology, geoecology, bioinformatics, computer sciences, or a related discipline).

Other host/topic specific requirements:

- Experience with dynamic modelling techniques and computer programming.
- Experience with dynamic forest models (e.g. BIOME-BGC …) is an asset.
- Familiarity with programming languages such as C/C++ and the script language of the statistical program package SPSS or related tools would be highly beneficial.

Host institution: ZALF (Leibniz Zentrum für Agrarlandschaftsforschung) www.zalf.de

Host location: Germany (Müncheberg)

Proposed PhD affiliation: University of Potsdam

ESR10		
Project title: Sustainability Impact Assessment as management tool on enterprise level	**Duration 36 months**	**Start date April 1st 2013**

Project Description: Certified environmental management systems based on ISO 14001 ff standards like eco-audit schemes (ISO 14011 ff), LCA (ISO 14041 ff), quality management systems based on ISO 9001 ff standards as well as LCC are widely implemented and accepted in industry. However, they are stand-alone systems that focus on environment, quality of enterprise management and costs of products, only. They do not assess environmental, economic and social sustainability of an enterprise and its products. Hence, a SIA tool is needed that considers all aspects of sustainability and complements existing management systems. This study will identify the requirements and prerequisites for SIA on enterprise level. It aims to evaluate benefits and limitations that SIA methods offer for company management regarding product development, controlling & benchmarking, and company policy development. Costs and trade-offs associated with a SIA will be quantified and recommendations for SIA system implementation will be given

Educational requirements:
Diploma or Master Degree in wood, environmental sciences, business economics, systems analysis or equivalent

Other host/topic specific requirements:

- Knowledge and expertise on material flow analysis, Life Cycle Assessment or Sustainability Impact Assessment
- Ability to work in a team and independently
- Highly motivated to pursue a career in science or industry
- Effective oral and written communication skills
- Fluent English oral and written is compulsory
- Candidates should be aware that work will take place in a German speaking environment. Hence, advanced knowledge of German is desirable.

Host institution: vTI (Johann Heinrich von Thuenen-Institut) www.vti.bund.de

Host location: Germany (Hamburg)

Proposed PhD affiliation: University of Hamburg

ESR11		
Project title: Implementing feedstock management and carbon tracking modules in enterprise resource planning services	**Duration 36 months**	**Start date April 1st 2013**

Project Description: Certification and sustainability issues of the total bio-energy production are becoming crucial requirements for any business in this sector. Using leading edge technology, the enterprise resource planning (ERP) service solution of MHG Systems monitors the quality and characteristics of feedstock as part of an integrated end-to-end system for managing the biomass supply chain and procurement process. New features related with sustainable bio-energy production, certification systems and emission tracking will be integrated to the MHG Bio-energy ERP Service during the project, based on results of other CASTLE studies. Several CASTLE SIA tools and methods will be tested for their commercial application potential. The goal of this study is to test and pilot the service under research with different kind of customer companies in bio-energy value chains in Finland and possibly in other countries.

Educational requirements:
MSc in Software Engineering, Forestry or Energy with a strong IT background (or equivalent degree)

Other host/topic specific requirements:
Requirements:

- Knowledge of relational databases (SQL, MySQL)
- Java programming skills
- Experience in open source software development
- IT Architecture design
- ERP (Enterprise Resource Planning) systems experience
- Good written and spoken communication skills

Assets:

- Experience in sustainability questions
- Bioenergy business understanding (supply chains)
- Marketing/Sales experience

Host institution: MHG Systems Oy www.mhgsystems.com

Host location: Finland (Mikkeli)

Proposed PhD affiliation: University of Eastern Finland

ESR12		
Project title: Footprint Indicators in Sustainability Communication	**Duration 36 months**	**Start date April 1st 2013**

Project Description: Sustainability Communication is no longer done just once a year inside the Corporate Sustainability Reporting. Sustainability footprints should be flexible, easy to communicate and accurate. At the moment the use of these indicators is not well established. They lack a solid scientific basis and there is insufficient experience in applying them in the forest based sector. Especially land use change, changes in biodiversity, water balance and carbon dynamics caused by different resource use should be better represented. Ad-hoc Reporting practices in companies' communication requires tailored indicators that face the demands of process and product development and new innovations. This study will especially focus on developing Land Use Footprint reporting as an extension of LCA in the forest-based and bio-energy industry.

Educational requirements:
The applicant has to have one of the following academic backgrounds:

- an applicable second-cycle (Master's) degree
- an applicable degree at a university of applied sciences; or
- applicable studies at a non-Finnish university providing eligibility for higher education in the country in question

In addition, eligible applicants' previous performance in the major subject of their Master's degree and the related thesis must have been at least good. If not, the students can provide additional proof of their skills in a manner agreed upon with the professor in charge of the postgraduate major subject.

Other host/topic specific requirements: -

Host institution: VTT (**VTT Technical Research Centre of Finland**) www.vtt.fi

Host location: Finland (Espoo)

Proposed PhD affiliation: University of Helsinki

ESR13		
Project title: Eco-efficient Transport	**Duration 36 months**	**Start date April 1st 2013**

Project Description: Transport is of major concern regarding sustainability, but assessments mainly focus on the impacts of transport policies or on a single organization/enterprise. Few studies have been done at the complete value chain or territorial level. A methodology for assessing transport sustainability for the FWC has been developed within the EFORWOOD project. This study will further develop and combine this approach with a methodology for the impact analysis of future bio-energy sectors (heat, electricity, fuel from plant biomass). More research is needed to grasp the streams and the associated transport (all transport modes) and the logistics dimension of the FWC. The research will mix theoretical and empirical approaches in order to include stakeholders' behaviours and their willingness to change and modify their usual practices.

Educational requirements:
Master in Economics or Engineering, with specialization in logistics/transport and economics in the last year of training.

Other host/topic specific requirements:
Skills on the following aspects would be appreciated:

- Life Cycle Assessment and/or multi-criteria analysis
- Geographical Information Systems and/or Spatial Analysis.

Basic knowledge of French language would be appreciated.

Host institution: FCBA (**Institut Technologique FCBA**) www.fcba.fr

Host location: France (Paris)

Proposed PhD affiliation: CRET LOG / Aix-Marseille University

ESR14		
Project title: GHG emissions accounting and reduction in the forest products sector	**Duration 36 months**	**Start date April 1st 2013**

Project Description: GHG emissions management at company level is spreading quickly from the regulated sectors to many actors of the economic life, in parallel with the development of product carbon footprints. In the forest products sector, few SMEs have experience in performing GHG emissions accounting or establishing the C footprint of their products. With the carbon assets of the forest products activities, it can be very useful for the companies in this sector to implement approaches to reduce their dependence on fossil fuels, document these achievements with state-of-the art carbon accounting methods and demonstrate the benefits in their business communication. The efficient implementation in a wood sector SME of a GHG emissions accounting system requires a reliable way to consider biogenic carbon fluxes and stocks in the accounting.

Educational requirements:
Master in forest/wood science or environment, or Engineer in these fields.

Other host/topic specific requirements:
Skills on the following aspects would be appreciated:

- Life Cycle Assessment/Carbon footprint/Carbon accounting
- Forest management and forest products industries.

Basic knowledge of French language would be appreciated.

Host institution: FCBA (**Institut Technologique FCBA**) www.fcba.fr

Host location: France (Paris)

Proposed PhD affiliation: AgroParisTech