

<b>Profile N° (à remplir par VAS)</b>	<b>FUNDING Planned <span style="color: red;">President</span></b>
<b>Obtained</b>	
<b>Sheet abstract of thesis 2017</b>	<b>Disciplinary Fields Ecology and Economy</b>
Thesis Title : (1-2 lines) <b>Determination of the values associated to soil biodiversity in agriculture in Europe using an integrative approach between ecology, sociology and economy</b>	
3 keywords : (1 line) <span style="float: right;"><b>ACRONYME</b> <span style="color: red;">SoilValue</span></span> <b>Soil management/ ecosystem services/ European policy for agriculture</b>	
Unit/Team of supervising : <b>Joint-supervision</b> <b>Université de Rennes 1:</b> (1) UMR 6553 ECOBIO, Equipe Réseaux d'Interactions Biotiques et Transferts de Matières Ecosystèmes (RITME) (2) UMR 6211 Centre de Recherche en Economie et Management (CREM)-CNRS <b>University of Göttingen:</b> (3) Centre of Biodiversity and Sustainable Land Use, Agriculture and Environment section (4) Department for Agricultural Economics and Rural Development, Environmental and Resource Economics chair	
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<b>Socio-economic and scientific context (10 lignes) :</b> Soils provide a wide range of ecological, economical, social, cultural functions, in particular for agriculture which is a sector representing 40% of the total land use in Europe. While soil biodiversity is a key elements providing ecosystem services, the proposition for a European Soil Directive failed in 2014. Considering the existing and potential threats on soil quality at long term, soil conservation and protection have become a major issue and it has become urgent to determine the driver for effective soil protection. This thesis is related to the European research project EraNet BiodivERsA SoilMan (lead by Martin Pothoff). The aim of SoilMan is to get better knowledge and understanding of the relationships between soil management practices, soil biodiversity and ecosystem services. The thesis will be organized jointly between France and Germany with, as main goal, to determine factors that could lead to practices changes beneficial for soil biodiversity, thus, to ecosystem services. An innovative approach is proposed, linking ecology, sociology and economy.	
<b>Assumptions and questions (8 lignes):</b> (1) How are biodiversity and interactions in the agro-ecosystems perceived and valued by farmers and local stakeholders in the field of agriculture? Does perception influence their practices choices? Can a change in this perception lead to a changes of practices at long term? (2) How do local practices and agricultural policies influence a farm evolution and which trade-offs exist between soil biodiversity preservation and cultural production? (3) Which sociological and economical values can be associated to ecosystem services provided by soil biodiversity in European agro-ecosystem? What are the limits to the monetarisation of biodiversity (common in ecological economy) and to the concept of ecosystem services in European Policy?	
<b>The main steps of the thesis and demarche (10-12 lignes):</b> In this interdisciplinary study, an inventory of soil ecosystem services perceived by local stakeholders and farmers as well as they are presented by technical documents will be realized in order to identify the drivers and obstacle for changing soil management (1). These results will be used as a basis for an economical evaluation of the value of such ecosystem services (i) at a plot scale (France) thanks to data collected in the network of experimental partner farms (long term information) and (ii) at a farm scale (economic model including socio-ecological parameters), testing the effects of European policies changes. It will allow to identify trade-offs between production performance and soil biodiversity conservation (2). The last part of the thesis is dedicated to a synthetic and critical bottom-up approach (3), that questions (i) the legitimacy that exists or not to use the concept of "services" to preserve soil biodiversity in the field of agriculture following European Policy (collaboration with Alexandra LANGLAIS) and (ii) the use of monetary valuation of biodiversity, which could lead to values conflicts with social values and with ensuring sustainability of ecological processes.	
<b>Methodological and technical approaches considered (4-6 lignes):</b> The study of perception of soil biodiversity and of benefits for farmers and stakeholders will use Focus Groups and interviews (France, Germany, Sweden, Roumania and Spain) as well as an analysis of technical documents in a time serie (France). The monetary valuation of ecosystem services will be implemented (i) at plot scale using biodiversity and economic data from experimental farms and network farms (France), and (ii) by a standardized farm model per country (see above) with a more global approach using General Equilibrium Calculation.	
<b>Scientific and technical skills required by the candidate (2 lignes):</b> The candidate should be graduated with an interdisciplinary Master's degree in ecologie and sociology and/or economy. The PhD candidate should be able to adopt a double approach : natural and human sciences.	

