



Catalogue of Partnering event profiles

“Sustainable production and management of biological resources from land, forest and aquatic environment”

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INTRODUCTION OF EVENT

The EU and India, being strategic partners, have renewed their Scientific and Technological Agreement in 2007, as a basis for a continued and intensified cooperation in all fields of research, through the definition of common joint interest and the mutual benefit of access to respective R&D programmes. In the era of rapid globalisation, the EU and India have agreed to significantly increase their science and technology collaboration as underlined at the India-EU Ministerial Science Conference (New Delhi, February 2008). India and the EU conduct research of mutual scientific interest in several fields, and also share the benefits in terms of political and socio economic developments. In this respect, the EU 7TH Framework Programme for Research and Development (FP7) offers an important window of opportunities for S&T partnership, with an already important track record of successful EU-India collaborative research.

As a step forward in EU-India S&T co-operation, the European Commission and the Government of India, Department of Biotechnology have agreed to pool their resources with reciprocal efforts in the areas of food, agriculture and biotechnology research. They recently implemented a coordinated call for EU-India research in the domain of food, health and well-being. In particular, functional foods and the reuse of by products in food processing that were targeted in this cooperation bear the potential of economic growth and putting the economy on a green path towards more sustainability.

The EU-India S&T Cooperation Days 2009 will further contribute to reinforce the EU-India S&T partnership, in various fields of life sciences and biotechnologies research and innovation. A large number of stakeholders from both India and the EU, from public and private sectors, will pave the way for future co-operation via foresight and research policy dialogues, through exchanges of information, networking and mutual training.

The EU-India S&T Cooperation Days will aim at:

1. **Informing** – highlighting the opportunities for cooperation available for European and Indian researchers (FP7 Info Day)
2. **Networking** – providing an opportunity for stakeholders from the EU and India to initiate cooperation in diverse fields of research, and to identify areas of common interest for future collaboration (Networking and Partnering Event)
3. **Training** – encouraging and facilitating participation in EU research, including practical sessions on Framework Programme 7
4. **Research policy analysis and development**- via interactive roundtable discussions to compare respective EU and India research -agendas, -potentials and -needs and to identify possible main lines of mutual interest in view of further collaboration (Round Tables).

EU-India Partnering Event

The afternoon session of 5th of November is dedicated to an EU-India Partnering Event to stimulate networking between EU and Indian researchers, in order to present together projects under FP7 or ERANET (NEW INDIGO) calls. EUINEC and EBTC are the main responsible projects for the organisation of the EU-India Partnering Event. The session will be divided into three parts:

- Presentations (10 min) by EU senior researchers on opportunities for EU-India cooperation,
- Presentations (10 min) of Indian researchers of their Organisation,
- Face-to-face meetings between the EU researchers and Indian researchers.

The presentations will be done in 4 parallel sessions: focusing on:

- Sustainable production and management of biological resources from land, forest and aquatic environment**
- Life sciences, biotechnology and biochemistry for sustainable non-food products and processes**
- Fork to farm - Food including seafood, health and wellbeing**
- Health**

The matchmaking will be done through the *EU-India S&T Cooperation Days* website www.euindiacoop.org

ORGANIZATION INVOLVED IN PARTNERING EVENT



EUINEC - *European Union and India Enhanced Cooperation Framework for Improved Bilateral Dialogue in the Field of Science and Technology*

Funded by the FP7 Capacities programme, EUINEC aims at Improving Scientific and technological cooperation between India and the EU by increasing awareness among Indian and European stakeholders about cooperation opportunities as well as capacity building activities for more successful collaboration. www.euinec.org

EBTC - *European Business and Technology Centre*



Co-funded by the EC European Commission Aid Programme and based in New Delhi since March 2008, EBTC provides support services to EU companies and researchers wanting to enter the Indian market, with a focus on technologies related to climate change and sustainable development. The Centre is therefore the reference point for the European scientific and business community who wish to strengthen ties with India, as well as for Indian interested in attain a better understanding of the European Union. Through its Biotech Cluster, EBTC will bring European biotechnology and pharma researchers to take part to the event. www.ebtc.eu



New INDIGO - *Initiative for the Development and Integration of Indian and European Research*

Funded by the FP7 Capacities programme, is a consortium of European and Indian S&T organisations involved in promoting research cooperation between Europe and India. It is intended to strengthen the international dimension of the European Research Area (ERA) by providing a networking platform for Indian and European S&T organisations.



BIO CIRCLE - *Creating a CIRCLE by extending the BIO NCP network to Third Countries*

Funded by the FP7 Co-operation programme, aims at fostering S&T co-operation between the EU and Third Countries, including India, in the area of Food, Agriculture, Fisheries and Biotechnologies

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SECTION SUSTAINABLE PRODUCTION AND MANAGEMENT OF BIOLOGICAL RESOURCES FROM LAND, FOREST AND AQUATIC ENVIRONMENT

PROFILE	
SPAIN	Dr. Juan Jose Alarcon
	jarcon@cebas.csic.es
<i>Areas of activity</i>	WATER SUSTAINABLE MANAGEMENT IN AGROSYSTEMS: Crop production; Drought; Evapotranspiration; Fruit quality; Salinity, Irrigation; Plant water relations; Photosynthesis; Soil humidity; Water use efficiency, Wastewater reuse.
ORGANISATION	
<i>Name</i>	CEBAS-CSIC
<i>Type</i>	Research Center
<i>Short description</i>	The Consejo Superior de Investigaciones Científicas (CSIC) is the largest public multidisciplinary research organisation in Spain. It has a staff of more than 10000 employees, among these 3202 scientists and about 3802 pre and postdoctoral researchers. The CSIC has been the 5th organisation in Europe in project execution and funding in 6th Framework Programme. Centro de Edafología y Biología Aplicada del Segura (CEBAS-CSIC, Murcia) is coordinating SIRRIMED "Sustainable use of irrigation water in the Mediterranean Region", an European project of FP7. Irrigation Department of CEBAS-CSIC carry out scientific research and develop technology directed at improving agricultural development within a sustainable use of natural resources for more than 20 years.
Project	
<i>Research Project</i>	Sustainable Use Of Irrigation Water
<i>Short description</i>	The project will address issues related to sustainable use of water in irrigated agricultural systems, with the overall aim of optimizing irrigation water use. The approach proposed for reaching this goal will be based in an Integrated Water Irrigation Management (IWIM) where the improved water use efficiency will be considered at farm, irrigation district and watershed scales. These strategies include innovative and more efficient irrigation techniques for improving water productivity and allow savings in water consumption. It will consider the development, test and validation of new deficit irrigation strategies, the sustainable and safe use of poor quality waters and the improvement of precise irrigation scheduling using plant sensors. These new techniques will be integrated with suitable husbandry irrigation practices. At the district scale, efforts should be directed towards an integrated policy of water allocation which accounts for the characteristics and specificity of each farm, requiring the availability of data bases and efficient management tools (decision support systems) specifically designed to fulfil the objectives of maximizing water use efficiency. At the watershed scale, priority is devoted to the assessment of new models of water governance, and the definition of strategies and policies aimed at promoting a more responsible use of irrigation water. Finally, the Project will establish a sound dissemination strategy for transfer of knowledge towards the end users, with a real participatory approach to facilitate an adequate involvement of stakeholders (farmers, association of irrigation users, water authorities and SMEs)

<i>Expertise offered</i>	Researchers specialised in irrigation, crop production and new technology to improve the water use efficiency in the agricultural systems.
<i>Requested partner expertise</i>	Local companies, research centers and/or universities interested in the application of new technology in order to improve the water use efficiency in the agriculture. Senior researchers interested in the development of collaborative projects, and also students and junior researchers interested in programs of training in Spain.

PROFILE	
SWEDEN	Mr. Börje Brandt
	borje.brandt@ergono.se
	Owner
<i>Areas of activity</i>	Mobile modular living habitat (container-like), self sufficient of electric power, potable water, greenhouse and wastewater incl. top-soil toilet.
ORGANISATION	
<i>Name</i>	Regulus teknikutveckling
<i>Type</i>	SME
<i>Short description</i>	Regulus teknikutveckling is working with future-like ideas and proposals, within IT, Environment and space.
PROJECT	
<i>Research project</i>	Self sufficient mobile modular living habitat
<i>Short description</i>	<p>The basic idea around the “container like” modular living habitat is an idea of a “first time house” for those many hundreds millions of people living on our earth, without any protection over their heads, their family and children. Also for those who lives in areas of local and regional catastrophic areas with earthquakes that have got their houses destroyed and needs new roof over their heads, and overpopulated cities (so called shantytowns, were it’s a major problem with the infrastructure of water, sanitation, power supply)</p> <p>These habitats could also be used a healthcare clinics, schools, administration etc. in many developing countries, and also as camps for climate refugees. Ideas about temporary living habitats for students, people working distance from home etc. It is built on the principle of an container model that fast and easily can be loaded, transported and put on place by vehicles that today are normally used for container cargo transports by land, sea and air. Should also be able to mount a detachable wheel section under the modular for transports with a light truck/lorry.</p>
<i>Expertise offered</i>	Development and design expertise.
<i>Requested partner expertise</i>	Building engineers/technicians for modular container-like living habitat systems, low electricity power/12-24 w (solar power/battery), greenhouse / Hydroponic watering system engineers/UV-protected, multilayer polycarbonate greenhouse systems, low electricity system for kitchen 12-24 w (fridge, freeze and stowe) topsoil toilet system.

PROFILE	
ITALY	Dr Filomena Carriero
	fcarriero@agrobios.it
	Senior scientist
ORGANISATION	
<i>Name</i>	Metapontum Agrobios
<i>Type</i>	Other
<i>Department</i>	Plant Biotechnology
<i>Short description</i>	<p>Agrobios has extensive experience with molecular breeding of tomato. In the area of biotic stresses, new tomato lines with viral resistance using pathogen derived resistance (PDR) approach have been developed. At present ongoing research programs have as target the improvement of tomato fruit quality by means of in planta expression of genes involved in carotenoid and flavonoid pathways.</p> <p>Agrobios has also a strong experience with TILLING technology. A tomato TILLING platform useful both for basic research studies and for isolating lines having new agronomic and nutritional traits has already been developed and available for the research community. At present, a durum wheat and a rapeseed TILLING platform development are in progress.</p> <p>Agrobios has carried out and still has in progress big research programs on wheat genomics by developing BAC and expression libraries, genomic library enriched in repetitive motives and durum wheat cDNA microarray.</p>
PROJECT	
<i>Expertise offered</i>	Experience in mutant collection development and TILLING platform set up.

PROFILE	
ITALY	Prof. Mauro Centritto
	mauro.centritto@cnr.it
<i>Areas of activity</i>	Associate Professor Arid ecosystems, “climate proof” plant species, drought resistance, germplasm collection, mitigation strategies, soil fertility, water harvesting, WUE
ORGANISATION	
<i>Name</i>	National Research Council
<i>Type</i>	Research Center
<i>Department</i>	Institute of Agro-Environmental & Forest Biology
<i>Short description</i>	Consiglio Nazionale delle Ricerche is the Italian Governmental Research Organisation and one of the European leading research institutions. The Institute for Agro-Environmental and Forest Biology, focuses on studies of the interaction plant-environment at different level: from the biochemistry of leaf organelles, to single leaves, to individual plants, to populations and plant communities, cultivated or natural. Basic research is therefore strictly tied with applied experiments, to the aim of helping in addressing environmental, agricultural and forest problems, with emphasis on those peculiar of the arid and semi-arid areas.
PROJECT	
<i>Research project</i>	Climate proof plants with high ecological potentials
<i>Short description</i>	The area of investigation on “climate proof” plants is still rather novel because there is very little information on the ecophysiology and molecular variability in water use of plants growing in arid environments. The characterization of “climate proof” plants with high agro-ecological potentials has enormous relevance to mitigate the effect of drought and consequently to halt desertification and land degradation. This project identifies a need for better research coordination and our project aims to address this need by developing a clearly identifiable, dynamic and durable community. Establishing this community will encourage greater inter-disciplinarity and increasing knowledge of drought and mitigate the adverse effects of climate change.
<i>Expertise offered</i>	Structure and functioning of terrestrial ecosystems with emphasis on carbon metabolism (photosynthesis, photorespiration, mitochondrial respiration), in order to estimate primary productivity in response to climate change and the exchange of CO ₂ between plants and the atmosphere; Water use efficiency and its relation with mechanisms of resistance to stress factors and with plant productivity, through the use of integrated indices such as the analysis of isotope exchanges between plants and the atmosphere; Photosynthesis limitation and regulation, focussing on the study of resistances to CO ₂ diffusion from the atmosphere to the chloroplasts and on the study of excess light and on the consequent mechanisms of dissipation and protection; Vegetation spectral signature (inter-specific and intra-specific) relationship between spectra and physiological status, and the effects of environmental stress on plant spectral signature; The effects of novel, sustainable irrigation practices (deficit irrigation systems, partial root drying) on plant water relations and water use efficiency in order to develop a better physiological understanding of the mechanisms controlling plant growth and yield as a basis for developing approaches to the optimization of irrigation.

<i>Requested partner expertise</i>	Environmental Biology and Environmental Physiology of Plants, Agricultural and Forest Meteorology, Agronomy. Special interests in regulation of growth and functioning of plants subjected to environmental perturbation, extreme environments (water and carbon relations, growth and survival, energy balance; natural and polluted environments), carbon sequestration and evaporation of water in relation to global environmental change.
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PROFILE	
GREECE	Dr. Konstantinos Chartzoulakis
<i>Areas of activity</i>	Director
<i>Areas of activity</i>	Sustainable agriculture, soil and water resources management in agriculture
ORGANISATION	
<i>Name</i>	National Agricultural Research Foundation
<i>Type</i>	Research Center
<i>Department</i>	Institute for Olive Tree and Subtropical Plants
<i>Short description</i>	<p>The Olive Tree and Subtropical Plants Institute is one of the research Institutes of the Hellenic National Agricultural Research Foundation (NAGREF) located in Chania, W. Crete. The Institute has 17 PhD researchers in various departments and more than 50 technical staff. It is well equipped with major facilities (analysis laboratories, experimental fields, etc.) and has the adequate experience in carrying out EU projects. The main purpose of the Institute is the design and execution of research on problems of the main crops of Crete. Other activities include transfer of technology to farmers and enhancement of product quality standards by means of rational use of cultivation techniques and production factors.</p> <p>The research projects of the Department concern the improvement of water use efficiency in irrigated agriculture, the use of low quality waters (saline, reclaimed, etc) for irrigation and their impact on the soil and the plant, the crop farming system (integrated, biological, etc) plus stress physiology studies (drought and salinity stress).</p>
PROJECT	
<i>Research project</i>	Sustainable management of soil and water resources in irrigated agriculture
<i>Short description</i>	Development of an irrigation advisory system to improve water use efficiency at farm level
<i>Expertise offered</i>	Irrigation water management (techniques and strategies for improving water use efficiency), reuse of low quality waters for irrigation (treated wastewater, saline water, etc.), physiological responses of plants to abiotic stresses, soil management for reducing water and nutrient losses
<i>Requested partner expertise</i>	Irrigation of subtropical crops, ecophysiology of subtropical crops, modelling on plant responses to environmental factors, biotechnology

PROFILE	
INDIA	Dr Sanjeev Chauhan
	chauhanpau@rediffmail.com
<i>Areas of activity</i>	Associate Professor Forestry Agroforestry and carbon sequestration
ORGANISATION	
<i>Name</i>	Punjab Agricultural University
<i>Type</i>	University
<i>Department</i>	Forestry & Natural Resources
<i>Short description</i>	Punjab Agricultural University was established during 1962 and played a major role in green revolution in the country. University was awarded first best Agricultural University Award by ICAR New Delhi. University has four colleges and Research station and Krishi Vigyan Kendras in almost all the districts of the state, Punjab.
PROJECT	
<i>Research project</i>	Carbon sequestration under tree-crop interface
<i>Short description</i>	The land resources are fixed and there is little scope to extend horizontally therefore we have to explore the possibilities vertically. Agroforestry (tree and crops) is one of the viable options for sustainable management of land, which otherwise has not remained sustainable under traditional crop rotations. The growing carbon market may offer additional avenues to the farmers therefore the quantification of carbon sequestration potential of tree-crop interaction systems is essential, which is under study.
<i>Expertise offered</i>	Presently we are working on the agroforestry systems for their adoption and already one adhoc project has been completed on carbon sequestration but short term projects do not serve the purpose and we need to extend the activities.
<i>Requested partner expertise</i>	We have poor instrumentation which ultimately affects the data generation. The methodology/modeling aspects on the studies are also required to be given due consideration.

PROFILE	
ITALY	Dr Fabrizio Cillo
	f.cillo@ba.ivv.cnr.it
<i>Areas of activity</i>	Research scientist Plant viruses and virus-like pathogens. Molecular plant-virus interactions (pathogenesis, defense responses, functional genomics, RNA silencing). Crop protection, genetic resistance and genetic engineering for resistance.
ORGANISATION	
<i>Name</i>	National Research Council
<i>Type</i>	Research center
<i>Department</i>	Institute of Plant Virology
<i>Short description</i>	Research area: Agro-Food Research fields: Studies on plant viruses and virus-like pathogens (viroids and phytoplasmas). Biological and molecular characterization of plant viruses. Molecular plant-virus interactions (pathogenesis, defense responses, functional genomics, RNA silencing). Crop protection, genetic resistance and genetic engineering for resistance. Serological and molecular diagnosis, electron microscopy. Improvement of the sanitary status of plant propagating material. Sustainable methods to control plant virus and virus-like diseases.
PROJECT	
<i>Research project</i>	Defense responses to viral infections in tomato
<i>Short description</i>	Among genes whose expression is altered in the course of interactions with viruses, a key role is played by regulators of the expression of wide groups of target genes such as transcription factors (TFs), that among other functions contain several members involved in controlling plant defense responses. At CNR-IVV a tremendous effort in understanding plant defense responses through transcriptomic approaches is being undertaken, and it has been recently discovered that tolerance of tomato (<i>Solanum lycopersicum</i>) plants to infection of mild strains of viruses (e.g. CMV) correlates with higher expression levels of a TFs, and that enhanced TFs expression is regulated by a specific microRNA (miR) pathway in addition to other unidentified mechanisms. Objectives of the proposed research project are: a) Analysis of the effects of viral infections on the expression of selected TFs in tomato; b) Elucidation of the role of miR in the regulation of TFs in the course of infections; c) Functional analysis of selected TF genes in transgenic/mutant tomato lines and evaluation of their effects on enhanced resistance/tolerance to viruses; d) Investigation on TF regulation mechanisms, including RNA silencing, signaling pathways, protein-protein interactions etc.; e) Contribution to applied research aiming to introgressing disease resistance traits in cultivated varieties.
<i>Expertise offered</i>	Molecular plant biology and virology, Plant transformation, RNA interference, functional genomics, transcriptomics, gene and miR expression profiling and protein analysis.
<i>Requested partner expertise</i>	Molecular plant biology and virology, biotechnology, plant genetics and genomics, proteomics

PROFILE	
UK	Ms Sarah Collier
	Sarah.Collier@scri.ac.uk
<i>Areas of activity</i>	<p>SCRI's research focuses on processes that regulate the growth of plants and their responses to pests, pathogens and the environment. It includes genetics to breed crops with improved quality and nutritional value as fast as possible.</p> <p>By understanding plants' responses to pests and diseases and how they react to the soil, air and water around them, environmentally friendly and sustainable methods of protecting crops from the ravages of pests, diseases and weeds are developed.</p>
ORGANISATION	
<i>Name</i>	Scottish Crop Research Institute
<i>Type</i>	Research Center
<i>Short description</i>	<p>SCRI is Scotland's leading institute for research on plants and their interactions with the environment, particularly in managed ecosystems. Our research products are internationally recognised.</p> <p>Our mission is to conduct excellent research in plant and environment sciences. We are studying the likely impact of climate change on Scotland and the wider world. Our vision is to deliver innovative products, knowledge and services that enrich the life of the community and address the public goods of sustainability and high quality and healthy food.</p>
PROJECT	
<i>Expertise offered</i>	Genetics, Plant breeding, Metabolomics, Virology, Pathogen-host interactions, Soil science

PROFILE	
UK	Dr. Alan Feest
	a.feest@bris.ac.uk
<i>Areas of activity</i>	Senior Lecturer
	Biodiversity measurement related to production methods especially for biofuels
ORGANISATION	
<i>Name</i>	University of Bristol
<i>Type</i>	University
<i>Department</i>	Water and Environmentla Managment Research Centre
<i>Short description</i>	Career relevant training and education plus environmentla reasearch
PROJECT	
<i>Research project</i>	The biodiversity impact of biofuel crops

<i>Short description</i>	We are measuring the broad impact on biodiversity quality of various biofuel crops as compared to more traditional crops
<i>Expertise offered</i>	biodiversity assessment and sampling. Taxonomic expertise in some specialist groups
<i>Requested partner expertise</i>	Tropical experience of biofuel crops substituting for traditional crops

PROFILE	
UK	Dr. Mark Fisher
	Mark.Fisher@uea.ac.uk
	Senior Lecturer
<i>Areas of activity</i>	Computer Vision, Microscopy, Image Understanding Systems
ORGANISATION	
<i>Name</i>	University of East Anglia
<i>Type</i>	University
<i>Department</i>	Computer Sciences
<i>Short description</i>	The University of East Anglia is home to 14,000 students and is situated on a parkland campus on the outskirts of Norwich (http://www.uea.ac.uk). The John Innes Centre, Institute of Food Research and Centre for Environment, Fisheries and Aquaculture Science are affiliated research institutes situated close to UEA's campus.
PROJECT	
<i>Research project</i>	Automated analysis of Otolith Images
<i>Short description</i>	This project is in collaboration with the Centre for Environment, Fisheries and Aquaculture Science, Lowestoft (an affiliated UEA research institute). Microscopic analysis of Otoliths (fish ear bones) provides valuable information as the calcification structure encodes a history of the animal's life. For example, human analysis of otoliths is routinely used to determine age but their shape has a specific form which has been used to identify species and populations [1]. Using digital image analysis to characterise otolith shapes represents a challenging problem in automatic classification [2]. The related problem of automatic extraction of age related features and the development of a machine vision system to release human experts from this boring task would be of significant financial value.
<i>Expertise offered</i>	Computer Vision, Image Processing
<i>Requested partner expertise</i>	Biological and Environmental Scientists with interests in sustainable management of aquatic resources.

PROFILE	
SWITZERLAND	Dr. Peter Gallmann
	peter.gallmann@alp.admin.ch
<i>Areas of activity</i>	Head of Bee Research Centre
	Honey Bee, Hive Products
ORGANISATION	
<i>Name</i>	Swiss Bee Research Centre, Agroscope ALP, Liebefeld
<i>Type</i>	University
<i>Department</i>	Bee Research
<i>Short description</i>	The Swiss Bee Research Centre (SBRC) is part of AGROSOPE the Swiss governmental agricultural research stations. SBRC has more than 100 years of experience in applied bee research and knowledge transfer to the beekeepers branch. SBRC has approx. 15 staff plus some PhD and master students.
PROJECT	
<i>Expertise offered</i>	<ul style="list-style-type: none"> a) Bee pathogens and control of b) Beekeeping and -management / relation to agriculture and environment c) Beeproducts: Quality and authenticity

PROFILE	
GREECE	Mr. Theofanis Gemtos
	gemtos@agr.uth.gr
<i>Areas of activity</i>	Head, farm Mechanisation Laboratory, University of thessaly
	Farm Mechanisation, soil tillage, biomass production, precision agriculture
ORGANISATION	
<i>Name</i>	University of Thessaly
<i>Type</i>	University
<i>Department</i>	Agriculture, Crop Production and Rural Environment

PROFILE	
GERMANY	Prof. Albrecht Gnauck
	umweltinformatik@tu-cottbus.de
<i>Areas of activity</i>	Professor Ecosystem Modelling, Water quality modelling, sustainable natural resource management, Mangrove wetlands management, climate change impacts, Ecosystems services, Food Security etc.
ORGANISATION	
<i>Name</i>	Brandenburg University of Technology in Cottbus
<i>Type</i>	University
<i>Department</i>	Ecosystems and Environmental Informatics
<i>Short description</i>	Brandenburg University of Technology is one of the best technical university in Germany. It is the only Technical university of Brandenburg State in Germany. The Department of Ecosystems and Environmental Informatics is a pioneer department of this university. It is the place for applied ecosystems research.
PROJECT	
<i>Research project</i>	Food Security and Ecosystems Services under Threatened in the Coastal Region of Bangladesh
<i>Short description</i>	The coastal ecosystem of Bangladesh is supporting more than 15% of the total population (133 million in 2008) of the country, is under varying degrees of environmental threats due to anthropogenic and climate change impacts. The global warming and climate change impact are a new threat for the coastal community of Bangladesh. The environment and the people of Bangladesh will be particularly affected by climatic impacts and Sea Level Rise (SLR) changes. This perspective and the already existing pressure on limited resources aggravate any effort to advance the country's socio-economic development. The Bangladesh coastal zone is the low lying zone in the world where 35 million people are living within 1 meter elevation from the high tide level. Thousands of small islands on rivers and coastal deposits (Chars) constitute the most vulnerable environment. The cultivation of crops arose independently in the coastal area of Bangladesh but it is under threat due to anthropogenic and climate change impacts. This is because climate change can cause SLR and upstream fresh water extraction can changes that could damage farmland, agricultural crop production and human settlements which lead to ecosystem services, food insecurity and poverty in the coastal society. Therefore, measures need to be taken to develop and maintain these coastal zones of Bangladesh and its ecosystem services in order to fight against food insecurity and poverty in the society. It has also been predicted that due to salinity intrusion and tidal inundation about 20% of cultivable land and 17 million coastal people will have to be displaced by 2030. The global climate change and environmental problems are both local and global in nature and have to be tackled collectively by the community participation within the inter-governmental cooperation. With the trends of population increase (population growth rate 2.2 %), anthropogenic influences on freshwater, natural calamities and food security should be the emergence issues and it should be solved within the collective efforts and initiatives. The research will be carried out as a case research in the coastal areas in three steps; such as literature reviews, data collection from two case areas and field investigation, data analysis, visualisation and writeup. GIS application would be a proper tool for the

<i>Expertise offered</i>	decision makers to make a appropriate plan. The objective of this research is to develop a comprehensive integrated framework for strategic environmental plan for ecosystem services, food security and poverty alleviation that could meet the needs of the present 35 million inhabitants of coastal community of Bangladesh.
	5 expertise from Bangladesh , 2 expertise from India and 3 expertise from Germany are offered at this proposed research proposal. beside these one post doctoral research fellows, and 4 research assistant are offered to do applied research in Bangladesh coastal region on food security.

PROFILE	
SPAIN	Prof. Esther Gonzalez
	esther.gonzalez@unavarra.es
	Associate Professor
<i>Areas of activity</i>	Abiotic stress, drought, plant physiology, carbon and nitrogen metabolism
ORGANISATION	
<i>Name</i>	Universidad Pública de Navarra
<i>Type</i>	University
<i>Department</i>	Environmental Sciences
<i>Short description</i>	UNIVERSITY (High Education & Research)
PROJECT	
<i>Research project</i>	Abiotic stress in cultivated plants
<i>Short description</i>	Drought effect on root growth of cultivated plants
<i>Expertise offered</i>	Analytical techniques set up in the group are capillary electrophoresis coupled to laser detection, ionic chromatography and mass spectrometry. Plant physiology techniques include shoot and root gas exchange equipments and instruments for plant water relation studies. Facilities for growing plants under controlled conditions and experimental fields are also available. All necessary know-how for molecular biology and plant physiology is available.
<i>Requested partner expertise</i>	Agronomist, Molecular Biologist

PROFILE	
Uk	Dr. Stephen Jackson
	stephen.jackson@warwick.ac.uk
<i>Areas of activity</i>	Research Leader Flowering/harvest time
ORGANISATION	
<i>Name</i>	Warwick University
<i>Type</i>	University
<i>Department</i>	Warwick HRI
<i>Short description</i>	Warwick University is consistently ranked as being one of the top 10 Universities in the UK for both research and teaching. The department of Warwick HRI was ranked as the top research centre in the UK for Agriculture and Food in the last government research assessment exercise. Warwick HRI has world-class facilities and internationally recognised scientists conducting pioneering research in areas of crop science and technology. We apply our multidisciplinary expertise to solving major challenges in areas such as crop science, bioenergy, systems biology and climate change.
PROJECT	
<i>Research project</i>	Manipulation of flowering time in crop plants
<i>Short description</i>	To identify or create novel alleles in flowering time genes that can be used to control the flowering and harvest time of economically important crops, eg. Pea, for greater seasonal extension or for more rapid crop rotation.
<i>Expertise offered</i>	Molecular Breeding, Molecular Genetics,
<i>Requested partner expertise</i>	Experience of growing and working with economically important crops where the manipulation of flowering/harvest time is desirable.

PROFILE	
LITHUANIA	Dr. Radusiene Jolita
	jolira.r@botanika.lt
	Senior researcher
Areas of activity	Medicinal and aromatic plants (MAP), plant genetic resources, bioactive compounds, flavonoids, essential oils
ORGANISATION	
Name	Botanika Institute
Type	Research Center
Department	Economic Botany
Short description	The Institute of Botany, a State Research Institute, leads the research on plants, fungi and microorganisms in Lithuania. The Institute conducts scientific research in botany, mycology, virology, phytopathology, vegetation science, and vegetation mapping, plant physiology and genetics. The Institute possesses the Field Experimental Station with field collections of Medicinal and Aromatic plants.
PROJECT	
Research project	<i>Evaluation and sustainable use of medicinal and aromatic plant resources under environmental changes</i>
Short description	At present only a few MAPs crops cultivated for their phytochemical ingredients. Many additional plants that could serve the rapidly growing market of drugs are under-utilized and their resources become threatened. There are major gaps in our knowledge in their use, quality and diversity. The objectives of the project are to establish a trans-national expert network regarding indigenous MAPs resources and their maintenance, ethnopharmacologic knowledge, evaluation and analytical tools for quantification of bioactive ingredients, cultivation and marketing of raw material. We offered multidisciplinary scientific research on MAPs taking into consideration traditional, demographic, trade and legal aspects of their sustainable use and conservation.
Expertise offered	Inventory and distribution of the MAP species, intraspecific chemical (phenolics and essential oils) diversity, conservation of genetic resources.
Requested partner expertise	Evaluation of medicinal and aromatic plants resources, ethnobotanical knowledge on plant uses, analytical experience, cultivation and marketing knowledge

PROFILE

SPAIN	<u>Dr Avraam KARAGIANNIDIS</u>
	makis@aix.meng.auth.gr; akarag@auth.gr
	Assistant Professor, Dr. Mechanical Engineer, MSC in Environmental Management
<i>Areas of activity</i>	Waste-to-energy, Sustainable waste management

ORGANISATION

<i>Name</i>	Aristotle University of Thessaloniki
<i>Type</i>	University
<i>Department</i>	Department of Mechanical Engineering, Laboratory of Heat Transfer and Environmental Engineering (LHTEE)

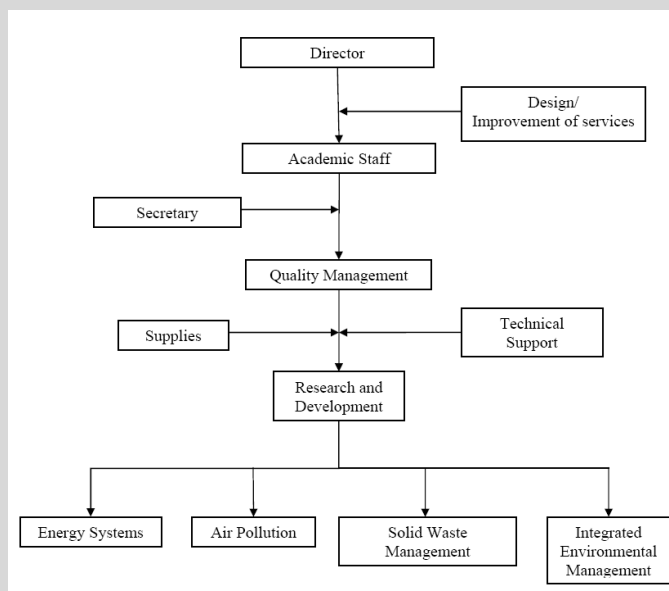
Since its establishment in autumn 1989, AUT-LHTEE has been an integral part of the Energy Section of the Mechanical Engineering Department, operating within the legal framework applying to Greek Universities. This legal framework regulates the broad aspects, and also frequently the details, of educational and research policy. There are, however, measures that the Laboratory has applied, on its own initiative, to improve the quality of the work carried out.

Within this line of policy, the Laboratory established in 2006, and since then maintains, a quality management system conforming to the international management system standard ISO 9001:2008, with a scope of:

- Energy systems and technology
- Air pollution
- Solid waste management and
- Integrated environmental management

The Laboratory structure is depicted in the following schematic.

Short description



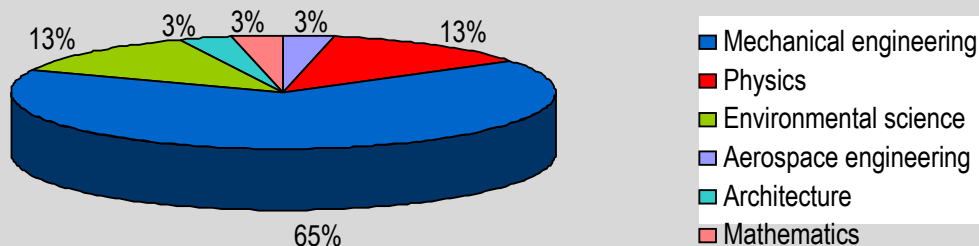
The Laboratory’s academic staff consists currently of three members:

- Nicolas Moussiopoulos, Professor, Dr.-Ing. habil. (Director)
- Agis Papadopoulos, Associate Professor, Dr.-Eng., MSc
- Avraam Karagiannidis, Assistant Professor, Dr.-Eng., MSc

As of summer 2009, twelve Doctorate holding senior researchers and twenty researchers and Doctorate candidates are involved in research and educational activities.

The secretarial and technical support team consists of seven members. Full lists of the Laboratory's current and former staff members are given in section 9.

As the Laboratory supports the interdisciplinary approach to environmental problems, the research team consists of mechanical engineers, physicists, environmental scientists, mathematicians and architects, as depicted in the below pie-chart.



The tasks of the staff members are portrayed in the job descriptions that highlight their relevance and importance within the quality management system, indicate their daily work related duties and decision making, and define ethical rules and boundaries. All researchers, secretarial and technical staff are fully competent to suggest new and enhanced methods of working practice, through continuing education, targeted training, creative motivation and incentives, also in compliance with the requirements of the ISO 9001:2008 standard.

PROJECT

Research project

International Waste to Energy Research and Policy Network

Goal is to establish at an international level scientific, academic, and regulatory consensus that waste-to-energy is safe, does not contribute to climate change, and is a net greenhouse gas reducer. Individual objectives of this project include:

Short description

- a. Engage prominent and respected academics, non-academically affiliated scientists and engineers, government officials and other professionals from key regions in the world to form a working group to support waste-to-energy by means of position papers, speaking engagements, conferences, and research projects. Of particular importance is the development of a formal "White Paper" from the above group supporting the goals of the Network;
- b. Identify key environmental groups worldwide to support waste-to-energy projects and the activities of the Network;
- c. Engage and inform opposing environmental groups with particular attention to their scientists and technical staff;
- d. Identify and collect all known scientific data and documents related to the environmental and human health impacts of waste-to-energy and develop a comprehensive waste-to-energy (WTE) literature database.

Expertise offered

Based on its expertise in energy systems and environmental sciences, AUTH-LHTEE and its solid waste management group compiles and proposes innovative solutions in various domains associated with industrial production. In the last years, the implementation of Integrated Product Policy has become a major activity area. In that direction, the application of Life Cycle Assessment/Costing (LCA/LCC), Material Flow Analysis and Ecodesign is an obvious option for enterprises wishing to establish production lines and consumption patterns of environmentally friendly products that will contribute to the minimisation of waste. Both basic and applied research is carried out and qualified support is provided in both pre- and post-consumer solid waste management, with major areas being optimized waste collection, treatment and disposal; restoration of contaminated land; layout and implementation of solid waste related policies aiming at avoidance, reduction, reuse, recycling, recovery and re-integration (multi-R principle); design for disassembly and the environment. AUTH-LHTEE also has a strong involvement in research activities related to waste management economics. Studying externalities, as they occur due to improper practices, is a prerequisite in order to internalise them into rational cost structures of solid waste management. The tools used for this purpose are material flow analysis, input-output modelling, mixed-integer programming, systemic analysis, market research for recycled goods and appropriate technologies, SWOT and PEST analyses, scenario simulations, multi-criteria analysis of alternative solutions and LCA/LCC. In terms of contaminated-site and derelict-land restoration, work is undertaken in a large extent on waste related issues (restoration of both small-sized wild dump, as well as of large-size semi-controlled landfills, with eventual resource recovery) as well as with quarry rehabilitation and with contaminated land management in a more generic sense. Next, significant work is on-going on the rational waste management in the industrial and commercial sector with emphasis on the design of waste avoidance and processing systems and on pricing policies for environmental services. Part of the research work in this field is the optimisation of managing dedicated waste streams. Last but not least, Waste-to-Energy is a field with significant past, present and future focus. On-going and future research plans in solid waste management include extending the work of the integrated energetic utilisation of waste materials with emphasis on renewable energy, biofuels and a new emerging taxonomy in the related reverse logistics chain, through a chain of processes including combustion, pyrolysis, gasification (also in multi-stage modules), as well as (both process and landfill) anaerobic digestion (on an urban, agricultural and industrial scale) and industrial (co-)combustion of various waste derived fuels, both process and external. It is also intended to conduct research and support demonstrations towards assessing the external costs of solid waste management in Greece, with special emphasis on the potential of waste-to-energy options and the related Kyoto implications, as well as on waste minimisation in the industrial sector, biofuels and biorefineries, together with associated advanced financial tools. Further information on <http://aix.meng.auth.gr>.

Requested partner expertise

Indian scientific and industrial partners involved in waste-to-energy and sustainable waste management.

PROFILE	
INDIA	<u>Dr Uday Khodke</u>
	umkhodke@rediffmail.com
	Cheif Scientist /Head
<i>Areas of activity</i>	Water management, Irrigation & drainage, non-point source pollution, solute transport, sustainable water resource management, waste utilization, agricultural water balance
ORGANISATION	
<i>Name</i>	Marathwada Agricultural University Parbhani
<i>Type</i>	University
<i>Department</i>	Water Management, Irrigation & Drainage & Soil Science
<i>Short description</i>	<p>Marathwada Agricultural University has currently more than 250 faculty and is entrusted with the responsibilities to provide education in agriculture and allied fields, undertake research and facilitate technology transfer in Marathwada region of Maharashtra. University provides education in agriculture, allied sciences and humanities. The university provides research base to improve the productivity of important agri-horticulture, livestock, fisheries and agri-allied activities of Marathwada region and also develops appropriate plans for conservation of natural resources and sustainable use. Soils of Marathwada region are classified as Vertisols. Soils under irrigation projects like Jayakwadi and Purna becoming sick due to water logging & salinisation. The major crops of the region are Sorghum, Cotton, Pigeonpea, Sunflower, groundnut, Beans, Maize, Sugarcane supported by the fruit crops like banana, sweet orange, grapes, mango, papaya, guava and vegetables tomato, brinjal, cucurbits, cabbage, cauliflower, onion, melons, garlic, turmeric, ginger, leafy vegetables etc.</p> <p>The university runs many coordinated research projects under Indian Council of Agricultural Research New Delhi and other projects with the funding of State and Central Government and industrial organizations.</p> <p>The university has well established basic agriculture departments like Agronomy & Soil Science where the facilities of Plant, soil and water analysis are available.</p>
<i>Research project</i>	<p>Sustainable management and bulk reuse of fly ash in the light of soil and groundwater resource protection and food /drinking water safety.</p> <p>There are 85 coal based thermal power plants in India, which use bituminous or sub-bituminous coal. India's dependence on coal as a source of energy shall continue into the next millennium and therefore, coal ash management would remain an important area of national concern. Huge tracts of land used for disposal and storage of coal ash are rendered unfit for further use. In India, coal-based power production contributes to 70% of total power consumption, and is fast growing. This results in annual generation of about 100 Mt of fly ash, with prospects of reaching 180 Mt/year by 2012 and its increasing massive application in agriculture and as a structural fill.</p> <p>Feasibility of using ash needs to be assessed in the prevalent cropping pattern and soils of subtropical region from environmental point of view. Availability of quantitative information on the movement of water and heavy metals and crop response in relation to application of ash in variably saturated soil water regimes under field conditions is scanty.</p> <p>Project is aimed to elucidate temporal transformations of properties of fly ash applied as soil amendment and as a structural fill for sustainable protection of the environment and natural resources. To achieve this goal, mineralogical and physicochemical studies of weathering transformations of fly ash and composition of pore solutions in objects of</p>
<i>Short description</i>	

<i>Expertise offered</i>	<p>different defined age such as surface structural fill, opencast mine fillings, active and closed landfills (ponds) of power plant fly ash, groundwater quality in their vicinity as well as fly ash amended soils will be carried out. The anticipated outcome of the joint project will be: (1) reliable long-term assessment of the environmental safety of groundwater and agroecosystems at fly ash use as surface structural fill and in agriculture as soil amendment; (2) guidelines on environmentally safe fly ash management with a focus on the principles of sustainable development .</p> <p>The University has almost all the basic equipments for the analysis of soil and water. It has well established departments of soil and crop science and soil and water engineering. The infrastructure facilities of the University are extended in eight major districts of the state with extension wings.</p> <p>The research team of the University include highly qualified Agricultural scientists, Agricultural Engineers in many research projects supports working in in other areasof specialization. The collaboration with the State departments of Agriculture, Horticulture and Irrigation can help well in implementing the project.</p>
<i>Requested partner expertise</i>	<p>We will be working as one of the partners in a project proposed by IEE-PAS. Their research team includes highly qualified hydrogeologists, geologists, mineralogists, chemists and soil scientists, also from other research institutions permanently collaborating with the Laboratory in many research projects. They have one of the best advanced analytical equipment required for proposed research, including ICP-MS Elan DRC-e (Perkin-Elmer), EDXRF Epsilon 5, Ion Chromatograph GC/ECD, GC/FID, GC/MS, POLARIS (Varian), Ion Chromatograph METROHM, Beckma Coulter CEN, AVANTI J-25, Fritsch particle sizer, vibratory sieve shaker analysette, 3 SPARTAN (Fritsch) and other equipments such as FAAS Jarrell Ash AA Scan (Thermo) as well as access to other equipment when needed</p>

PROFILE	
ITALY	<p>Dr. Gaetano Laghetti</p> <p>gaetano.laghetti@igv.cnr.it</p> <p>Senior researcher</p>
<i>Areas of activity</i>	Plant genetic resources
ORGANISATION	
<i>Name</i>	Plant Genetics Institute
<i>Type</i>	Research Center
<i>Department</i>	Food Agriculture
<i>Short description</i>	<p>The Institute of Plant Genetics (IGV) of the Italian National Research Council (CNR) was established in 2002 by the fusion of five pre-existing organs of the CNR localised in central and southern Italy, with the aim of employing research on plant genetics to answers important agricultural problems. In times of climatic and economical changes that often dramatically involve farmers and producers, the mandate of the IGV assumes a particular importance.</p> <p>The IGV is organised around six national programmes approved by the CNR and funded also by governmental projects and private sector; one of these programmes is specifically aimed at characterizing and utilising Plant Genetic Resources. The IGV is also the only CNR institute participating to the nationwide project aimed at the national implementation of the “International Treaty on Plant Genetic Resources”, ruled by the Research Council in Agriculture.</p>

PROJECT	
<i>Research project</i>	Safeguarding and evaluation of plant genetic resources
<i>Short description</i>	Collecting, characterization and exchange of Indian and Italian landraces and wild relatives
<i>Expertise offered</i>	Exploration, collecting, morpho-agronomic and molecular characterization, ex situ and in situ conservation
<i>Requested partner expertise</i>	Genebank curators, plant collectors

PROFILE	
SWEDEN	Prof. Anders Malmer
	Anders.Malmer@sek.slu.se
	Professor & Deputy Head of Department
ORGANISATION	
<i>Name</i>	Swedish university of Agricultural Science
<i>Type</i>	University
<i>Department</i>	Forest Ecology and Management
<i>Short description</i>	University department dealing with research, post- and undergraduate teaching and some policy. Significant part of activities targeted towards tropical regions and development.
PROJECT	
<i>Research project</i>	Tropical Forest Ecology and Management - emphasis on soils, water and sustainable production
<i>Short description</i>	Biomass production and soil improvement as well as water use and water conservation by natural and secondary forests and plantations in humid and semi-arid tropics.
<i>Expertise offered</i>	Biomass production and soil improvement as well as water use and water conservation by natural and secondary forests and plantations. Empirical study in many environments/regions for process understanding and building of generalisations, currently working in SE Asia, W Africa and CI America.
<i>Requested partner expertise</i>	Open for partnerships on expertise above to increase number of cases and regions and to apply in modelling as well as in policy and governance research.

PROFILE	
AUSTRIA	Dr Walter Mayer
	strobl@progis.com
	General Manger
<i>Areas of activity</i>	ICT for modern Farm Management
ORGANISATION	
<i>Name</i>	PROGIS Software GmbH
<i>Type</i>	SME
<i>Short description</i>	PROGIS Software GmbH is a GIS-software (Geographic Inforamtion Systems) developing expert, dedicated to the development of applications for the rural area-sector. Based on the core-product WinGIS, a Windows based object oriented GIS, PROGIS is offering a wide range of applications for agriculture, forestry, ecology, risk- and land management. Included are tools for logistics, community management, utility management, GeolInfotainment, precision farming and virtual farming.
PROJECT	
<i>Research project</i>	ICT-based software technology for rural area management - (agriculture, forestry, risk management, environmental caretaking) a holistic approach to enhance agricultural development, know-how transfer and training
<i>Short description</i>	Scientific investigation of general cultivation methods of the most current crops in the different regions of India. Investigation of new cultivation methods. Integration of investigation results into ICT
<i>Expertise offered</i>	GIS, GIS based tools for agricultural and forest management, business models for integrated land holistic agro-solutions considering the whole production chain and affiliated industries and organistations/authorities - 1000nds of users, experience in project implementation
<i>Requested partner expertise</i>	Scientific experts in the fields of: agricultural economy agro-chemistry agro-machinery

PROFILE	
BANGLADESH	Zakir Md. Hossain
	farmers.voice@gmail.com
	Founder & Chief
<i>Areas of activity</i>	Rural Development, Organic Farming, Nature Conservation, Agro biodiversity, Indigenous varieties/ species, natural corridor
ORGANISATION	

<i>Name</i>	Krisoker Saar (Farmers' Voice)
<i>Type</i>	Research Center
<i>Short description</i>	It is a tiny Farmers' Research Institute evolved from the local community itself through a non-conventional way of institutional formation and development. Since started dreaming and conceptualising the Institution; we are working to developing a Holistic Way of living by using research to foster local development. The Institution focuses on Ethical - Production, Research, Conservation, Marketing, PolicyAnalysis and Advocacy
PROJECT	
<i>Research project</i>	Action based research on creating the natural infrastructural corridor among SAARC countries.
<i>Short description</i>	The project aims to create a one kilometer wide corridor of nature among the seven SAARC countries. So that this will act as a shelter for biodiversity resources of the countries.
<i>Expertise offered</i>	10 professionals including the researchers.
<i>Requested partner expertise</i>	Six prime partners from 6 SAARC countries, three partners from 3 European countries who have experience with similar interest in Europe.

PROFILE	
LITHUANIA	Dr. Rasa Melnikiene
	laei@laei.lt ; zivile@laei.lt
	Director
<i>Areas of activity</i>	Rural development, climate change, biodiversity, agrarian economics.
ORGANISATION	
<i>Name</i>	Lithuanian Institute of Agrarian Economics
<i>Type</i>	Research Center
<i>Short description</i>	High importance of Institute is determined to analysis and prognosis of micro and macro processes in the field of scientific research and information management. We have expertise in the area of agricultural economics; regional, economic, social and environmental development in rural areas, agricultural innovation systems, market regulation of agricultural and food products.

PROFILE	
NETHERLANDS	MSc Anastasios MICHALOPOULOS
	a.michalopoulos@tudelft.nl
	Post-doc researcher
<i>Areas of activity</i>	Sustainability criteria, agricultural policy, technological transition pathways, globalized socioeconomic impact, rural livelihoods, SME, food production
ORGANISATION	
<i>Name</i>	Delft University of Technology (TUDELFT)
<i>Type</i>	University
<i>Department</i>	Department of Biotechnology, Biotechnology and Society
<i>Short description</i>	The department of Biotechnology and Society of Delft university studies the societal aspects of biotechnology policy about food and non-food products, relevant public perceptions and communication.
PROJECT	
<i>Research project</i>	<i>Societal implications of proposed EU sustainability criteria on key food actors and rural livelihoods: India and Southern Europe</i>
<i>Short description</i>	The EU is currently developing sustainability criteria for growing GM crops in European Union. This project aims to contribute to sustainable rural livelihoods and agricultural development by analysing the socioeconomic impact of different proposed sustainability criteria and operational indicators in Europe. The assessment will also include possible impacts on large non-European producers in order to advice the European sustainable agriculture policy agreement on its globalized societal impact and on the selection of socially optimal transition pathways. For this purpose the project will deliver a timely analysis of the socioeconomic impact from implementing the proposed European sustainability criteria for farmers, SMEs, and other key food production actors in Europe and in India. It will bring together academy, industry and consumer interest groups to explore relevant public perceptions and technological innovation needs for these actors to stay competitive in a changing sustainable global market.
<i>Expertise offered</i>	Analysis of socio-economic impact in EU, including public perceptions, stakeholder relations and policy advice
<i>Requested partner expertise</i>	Analysis of socio-economic impact in rural settings in India, stakeholder relations, public perceptions and innovation management

PROFILE	
IRAN	Mr. Mohammad Mojtabaei
	fppirco@yahoo.com
<i>Areas of activity</i>	CEO& General manger Health,Environment, Food and Agriculture, Biotechnology, Pharmaceutical, Renewable Energy
ORGANISATION	
<i>Name</i>	Fanavar Pajoheash Pooya FPPIRCO
<i>Type</i>	Private R&D Consultancy Company
<i>Department</i>	R&D
<i>Short description</i>	Fanavar pajoahesh Pooya FPPIRCO is a private research and development R&D consultancy company involves in health , environment (water&waste waterbiodiversity), food and agriculture,biotechnology ,phramceutical industries and renewable energy sectors. FPPIRCO makes great contribution for standard development and life quality promotion.
PROJECT	
<i>Research project</i>	Productivity promotion in water mangement,food and agriculture,Environment protection and conservation.
<i>Short description</i>	Waste water sanitaion and biotreatment ,for recycling and reusing in agriculture
<i>Expertise offered</i>	Collect waste water ,biotretament for constructing wetland and using recycled water for irrigation.
<i>Requested partner expertise</i>	Cooperative farm industry corporation

PROFILE	
SPAIN	Dr. Angel Montoya
	amontoya@eln.upv.es
<i>Areas of activity</i>	Head of the Immunotechnology Group Immunochemical analysis, pesticides, ELISA, monoclonal antibodies
ORGANISATION	
<i>Name</i>	Universidad Politécnica de Valencia
<i>Type</i>	University
<i>Department</i>	Institute of Bioengineering - I3BH
<i>Short description</i>	Academic institution with high interest and activity in applied science and R&D
PROJECT	
<i>Research project</i>	Development of monoclonal antibody-based immunoassays for pesticide analysis
<i>Short description</i>	Development of new immunochemical tools (ELISAs based on monoclonal antibodies) for the analysis and control of pesticide residues in fruit, vegetables, and the environment
<i>Expertise offered</i>	Hapten synthesis, monoclonal antibody production and characterization, ELISA development and validation, application on agri-food and environmental samples
<i>Requested partner expertise</i>	Real sample availability, sample preparation, reference chromatographic analysis of pesticides

PROFILE	
CZECH REPUBLIC	Ing. Jan Moudrý
	JMoudry@zf.jcu.cz
<i>Areas of activity</i>	Assistant Professor Sustainable agriculture, organic farming, systems of farming, bioproduction
ORGANISATION	
<i>Name</i>	University Of South Bohemia in České Budějovice
<i>Type</i>	University
<i>Department</i>	Faculty Of Agriculture, Department of Plant production and Agroecology
<i>Short description</i>	Faculty Of Agriculture is focused on Plant and Animal production, Agroecology and Biotechnology, main research focus is on sustainable agriculture.
PROJECT	
<i>Research project</i>	Development of sustainable and organic agriculture on farm level
<i>Short description</i>	Optimization of selected group of farms focused on sustainable and environmental friendly farming, opportunities for organic farming.
<i>Expertise offered</i>	Farming in LFA, organic farming, management of bioproduction
<i>Requested partner expertise</i>	Farming in local conditions, socio-economy

PROFILE	
ITALY	Prof. Simone Orlandini
	simone.orlandini@unifi.it
Areas of activity	Associated Professor Agrometeorology, Climatology, Modelling, Climate Change, Agronomy, Human Biometeorology
ORGANISATION	
Name	University of Florence
Type	University
Department	Department of Agronomy and Land Management
Short description	<p>The Department of agronomy and land management of Florence University is an important academic center of research and education concentrating on environmental and productive aspects of agricultural cultivation systems.</p> <p>The research activities focus on agronomic practices, soil conservation (soil erosion, salinisation and pollution), crop management, environmental monitoring and ecophysiology and have been performed in the framework of international and national projects funded by public (EU, Ministry of Research, Local Administrations, etc) and private organizations (farms, cooperative of producers, etc.). The Department also has wide experience participating in projects funded by international institutions (EU, FAO, WMO, etc.). It is experienced in modeling applications to investigate crop responses to environmental conditions, including climate change and variability impacts, and has published a number of papers on this subject.</p> <p>In particular the research aims to evaluate the adaptability of energy crops, traditional cultivation and new species to different pedological and climatic local conditions and to the future scenarios of climate change. These studies have been often coupled with GIS (Geographical Information System) and the application of interpolation technique in order to perform territorial analysis and produce thematic maps. Moreover, with the aim of developing sustainable cropping systems, the Department works on experimental tests of alternative cultivation practices of fertilization, irrigation, tillage etc., and on the evaluation of the energetic and environmental balances related to low input cultivation systems.</p>
PROJECT	
Research project	Biofuel crops using marginal land and water resources and renewable sources for energy development
Short description	Promotion of renewable energies use and improvement of energy efficiency contributing to addressing, among other challenges, climate change
Expertise offered	Evaluation of crops productive sustainability in relationship to climate change and variability life cycle analysis and evaluation of environmental sustainability modelling crop growth and development

PROFILE	
INDIA	Ph.D Jai Krishna PANDEY
	jaikrishna_p@yahoo.com
	Head of Respiratory Protection Department
<i>Areas of activity</i>	Environmental safety in mining and power generation industries, methane control, sustainable bulk solid waste management from mining and power generation, bulk waste reuse, soil/water and agricultural products quality protection in the areas of mining and waste re-use from these industries
ORGANISATION	
<i>Name</i>	Central Institute of Mining and Fuel Research (Council of Scientific and Industrial Research)
<i>Type</i>	Research Center
<i>Short description</i>	Central Institute of Mining and Fuel Research (CIMFR-CSIR), a constituent of Council of Scientific and Industrial Research is an autonomous R&D institution under Ministry of Science and Technology, Government of India. The Institute undertakes various projects sponsored by different government and funding agencies for evolving new and technologically improved methodologies for mining and allied industries with a focus on the safety and environmental protection. It conducts research and provides technological support service to mining and power production industries. A major part of its activity is directed towards providing techno economic solutions for making coal mining, coal processing and power generation more safe and environmentally friendly. This comprises environmentally safe management and reuse of bulk waste from these industries, in particular of fly ash, including its application in agriculture as soil amendment and as a structural fill at the surface. The Institute is involved into assessment of its environmental impact particularly on soil and water, and into evaluation of bulk waste as environment contaminant and modifier. The institute has a total of 800 employees, out of which about 200 are scientists.
PROJECT	
<i>Research project</i>	<i>Sustainable management and bulk reuse of fly ash in the light of soil and groundwater resource protection and food /drinking water safety. (to be taken up as one of the partner with IEE-PAS)</i>
<i>Short description</i>	In India, coal-based power production contributes to 70% of total power consumption, and is fast growing. This results in annual generation of about 100 Mt of fly ash, with prospects of reaching 180 Mt/year by 2012 and its increasing massive application in agriculture and as a structural fill. In the EU, despite emphasis on clean energy, in several Member States over 50% of electricity production is still coal-based, which also causes problems with sustainable management of fly ash that is one of the major waste streams. In view of bulk generation of fly ash as well as the fact that it contains trace elements in about 10-fold higher concentrations than in lithosphere and is subject to long-term weathering processes, its sustainable management is crucial for the sustainability and health of the future generations. Project is aimed to elucidation temporal transformations of properties of fly ash applied as soil amendment and as a structural fill for sustainable protection of the environment and natural resources. To achieve this goal, mineralogical and physicochemical studies of weathering transformations of fly ash and composition of pore solutions in objects of different defined age such as surface structural fill, opencast mine fillings, active and closed landfills (ponds) of power plant fly ash, groundwater quality in their vicinity as well as fly ash amended soils will be carried out. The anticipated outcome of the joint project will be: (1) reliable long-term assessment of the environmental safety of groundwater and agroecosystems at fly ash use as surface structural fill and in agriculture as soil amendment; (2) guidelines on environmentally safe fly ash management with a focus on the principles of sustainable development .

<i>Expertise offered</i>	The institute has almost all sophisticated equipment and facilities for analysis and assessment of water, soil, waste and air borne contaminants. Being a part of CSIR constituting world's largest public funded Research Institution, it can get support from any facility and expertise from any of our 37 laboratories, which are working in different areas of specialization. Although, environment and environmentally safe management and reuse of fly ash is the concern of a number of CSIR laboratories. CIMFR has taken up and is involved in a number of projects directed towards different types of environmental friendly fly ash management and application.
<i>Requested partner expertise</i>	We will be working as one of partners in a project proposed by IEE-PAS

PROFILE	
INDIA	Satya PARIDA
	satya.parida@bbsrc.ac.uk
<i>Areas of activity</i>	Head of FMD Vaccine Differentiation Group at IAH, Jenner Investigator at Oxford University and adjunct Professor to Murdoch University Australia Developing vaccines for FMDV, developing DIVA tests for differentiating infection in vaccinated animals, Understanding basic immunology of FMDV persistence and correlating humoral and cellular immune response to vaccine- induced protection
ORGANISATION	
<i>Name</i>	Institute for Animal Health, Pirbright Laboratory, UK
<i>Type</i>	Research Center
<i>Department</i>	FMD Programme, FMD Vaccine Differentiation Group
<i>Short description</i>	Institute for Animal Health is one of the 8 Institute of Biology Biotechnology Science Research Council (BBSRC) and a leading organisation for exotic viral disease research. It also works as a World Reference Laboratory for FAO and Community reference Laboratory for EU on FMD and many other diseases.
PROJECT	
<i>Title of research project</i>	Development of molecular marker vaccines for Foot-and-mouth disease virus and Differentiating Infection in Vaccinated Animals (DIVA) for declaration of freedom from FMD infection
<i>Short description</i>	The present FMD inactivated vaccine though effective, does not provide sterile immunity and allow FMD virus to replicate in the throat of cattle, sheep and goats. These sub-clinically infected animals are epidemiological threats for further transmission of the disease. Non-structural protein (NSP) antibody tests are currently available to differentiate these animals in vaccinated population. However these tests are not sensitive enough to detect absolute sub-clinical infection in vaccinated animals. Furthermore, in endemic countries where the vaccine is not purified from NSP and multiple vaccinations are in practice, these tests fail to discriminate between vaccination and infection due to NSP contamination. Therefore it is important to develop robust marker vaccines and DIVA test. In my laboratory we are developing viral vector based marker vaccines which expresses FMDV capsid proteins. Such vector based vaccines are stimulant of enhanced cell mediated immunity in addition to humoral immunity produced by FMDV capsid. The second theme is to include TLR agonist adjuvants in the existing inactivated vaccines to increase a balanced Th1 and Th2 response for increasing

	<p>effectiveness of the vaccine. The 3rd important theme is development of mucosal antibody test using saliva or nasal fluids which could differentiate infection in vaccinated population. This will help in an effective vaccination control programme to declare freedom from FMDV which is a requirement by OIE international agency for trade. Till date we have successfully produced the FMD capsids in viral vectors and also developed mucosal IgA DIVA tests using saliva and nasal fluids from FMDV vaccinated and subsequently infected cattle, sheep and goats (Parida et al, 2006 in Vaccine). We have shown that high level of mucosal antibodies are the indicator of oropharyngeal replication of virus and only produced when a persistent FMD virus replicate in the oropharynx. The fact that parenterally injected FMD vaccine does not elicit any mucosal antibodies in these fluids, help to differentiate sub-clinical infection in vaccinated population.</p>
<i>Expertise offered</i>	Our Laboratory at Pirbright works as World reference Laboratory for FMD research and Diagnosis with expertise on molecular biology, microbiology, diagnosis and epidemiology of the disease.
<i>Requested partner expertise</i>	Foot-and-mouth research can only be done in specified research Institutes and Vaccine producing units. To the best of my Knowledge project Directorate (PD FMD) at Mukteswar, IVRI Bangalore, Indian Immunologicals at Hyderabad and Biovet at Bangalore are conducting FMDV research who could be considered as our partners. Similarly for developing field DIVA tests scientist from the above institutes and different research units in the field working under PD FMD in different states of India are suitable for partnership.

PROFILE	
UK	Mr. Himanshu PATHAK
	hpathak.iari@gmail.com
	Senior scientist
<i>Areas of activity</i>	Climate change, soil science, simulation modelling
ORGANISATION	
<i>Name</i>	Indian Agricultural Research Institute
<i>Type</i>	Research center
<i>Department</i>	Division of Environmental Sciences
<i>Short description</i>	IARI is the premier institute of agricultural research in India
PROJECT	
<i>Title of research project</i>	Mitigation and adaptation to climate change in agriculture through sustainable natural resource management
	Feasibility and cost analysis of mitigation and adaptation options in different agro-ecosystems of India
<i>Requested partner expertise</i>	Institutes in Europe working on climate change mitigation and adaptation in agriculture

PROFILE	
LUXEMBOURG	Ms Anne Peschon
	anne.peschon@asta.etat.lu
<i>Areas of activity</i>	GIS, remote sensing, GPS, LPIS
ORGANISATION	
<i>Name</i>	ASTA
<i>Type</i>	Public Administration
<i>Department</i>	GIS Department
<i>Short description</i>	Public administration : technical services of agriculture

PROFILE	
ISRAEL	Mr. Yinon Porath
	yinonp@afcon-inc.com
<i>Areas of activity</i>	Manager, Projects department Monitoring and control, automation, software, tracking, supply chain
ORGANISATION	
<i>Name</i>	Afcon Software and Electronics Ltd.
<i>Type</i>	Industry
<i>Department</i>	Projects
<i>Short description</i>	<p>AFCON Software and Electronics Ltd. develops versatile real-time multi-tasking software solutions for user-friendly Supervisory Control & Data Acquisition/Human-Machine Interface (SCADA/HMI) systems. Afcon's suite of products provides tools for carrying out any integration project requiring interaction between people and machines or devices. Our products cover a wide range of applications such as Industrial Automation, Building Automation Management, Security, Telemetry, Telemedicine and OEM applications.</p> <p>The Projects Department of AFCON Software and Electronics specializes in developing customized ICT projects, with expertise in development and integration of Monitoring and Control Systems, Wired and Wireless communication systems, GIS technologies, telemedicine software applications, Data-warehousing, Expert Systems and DSS (Decision Support System), User Interfaces for Web and Win applications.</p> <p>AFCON has successfully coordinated an FP5 project and is currently the ICT work package leader in four active IP projects under FP6 and FP7</p>

PROJECT	
<i>Research project</i>	Developing and integrating novel technologies to improve safety, transparency and quality assurance of the chilled/frozen food supply chain
<i>Short description</i>	Monitoring system for tracking the condition of goods during supply chain stages, applying GPS, GIS, RFID technologies, and decision support system
<i>Expertise offered</i>	Implementation of system for Monitoring supply chain parameters and geographical tracking of goods. Development of wired and wireless communication protocols with on site devices.

PROFILE	
LITHUANIA	Dr. Violeta Razmaitė
	razmusv@one.lt
<i>Areas of activity</i>	food quality, diversification, resources, local animal, wild animal, impact on consumer health
ORGANISATION	
<i>Name</i>	Institute of Animal Science of Lithuanian Veterinary Academy
<i>Type</i>	University
<i>Department</i>	Department of Animal Breeding and Genetics in cooperation with Analytical Laboratory
<i>Short description</i>	Institute of Animal Science of Lithuanian Veterinary Academy was founded in 1952. The research is conducted by five departments and two laboratories. The Institute has a staff totalling 111 persons, 27 of whom are scientific staff including 3 doctors habilitatus and 24 doctors. The Institute of Animal Science of Lithuanian Veterinary Academy specializes in the studies of animal genetics and conservation of genetic resources, production quality, biology of reproduction, animal welfare and environmental issues related with animal production and animal nutrition. The institute has prevented total disappearing of the unique Lithuanian indigenous farm animal breeds and is the newly developed centre for coordination of the local animal genetic resources. Also, our Institute investigates the quality of wild meats that is aimed to improve regulation and sustainable use of some wild animal populations.
PROJECT	
<i>Research project</i>	<i>Developing the research potential for food quality improvement by diversification and use of local farm animal and wild animal resources from forest and aquatic environment</i>
<i>Short description</i>	In Lithuania as well as in many other countries the number of allergic and obese people is increasing. Alongside with various factors, allergies and obesity are greatly influenced by the quality of food consumed. Consumers use lots of products containing various substitutes and additives, therefore, the quality of food is considered a highly important issue. The concept of food quality involves not only food safety, technological quality, nutritive value, function, palatability but also the natural origin and variety of the product. Thus, the quality and variety of the raw materials used for food production is very important. The quality and diversity of the products of animal origin depends not only on the feedstuffs and additives used, animal health and housing conditions, treatment of animals during transportation and before slaughtering but also on the

	<p>diversity of the animals used. Indigenous animals are more adapted to local climatic conditions, and local feeds. These animals are more resistant and more suitable for ecological farming. Food diversification may be increased by sustainable use of wild biodiversity too. Current interest in the domestic and wild biodiversity originates largely from the search for the possibilities to produce products with added nutritional properties, increase food diversification and strengthen the regulation of some wild populations (Sus scrofa, Castor fiber) by sustainable hunting.</p>
<i>Expertise offered</i>	<p>Management and research of farm and wild animal genetic resources, enabling their wider use and adaptation to different production niches, food diversification using domestic and wild animal resources from farms and forest, and aquatic environment, meat and animal fat components having influence on consumer health and consumption attitudes.</p>
<i>Requested partner expertise</i>	<p>Developing research potential by creating strategic partnership with research entities in food and animal science with respect to diversification and established food-related health issues and making local animal breeds more competitive through exploiting their qualities and variation.</p>

PROFILE	
ITALY	Prof. Giuseppe Leonardo Rotino
	orl@entecra.it
	Senior Scientist
ORGANISATION	
<i>Name</i>	CRA-ORL Consiglio Nazionale per la Ricerca in Agricoltura
<i>Type</i>	Research Center
<i>Department</i>	Research unit for vegetable Crops
<i>Short description</i>	It is a Public Research Organization devoted to almost all the topic dealing with the agricultural production, forest and post-harvest of the produces.
PROJECT	
<i>Research project</i>	<i>Molecular Breeding od eggplant</i>
<i>Short description</i>	The development of MAB (Molecular Assisted Breeding) is a goal that is going to be accomplished through the development of a molecular map based on segregation progeny. De development of Association mapping strategy is in progress based on candidate gene and/or phenotyping in large germplasm collection.
<i>Expertise offered</i>	Development of molecular markers associated to the trait of interest
<i>Requested partner expertise</i>	Implementation of the molecular activites and sharing the germplasm collection.

PROFILE	
ROMANIA	Dr. Veronica Sarateanu
	usabtm@mail.dnttm.ro
	Ph.D. - Lecturer
<i>Areas of activity</i>	Grassland, Biodiversity, Management, Vegetation, Succession
ORGANISATION	
<i>Name</i>	Banat's University of Agricultural Sciences and Veterinary Medicine
<i>Type</i>	University
<i>Department</i>	Grasslands and Forage Crops
<i>Short description</i>	Banat's University of Agricultural Sciences and Veterinary Medicine from Timisoara has 19 specialities grouped in 6 faculties and 5 independent departments that offer a full educational programme: Bachelor degree cycle, MSc degree, and Ph.D. degree. The teaching - research staff consists of 564 people. In our university are learning about 6096 undergraduate students, 1090 MSc students and 447 Ph.D. students. Our university has a well developed research infrastructure with modern technology in all the fields of interest related with its specialities. Banat's University of Agricultural Sciences and Veterinary Medicine from Timisoara has his own Didactic Experimental Station that is a self-financed unit, specialised in the production of seed from superior links and of animal biological material. In present, it has 2,507 ha of agricultural land, of which 2,333 arable lands, 78 ha of pastures, 64 ha of hayfields, 24 ha of vineyards and 8 ha of orchards. This unit is providing the technical and material ground for the training of students, for the carrying out of research, of graduation diplomas, and for productive activity. Also, our university has an Extension Unit that is an educational opportunity to all those who are not students and to graduates from different academic institutions. Through this kind of activity the university disseminates new knowledge and the results of the scientific research to the interested bodies. Regarding the international partners for education and research of our university, they are 86 institutions from 24 countries.
PROJECT	
<i>Research project</i>	Succession of the vegetation from arable land to grassland and from grassland to shrubland
<i>Short description</i>	The change of the land use in upland areas (hills, mountains) are determining the appearance of the succession phenomenon. Thus, the abandonment of the arable land determinates the dinamic succesiion of it in grassland, and the abandoned grasslands are transformed in shrublands. These phenomenons are representing a challenge because the turn of an ecosystem into another one implies deep change on the biotope and on the biocoenosis. The purpose of the project is to provide useful data regarding the succession of the vegetation from arable land to grassland and from grassland to shrubland from the point of biodiversity, biomass productivity, soil features and socio - economical aspects.
<i>Expertise offered</i>	Our team is offering expertise on the study of the vegetation succesion from the point of biodiversity dynamics, soil features, biomass productivity and quality and socio-economic studies.
<i>Requested partner expertise</i>	The requested partners must to have expertise in related domains as, grasslands science, biodiversity, etc.

PROFILE	
INDIA	Dr Raman SARAVANANE
	rsaravanane@pec.edu
	Assistant Professor
<i>Areas of activity</i>	Sustainable clean production and Bioenergy
ORGANISATION	
<i>Name</i>	Pondicherry Engineering College
<i>Type</i>	University
<i>Department</i>	Environmental Engineering Division, Department of Civil Engineering
<i>Short description</i>	<p>Founded in the year 1985, Higher Education, Research and Development ; Research and developemnt in Enviornment and Energy Projects- climate and ground water augmentation.</p> <p>(1) Member of Risk Assessment -Advisory Structure of Scientific Committees and Expert set up by European Commission Decision - 2008/721/EC (Published in Official Journal of European Union, OJ L 49 20.02.2009, p. 33)</p> <p>(2)Research and Academic collaboration to INSA, Toulouse, France and University of Poitiers, France;</p> <p>(2) Research collaboration to Wind, sea, algae forum, NASA- USA and Copenhagen, Denmark (www.algaepedia.org).</p>
PROJECT	
<i>Research project</i>	<i>Development of Hydrogen Production Technology from Renewable Industrial Waste Streams</i>
<i>Short description</i>	<p>At present, industrial grade hydrogen is produced by water hydrolysis, which needs huge amounts of electrical energy, or by steam reforming of natural gas or coal, needing high pressures and thermal energy from fossil fuels. Furthermore it aggravates the environment with CO2 emissions. On the other side two main biotechnological paths have been proposed to obtain hydrogen: anaerobic (dark) fermentation and photosynthesis. Both require modest input of energy, ideally solar energy, and can potentially use organic wastes from industries as substrates for the microorganism cultivation, and thus partly contribute to the agenda of CO2 sequestration and reduction in CO2 emissions to 5 -10% below 1990 levels by 2020. This proposed method can enhance hydrogen production through recirculation of heat energy from waste heat streams generated from Nuclear, thermal power plants and Industrial units. The eco-efficiency of the biotechnological approach against conventional hydrogen production is quite promising</p>
<i>Expertise offered</i>	<p>Technology AFADS (Anaerobic, Phytodepuration, Aerobic, Solar Distillation) for the production of biohydrogen by dark fermentation. An AFADS system is a kind of compound bioreactor which, by means of solar energy, produces biogas by anaerobic digestion, clean water by phytodepuration with microalgae, and 3% of water naturally distilled by solar power. Once validated for hydrogen production, this technology could solve many environmental and energy problems both in rural India and Spain, and provide a new way of treating wastewater with null CO2 emissions.</p>
<i>Requested partner expertise</i>	

PROFILE	
ITALY	Prof. Felicita Scapini
	scapini@unifi.it
<i>Areas of activity</i>	Professor of zoology and director of the department Water management; beach ecology; Use of natural resources; Environmental education
ORGANISATION	
<i>Name</i>	University of Florence
<i>Type</i>	University
<i>Department</i>	Department of Evolutionary Biology
<i>Short description</i>	It is a university department active in several fields of biological research: zoology, comparative anatomy, ecology, animal behaviour, genetics, microbiology, anthropology and plant biology
PROJECT	
<i>Research project</i>	Sustainable management of natural resources - from local to global
<i>Short description</i>	Starting from the local problems regarding a sustainable use of natural resources we intend to develop management strategies that address the needs of the local stakeholders, and propose them to the higher levels, where decisions are taken and policies developed.
<i>Expertise offered</i>	Identification of bioindicators of impacts at different temporal and geographical scales; involvement of local stakeholders; environmental education at local level
<i>Requested partner expertise</i>	Environmental socioeconomy; local multidisciplinary expertise

PROFILE	
AUSTRIA	Mr. Josef Schmidt
	josef.schmidt@ait.ac.at
<i>Areas of activity</i>	Genomics, biological resources, plant diversity, microbial diversity, human health diagnostics, food, environment, water resources

ORGANISATION	
<i>Name</i>	AIT Austrian Institute of Technology
<i>Type</i>	Research Center
<i>Department</i>	Health and Environment
<i>Short description</i>	<p>Health and natural resources are essential for the quality of life. The Health & Environment Department at the Austrian Institute of Technology (AIT) addresses the immense challenges arising from environmental problems and demographic development, with innovative technologies for industry and public administration. Our molecular analytics group screens plant and microbial genetic resources to develop novel diagnostics for use in crop breeding and development of food origin and food safety detection tools. AIT's genetic sequence (clone) storage facility processes gene resources and offers their distribution and use by the scientific community in high-throughput analytics. Together with environment engineering experts, we study the complex interactions between plants and micro-organisms, develop new diagnostic methods to detect plant pathogens and search for innovative plant and soil remediation and management technologies to combat water and soil pollution.</p> <p>Our human health related activities concentrate on the development of plant-derived health-promoting food and we also develop new diagnostic tools for human disease detection, medical devices, but also mathematical models for diagnosis and therapy. The nanotechnology lab pioneers the development of supporting technology for these activities. We learn from life and natural diversity to utilise their principles. Based on this new knowledge we develop converging technologies leading to innovations with our partners. Taken together, we contribute to the improvement of human health and environmental stability.</p>
PROJECT	
<i>Research project</i>	Exploitation of biodiversity of plant and microbe genes for increased plant disease and stress resistance, enhanced plant product quality, and plant ingredients boosting human health.
<i>Short description</i>	Gene discovery and allele mining in plants, specifically Solanaceae, cocoa and other crops, underutilised and medicinal plants. Genes/alleles to be discovered will be made accessible to modern plant breeding and cis-genesis approaches of gene transfer via the development of molecular markers for selection and isolation of the discovered alleles.
<i>Expertise offered</i>	Genomics: Map-based cloning, allele mining based on synteny, molecular genetics, molecular biology procedures, such as PCR, real-time PCR, cloning, plant and bacteria transformation.
<i>Requested partner expertise</i>	Biochemistry, Proteomics, molecular biochemistry and analytics, detection methods of rare and short-lived metabolites and proteins, plant and microbe compounds. Assessment of quality characteristics including flavour, taste, consumer preference, of crops, e.g. potato tubers, tomato and other vegetables, fruits. Commercial plant breeders of the crops indicated, biotech companies, developers of plant protection agents and schemes using natural products and plant resistance genes. Bioinformatics and IT experts.

PROFILE	
CZECH REPUBLIC	Prof. Frantisek Sehnal
Areas of activity	sehnal@bc.cas.cz Sustainable Agriculture, Crop Genomics, Plant Bioproducts, Soil Science, Tissue morphogenesis, Traditional Drug Discovery
ORGANISATION	
Name	Biology Centre ASCR
Type	Research Center
Short description	Biology Centre of the Academy of Sciences of the Czech Republic harbors 430 employees and 90 PhD students working in the institutes of Entomology, Hydrobiology, Molecular Biology of Plants, Parasitology, and Soil Biology. Investigations conducted in these institutes range from basic research on plants and invertebrate animals to the practically oriented management of complex ecosystems. Studies on model organisms include innovative exploitation of natural resources, enhancement of agricultural output, elucidation of gene cascades regulating morphogenesis, and control of diseases transmitted by arthropods. Ecological studies aim at understanding the functioning of the agricultural, forest, and fresh water ecosystems, with practical outcomes to environment protection, nature conservation, and restoration of ecosystems damaged by human activities.
PROJECT	
Research project	Provided key words specify some of the research areas in which collaboration is possible. Project titles and abstracts will be provided after announcement of the calls for proposals.
Short description	Project titles and abstracts will be provided after announcement of the calls for proposals.
Expertise offered	I am writing on behalf of about 150 scientists who include experts in areas defined by the key words. Contacts can be found and the prospective partners found on the www.bc.cas.cz .
Requested partner expertise	Depends on the call

PROFILE	
INDIA	Dr. NAGENDRAKUMAR SINGANALLUR
	srini@indimmune.com
Areas of activity	Manager VACCINE RESEARCH, DIAGNOSTIC TESTS, CONTROL OF INFECTIOUS DISEASES
ORGANISATION	
Name	INDIAN IMMUNOLOGICALS LIMITED

Type	SME
Department	RESEARCH AND DEVELOPMENT
Short description	Indian Immunologicals Limited, a wholly owned subsidiary of the National Dairy Development Board, was established in 1982 for manufacture of FMD vaccine in collaboration with Wellcome Foundation Limited, UK. The mission of IIL is to provide “Affordable immunity through technological superior products”. It is the largest FMDV manufacturing plant in India. Currently IIL manufactures a range of bovine, canine and ovine vaccines. IIL is the largest contributor of vaccines to the FMDV control program launched by the Government of India since 2003. IIL has research collaborations with several reputed national and international institutes like the Indian Institute of Science and Institute of Animal Health, UK (FMD Epidemiology and cross protection studies).
PROJECT	
Research project	Development, enhancement and complementation of animal-sparing, foot-and-mouth disease vaccine-based control strategies for free and endemic regions
Short description	The project seeks to address specific gaps in our knowledge on all aspects of FMD control to enable implementation of enhanced animal-sparing vaccine-based control strategies tailored to the needs of the free and endemic settings. Consequently four main objectives of the project include (i) the improvement of the quality of existing FMD vaccines and diagnostics. (ii) the refinement and replacement of in vivo FMD vaccine quality tests, (iii) the development of new generation FMD vaccines and diagnostics by applying cutting edge technologies, and (iv) the enhancement of our knowledge on FMDV spread and transmission following the use of high-potency monovalent or multivalent vaccines. The role of wildlife in FMDV maintenance and transmission will also be investigated.
Expertise offered	FMD vaccine in vivo and in vitro based potency testing, transmission studies and detection of carrier status in vaccinated and unvaccinated cattle and buffalos.
Requested partner expertise	Epitope matching studies and use in vaccine strain selection

PROFILE	
INDIA	Dr Rajkumar SINGH nrcequine@nic.in
	Director
Areas of activity	Equine, disease diagnostics, vaccines, equine genomics, clinical proteomics, functional bioinformatics, microbial reposition
ORGANISATION	
Name	National Research Centre on Equines & Veterinary Type Culture Centre
Type	Research Center
Department	Indian council Of Agricultural Research, Ministry of Agriculture, Govt of India

<i>Short description</i>	NRCE: engaged in equine researchable issues viz. diagnostics & vaccines for equine diseases; conservartion & preservation of true-to-breed equids; certification of animals for import/export VTCC: microbial repository for microbial genetic biodiversity conservation and harnessing of microbial prowess for animal and human welfare for details about the institution: plz visit official website mentioned above
PROJECT	
<i>Research project</i>	<i>New generation diagnostics & vaccines for equids</i>
<i>Short description</i>	Project aims at (i) rapid and sensitive diagnosis of equine infleunza (EI) especially by qPCR/microarray/mass spectrometry, (ii) improvement of existing EI vaccines and development of new generation vaccines for EI, (iii) bioinformatics in designing new diagnostics primers/drug targets/vaccine epitope(s)
<i>Expertise offered</i>	Expertise in infectious disease researches including molecular diagnostics, new generation vaccines, sero- and molecular epidemiology; microsatellite-based characterization of Indian breeds of horses; understanding disease resistance in horses with equine influenza as a model; assisted reproductive technologies (ARTs) in equine production, Microbial reposition & utilization.
<i>Requested partner expertise</i>	Expertise in bioinformatics; molecular diagnostics espacially based on microarrays, clinical proteomics, quantitative PCRs; mass spectrometry in disease diagnosis and microbial characteterization/identification; genome sequencing of viruses/bacteria/protozoa of Indian strains/isolates.

PROFILE	
LITHUANIA	Dr INA SKURDENIENE
	ina@lgi.lt
	Senior Researcher
<i>Areas of activity</i>	Risk factors, risk assessment (microbiological) and management in animal husbandry; Food raw materials (milk, meat, egg) quality and safety in chain from farm to table; Animal welfare and behavior; Technologies for ecological raising of animals and measures for pollution reduction in animal husbandry; Investigation of the influence of environmental factors on the physiological state and productivity of farm animal ; Environmental problems on animal and poultry farms; Investigation NH3, CH4, N2O, CO2, PM emission level in farm building and manure storage; Indoor air contamination by microorganisms (bacteria, moulds fungi)
ORGANISATION	
<i>Name</i>	Institute of Animal Science of the Lithuanian Veterinary Academy
<i>Type</i>	University
<i>Department</i>	Animal Hygiene and Ecology

<p><i>Short description</i></p>	<p>The Institute of Animal Science of Lithuanian Veterinary Academy is a research institution with a status of university scientific institute, established for the fundamental and applied research in zootechny and biology on international and national level in the field of biomedical sciences. The institute was founded in 1952. The research is conducted by six departments (Animal Breeding and Genetics; Animal Reproduction; Animal Hygiene and Ecology; Poultry Breeding; Animal Feeding and Feedstuffs; Department of Farm Management) and two laboratories (Blood Typing and Analytical Laboratory).The Lithuanian technique for keeping and use of breeding bulls has been worked out and livestock embryo transplantation applied. Nutrition of farm animals and efficient utilization of feeds has been scientifically grounded at the Institute. Indigenous Lithuanian farm animal breeds have been preserved and studied. New environmentally friendly technologies of animal housing and welfare are being developed and implemented.</p> <p>The main research activities of the Institute:</p> <ol style="list-style-type: none"> 1) The studies of animal genetics, biology of reproduction and genetic resources; 2) The studies of animal nutrition and production quality; 3) The studies of animal welfare and environmental issues related with animal production.
<p>PROJECT</p>	
<p><i>Research project</i></p>	<p>Pollution (biological and chemical) of various technological zones in livestock houses</p>
<p><i>Short description</i></p>	<p>Food raw materials (milk, meat, egg) quality and safety in chain from farm to table; Technologies for ecological raising of animals and measures for pollution reduction in animal husbandry; Investigation NH3, CH4, N2O, CO2, PM emission level in farm building and manure storage; Indoor air contamination by microorganisms (bacteria, moulds fungi); Food raw materials (milk, meat, egg) quality and safety in chain from farm to table.</p>
<p><i>Expertise offered</i></p>	<p>Microbiological risk assessment (molds fungi), animal welfare, organic farming, food safety and quality</p>
<p><i>Requested partner expertise</i></p>	<p>Animal welfare, organic farming, risks assessment</p>

PROFILE	
PORTUGAL	Mr. Pedro Soutinho
	inovamais@inovamais.pt
<i>Areas of activity</i>	Project Manager Research projects on transport: biofuels; electric vehicles, logistics
ORGANISATION	
<i>Name</i>	INOVA+ Innovation Consulting
<i>Type</i>	SME
<i>Department</i>	International Cooperation Unit
<i>Short description</i>	INOVA+ is a Portuguese consultancy firm founded in 1997 and located in Oporto specialized in innovation management. As the Portuguese leader in the promotion and management of European funded projects, INOVA+ has a vast experience in the field both as partner and as co-ordinator. It is connected to the INNOVA Group the largest private network for innovation services in Europe. Presently, this network employs more than one hundred persons in Italy, Portugal, France, Poland, Czech Republic and Brussels.
PROJECT	
<i>Research project</i>	Coordination of several EU projects in the transport sector under the support of the 7th Framework Programme (FP7).
<i>Short description</i>	Star-Net Transport: a knowledge network to support SMEs participation in the FP7 with presence in 14 countries; TECH-CLINIC SST: raises awareness and knowledge on future job opportunities in the Surface Transport; PRESS4TRANSPORT: a free of charge communication service to disseminate and give visibility to national and regional projects in the transport field with potential applications in other countries. TURBLOG_WW: a cooperation project between the EU and Latin America (Peru and Brazil) to exchange knowledge on urban logistics on a world wide perspective. Study of the transferability of experiences in urban logistics from EU, CHINA and INDIA to Latin America.
<i>Expertise offered</i>	Innovation Management; Project Management; Entrepreneurship Support
<i>Requested partner expertise</i>	Indian companies, research centres, universities willing to explore cooperation opportunities with the European Union in the transport field through trans-national research & development projects and/or through the integration of Indian organisations in the European knowledge transfer networks.

PROFILE	
INDIA	PhD Sebastian STEFANIAK
	irena@ipis.zabrze.pl
Areas of activity	Assistant Professor in Laboratory of Non-point Contamination of the Environment Sustainable waste management, waste reuse, environmental safety, soil/water quality protection
ORGANISATION	
Name	Institute of Environmental Engineering of the Polish Academy of Sciences (IEE-PAS)
Type	Research Center
Short description	<p>The Institute of Environmental Engineering of the Polish Academy of Sciences (IEE PAS) has currently 80 employees, including 28 scientists (8 professors) that conduct mechanistic research on anthropogenic pollutants release, migration, transformation, prevention and attenuation in air, aquatic environment and soil. The Institute provides also applied expert studies customers from the industry, the public administration, or other business companies. In particular, the applied research topics include: (1) development of technologies and equipment for the environmental protection; (2) environmental impact assessment of the industry and transport; (3) development of guidelines for modernization of industrial enterprises in compliance with the environmental protection requirements; (4) evaluation of air, soil, water and plants contamination; (5) development of viable preventive and remediation measures; (6) providing solutions for other problems of the environmental engineering and bioengineering.</p> <p>Sebastian STEFANIAK is a Senior Assistant Professor (Adjunct) in Laboratory of Non-point Contamination of the Environment at the Institute of Environmental Engineering of the Polish Academy of Science (IEE-PAS) in Zabrze, Poland. He received his Ph.D. in Environmental Engineering from Central Mining Institute in Katowice and his M.S. in Mining Geology from Silesia Technical University in Gliwice. Dr Stefaniak has authored 1 monograph (in print), and is a co-author of 11 chapters in books, over 42 scientific papers, gave 12 presentations at international and national symposia, co-organized 1 international symposium (NATO Advance Research Workshop) and is a co-author (Managing editor) of a book from NATO Science Series, Series IV: Earth and Environmental Sciences – Vol. 69, “Viable Methods of Soil and Water Pollution Monitoring, Protection and Remediation” Springer, 2006. He has been a leader of 1, a main contractor of 2, a member of a research team of 6 multidisciplinary research projects, and actively participates in the international research projects within PAS bilateral agreements on scientific collaboration with Greece and India and recently with China and Vietnam.</p> <p>His research interests are focused on: Interdisciplinary studies on impact assessment of nonpoint (large area) and point sources of contamination of the different parts of the terrestrial and aquatic environment (surface and groundwater); Geochemical transformations and migration of contaminants in solid wastes, soil, bedrock, pore solutions of soil and groundwater; Pathways, accumulation and release of contaminants in the environment; Prognosis of pollutants pathways in the environment, their interaction, temporal and spatial migration, transformations and environmental impact; Effect of solid waste disposal and management on the aquatic and terrestrial systems; Environmentally safe disposal and reuse of solid wastes; Optimization of prevention, attenuation and control measures, contaminated site remediation; Environmental monitoring as a system of early warning. He is a member of international scientific Society of Ecotoxicology and Environmental Safety (SECOTOX) and of Mineralogical Society of Poland.</p>

PROJECT	
<i>Research project</i>	<i>Sustainable management and bulk reuse of fly ash in the light of soil and groundwater resource protection and food /drinking water safety.</i>
<i>Short description</i>	<p>In India, coal-based power production contributes to 70% of total power consumption, and is fast growing. This results in annual generation of about 100 Mt of fly ash, with prospects of reaching 180 Mt/year by 2012 and its increasing massive application in agriculture and as a structural fill. In the EU, despite emphasis on clean energy, in several Member States over 50% of electricity production is still coal-based, which also causes problems with sustainable management of fly ash that is one of the major waste streams. In view of bulk generation of fly ash as well as the fact that it contains trace elements in about 10-fold higher concentrations than in lithosphere and is subject to long-term weathering processes, its sustainable management is crucial for the sustainability and health of the future generations. Project is aimed to elucidation temporal transformations of properties of fly ash applied as soil amendment and as a structural fill for sustainable protection of the environment and natural resources. To achieve this goal, mineralogical and physicochemical studies of weathering transformations of fly ash and composition of pore solutions in objects of different defined age such as surface structural fill, opencast mine fillings, active and closed landfills (ponds) of power plant fly ash, groundwater quality in their vicinity as well as fly ash amended soils will be carried out. The anticipated outcome of the joint project will be: (1) reliable long-term assessment of the environmental safety of groundwater and agroecosystems at fly ash use as surface structural fill and in agriculture as soil amendment; (2) guidelines on environmentally safe fly ash management with a focus on the principles of sustainable development.</p>
<i>Expertise offered</i>	<p>Research team of the Laboratory of Non-point Contamination of the Environment include highly qualified hydrogeologists, geologists, mineralogists, chemists and soil scientists, also from other research institutions permanently collaborating with the Laboratory in many research projects. Its expertise covers among others: (1) assessment of non-point contamination of terrestrial and aquatic environment, including leaching behavior of solid wastes, contaminant release from waste disposal sites, impact of leachates on soils, as well as on ground- and surface waters; contaminant migration in the vadose and saturated zones, including extraction and analysis of chemical composition of pore solutions; dry and wet deposition of air contaminants, environmental impact of application of reused waste materials in agriculture; environmental impacts of transport; (2) studies on mechanism and dynamics of short and long-term transformations of waste materials under different conditions of the environmental exposure – for long-term prognosis of their environmental behavior and impact; (3) development of efficient means for mitigating/preventing pollution of terrestrial and aquatic environment, utilizing barrier and sorption properties of abundant natural and waste materials. Analytical equipment includes the most advanced analytical equipment required for proposed research, including ICP-MS Elan DRC-e (Perkin-Elmer), EDXRF Epsilon 5, Ion Chromatograph GC/ECD, GC/FID, GC/MS, POLARIS (Varian) , Ion Chromatograph METROHM, Beckman Coulter CENAVANTI J- 25, Fritsch particle sizer, vibratory sieve shaker analysette 3 SPARTAN (Fritsch) and other equipment such as FAAS Jarrell Ash AA-Scan 1 (Thermo), as well as access to other equipment when needed. The team members are skilled in using hydrogeochemical, hydrogeologic and statistical computer programs.</p>
<i>Requested partner expertise</i>	<p>Knowledge of methods and techniques of fly ash management, familiarity with the construction and a history of objects of fly ash utilization, expertise in sampling, including use of deep drillings, and chemical analysis of solids (fly ash and soil mixed with fly ash), plant material and liquids (leachate, surface and groundwater), along with QA/QC procedure, expertise in soil science.</p>

PROFILE	
SERBIA	Prof. Radmila Stikic
	rstikic@agrif.bg.ac.rs
<i>Areas of activity</i>	Prof. of Plant Physiology Crop stress physiology
ORGANISATION	
<i>Name</i>	University of Belgrade
<i>Type</i>	University
<i>Department</i>	Faculty of Agriculture
<i>Short description</i>	The Faculty of Agriculture (FA) University of Belgrade is a teaching and research institution whose activities cover all aspects of agricultural production and food technology. FA is the oldest agricultural faculty in Serbia, founded in 1919, and is organized in 31 departments distributed amongst 8 Institutes (Crop sciences, Fruit sciences and viticulture, Phytomedicine [Plant protection? Phytomedicine could be interpreted to be getting medicines from plants.], Soil sciences and land management, Agricultural engineering, Food technology, Agroecology). Current focuses of the research at the FoA are (according to 7 EU funded and other 20 international projects): plant production and soil sciences (crop water management); animal production (aquaculture); food technology (safe food production); agroecology (agropolicy, agrobusiness, rural development).
PROJECT	
<i>Research project</i>	Partial root drying technique (PRD) for improvement productivity of potato and tomato
<i>Short description</i>	PRD is a novel irrigation technique based on crop stress physiology knowledge and in proposed project we would like to explore the effects of this techniques on root growth with the aim to increase water and nutrient use efficiency.
<i>Expertise offered</i>	We offered the expertise for different physiological methods (measurements of plant and soil water regime, ABA content, stomatal conductance) that could allow measurements of drought stress and PRD induced signalling mechanisms
<i>Requested partner expertise</i>	We would like to increase our drought stress expertise by molecular biology approach (DNA based molecular methods)

PROFILE	
ITALY	Dr. Anna TEDESCHI
	anna.tedeschi@cnr.it
	Researcher
<i>Areas of activity</i>	Salinity, irrigation, soil structure, porosity, hydrological properties, crop yield, horticultural crop, energy crops.
ORGANISATION	
<i>Name</i>	CNR-ISAFoM (National Research Council)
<i>Type</i>	Research Center
<i>Department</i>	Institute for Agricultural and Forest Systems in the Mediterranean
<i>Short description</i>	<p>ISAFoM has the headquarter in Naples in addition to three Laboratories located in central and south Italy, Perugia (olive growing section), Cosenza (productive forestry section) and Catania (typical Mediterranean herbaceous crops section). The research activity of the Institute is mainly devoted to researches related to irrigations, relationship between soil plant and atmosphere and water use efficiency under different condition of water quality and pedo-climatic characteristics. The aims/topics carried out may be summarized: I) understanding of the following processes: study of the decrease of crop yield under water and salinity stress evaluated by the photosynthetic responses; evaluation of the net carbon and water exchange of an agro-system and the impact of low water available on Mediterranean forestry .II) Set-up of observation systems: two SKY Arrow aircrafts equipped with instrumentation to measure CO₂ and H₂O flux and to record multi- and hyperspectral and thermal infrared images at high spatial resolution; towers for micrometeorological and ecophysiological measurements were setup and installed at two experimental sites in the Sele irrigation scheme. III) Improve the production and quality systems: the collection and conservation of olive germoplasm; characterization and improvement of the extra olive oil; collection and characterization of qualitative and industrial use of genotypes of <i>Cynaria</i> spp, tomato, lentil, chickpea and clover; production of tomato and potato applying deficit irrigation; evaluation of spatial distribution of soil hydraulic properties, soil hydraulic behaviour, combining with the soil porosity analysis and the soil structure stability to assess risks of groundwater contamination, hydro-geology, soil erosion and remote sensing. The topics are studied at local field and at landscape scale, moreover the knowledge acquired at field and landscape scale are important results to be transmitted at the final user-“the farmer; industry etc”. the ISAFoM is involved in several international and national research projects. Between others, the Institute is working with, the Chinese Academy of Sciences CAREERI- and CIRN – Inst. Nacional de Tecnología Agropecuaria of Argentine. In both projects the objectives of the study is to evaluate the effects of the irrigation with saline water on the soil properties and on the crop production on arboreal, annual food crops and aromatic plants.</p>
PROJECT	
<i>Research project</i>	<i>Sustainable irrigated agriculture with saline water</i>

<p><i>Short description</i></p>	<p>Protection of soil resources and conservation of water are high on the agenda, because irrigated agriculture is one of the biggest producers of food and energy. In arid and semi-arid regions, irrigation has brought about environmental problems of waterlogging and salinity. Moreover salinity very often is associated to drought and affects depressed areas. In the countries where salinity is present very often there is also a heavy demand for energy. In these areas a good irrigation management is crucial to water resource conservation, e.g. by application of alternative irrigation management practices such as by alternating fresh and saline water throughout the crop season, taking into account crop tolerance to salinity. Saline water modifies soil structure and porosity, which has a direct effect on the soil water holding capacity. Irrigation with saline water can be used to produce crops for either energy or food. Moreover, precise control of irrigation timing and salinity may have desirable impacts on the quality of produce, e.g. by increasing dry matter or sugar fractional content.</p> <p>The project aims at providing scientific and practical knowledge towards sustainable use of saline water for agricultural production, and production of biofuels.</p>
<p><i>Expertise offered</i></p>	<p>Response of crops under salinity irrigation, evaluation of different irrigation management, application of model to study and predict the impact of several irrigation management on water balance and crop production.</p>
<p><i>Requested partner expertise</i></p>	<p>Crop management, irrigation science and technology, soil physics</p>

PROFILE	
POLAND	Prof. Irena TWARDOWSKA
	irena@ipis.zabrze.pl
	Head of the Laboratory on Non-point Contaminaton of the Environment
<i>Areas of activity</i>	Sustainable waste management, waste reuse, environmental safety, soil/water quality protection
ORGANISATION	
<i>Name</i>	Institute of Environmental Engineering of the Polish Academy of Sciences (IEE-PAS)
<i>Type</i>	Research Center
<i>Short description</i>	<p>The Institute of Environmental Engineering of the Polish Academy of Sciences (IEE PAS) has currently 80 employees, including 28 scientists (8 professors) that conduct mechanistic research on anthropogenic pollutants release, migration, transformation, prevention and attenuation in air, aquatic environment and soil. The Institute provides also applied expert studies customers from the industry, the public administration, or other business companies. In particular, the applied research topics include: (1) development of technologies and equipment for the environmental protection; (2) environmental impact assessment of the industry and transport; (3) development of guidelines for modernization of industrial enterprises in compliance with the environmental protection requirements; (4) evaluation of air, soil, water and plants contamination; (5) development of viable preventive and remediation measures; (6) providing solutions for other problems of the environmental engineering and bioengineering.</p>
PROJECT	
<i>Research project</i>	Sustainable management and bulk reuse of fly ash in the light of soil and groundwater resource protection and food /drinking water safety
<i>Short description</i>	<p>In India, coal-based power production contributes to 70% of total power consumption, and is fast growing. This results in annual generation of about 100 Mt of fly ash, with prospects of reaching 180 Mt/year by 2012 and its increasing massive application in agriculture and as a structural fill. In the EU, despite emphasis on clean energy, in several Member States over 50% of electricity production is still coal-based, which also causes problems with sustainable management of fly ash that is one of the major waste streams. In view of bulk generation of fly ash as well as the fact that it contains trace elements in about 10-fold higher concentrations than in lithosphere and is subject to long-term weathering processes, its sustainable management is crucial for the sustainability and health of the future generations. Project is aimed to elucidation temporal transformations of properties of fly ash applied as soil amendment and as a structural fill for sustainable protection of the environment and natural resources. To achieve this goal, mineralogical and physicochemical studies of weathering transformations of fly ash and composition of pore solutions in objects of different defined age such as surface structural fill, opencast mine fillings, active and closed landfills (ponds) of power plant fly ash, groundwater quality in their vicinity as well as fly ash amended soils will be carried out. The anticipated outcome of the joint project will be: (1) reliable long-term assessment of the environmental safety of groundwater and agroecosystems at fly ash use as surface structural fill and in agriculture as soil amendment; (2) guidelines on environmentally safe fly ash management with a focus on the principles of sustainable development.</p>

<i>Expertise offered</i>	<p>Research team of the Laboratory of Non-point Contamination of the Environment include highly qualified hydrogeologists, geologists, mineralogists, chemists and soil scientists, also from other research institutions permanently collaborating with the Laboratory in many research projects. Its expertise covers among others: (1) assessment of non-point contamination of terrestrial and aquatic environment, including leaching behavior of solid wastes, contaminant release from waste disposal sites, impact of leachates on soils, as well as on ground- and surface waters; contaminant migration in the vadose and saturated zones, including extraction and analysis of chemical composition of pore solutions; dry and wet deposition of air contaminants, environmental impact of application of reused waste materials in agriculture; environmental impacts of transport; (2) studies on mechanism and dynamics of short and long-term transformations of waste materials under different conditions of the environmental exposure – for long-term prognosis of their environmental behavior and impact; (3) development of efficient means for mitigating/preventing pollution of terrestrial and aquatic environment, utilizing barrier and sorption properties of abundant natural and waste materials. Analytical equipment includes the most advanced analytical equipment required for proposed research, including ICP-MS Elan DRC-e (Perkin-Elmer), EDXRF Epsilon 5, Ion Chromatograph GC/ECD, GC/FID, GC/MS, POLARIS (Varian) , Ion Chromatograph METROHM, Beckman Coulter CEN-AVANTI J- 25, Fritsch particle sizer, vibratory sieve shaker analysette 3 SPARTAN (Fritsch) and other equipment such as FAAS Jarrell Ash AA-Scan 1 (Thermo), as well as access to other equipment when needed. The team members are skilled in using hydrogeochemical, hydrogeologic and statistical computer programs.</p>
<i>Requested partner expertise</i>	<p>Knowledge of methods and techniques of fly ash management, familiarity with the construction and a history of objects of fly ash utilization, expertise in sampling, including use of deep drillings, and chemical analysis of solids (fly ash and soil mixed with fly ash), plant material and liquids (leachate, surface and groundwater), along with QA/QC procedure, expertise in soil science.</p>