

EUROPEAN PROJECTS

4F CROPS	
Title	Future Crops for Food, Feed, Fibre and Fuel KBBE-2007-3-1-07: CSA-CA
Coordinator	Centre for Renewable Energy Sources, Dr Efthimia Alexopoulou, ealex@cres.gr
Partners	<ul style="list-style-type: none"> - Università degli Studi di Catania (Italy) - Agricultural University of Athens (Greece) - ifeu - Institut für Energie-und Umweltforschung Heidelberg GmbH (Germany) - Agrotechnology and Food Innovations B.V.(Netherlands) - Università di Bologna (Italy) - INSTITUTO NACIONAL DE INVESTIGACIÓN Y TECNOLOGÍA AGRARIA Y ALIMENTARIA (Spain) - Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa (Portugal) - INSTYTUT WLOKIEN NATURALNYCH (Poland) - UNIVERSITY OF AGRICULTURAL SCIENCE AND VETERINARY MEDICINE BUCHAREST (Romania) - INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE (France) - National Agricultural Research Foundation - Agricultural Research Station of Komotini (Greece) - Institute for Fuels and Renewable Energy (Poland)
Abstract	<p>As different sectors - food, feed, fiber, and fuels - compete for land, the yielding potential of the future non-food crops has to be as efficient as possible in order to minimize the competition for land. The main objective of the proposed 4F CROPS is to survey and analyse all the parameters that will play an important role in successful non-food cropping systems in the agriculture of EU27 alongside the existing food crop systems. The work will start (WP1) with the prediction of the future land use in short term (2020) and long term (2030), taking under consideration restrict factors for agriculture and the market demand for non-food crops. The cropping possibilities (WP2) based on regional potential levels, ecology and climate will be determined. This group of non-food crops will be then subjected to a comparative cost analysis with conventional crops (WP3) for the same time framework. Socio-economic impacts, like farmers' income, rural development, public development, and public acceptance will analyse. Then environmental implications will be assessed compared to their respective conventional products (fossil energy, conversional materials) (WP4). Several environmental impacts will be assessed like soil quality and soil erosion, air quality and climate change, water issues, biodiversity and landscape by using LCA and EIE methods. The regulatory framework of the non-food crops will be considered including existing policies, co-existence and safety measures when the crops used for both food and non-food crops (WP5). The work from WP1 - WP5 will be used for the formation of scenarios for successful non-food cropping alongside food cropping systems (WP6) answering whether a complete bioeconomy is a viable option for EU27. The dissemination (WP7) will be done through the web-site (intranet), the four project workshops and other articles, leaflet, conferences, fact sheets, and links. WP8 aims at the coordination, management and reporting of the project.</p>
Scientific officer	Garbiñe Guiu Etxeberria Unit E2
Budget	998,000 Euros
Website	www.4fcrops.eu

MycoRed	
Title	KBBE-2007-2-5-05, Novel integrated strategies for worldwide mycotoxin reduction in the food and feed chains, LCP
Coordinator	Consiglio Nazionale delle Ricerche, Istituto di Scienze delle Produzioni Alimentari (Italy) Antonio.logrieco@ispa.cnr.it
Partners	<ul style="list-style-type: none"> - Cranfield University (UK) - Universität für Bodenkultur Wien (Austria) - Danmarks Tekniske Universitet (Denmark) - Max Rubner Institut, Bundesforschungsanstalt für Ernährung und Lebensmittel (Germany) - Plant Research International (The Netherlands) - Università Cattolica del Sacro Cuore (Italy) - Cereal Research non-profit Company (Hungary) - Institut National de la Recherche Agronomique (France) - Rijksinstituut voor Volksgezondheid en Milieu (The Netherlands) - TÜBİTAK Marmara Research Center (Turkey) - A.N. Bakh Institute of Biochemistry of the Russian Academy of Sciences (Russia) - National Research Center (Egypt) - International Institute of Tropical Agriculture (Nigeria) - Centro Internacional de Mejoramiento de Maiz y Trigo Int. (Mexico) - Universidad Nacional de Rio Cuarto (Argentina) - Universidad de Lleida (Spain) - Romer Labs Diagnostic GMBH (Austria) - Bio-ferm, Biotechnologische Entwicklung und Produktion GmbH (Austria) - Matrix srl (Italy) - Fundacio Privada International Tree Nut (Spain) - Federation Europeenne des Fabricants D'Additifs pour la Nutrition Animale (Belgium) - South African Medical Research Council (South Africa) - Università degli Studi di Roma la Sapienza (Italy) - - Università degli Studi di Napoli Federico II (Italy)
Abstract	<p>MYCORED aims at developing strategic solutions to reduce contamination by mycotoxins of major concern in economically important food and feed chains. The following toxins and commodities are especially considered in the project: aflatoxins, trichothecenes, zearalenone, fumonisins in wheat/maize food and feed chains; ochratoxin A in grape-wine and wheat chains; and aflatoxins in dried fruit chain. Novel methodologies, efficient handling procedures and information, dissemination and educational strategies are considered in a context of multidisciplinary integration of know-how and technology to reduce mycotoxins exposure worldwide. Five work-packages (WPs) will develop novel solution driven strategies to reduce both pre-and post-harvest contamination in feed and food chains. They involve: i) optimization of plant resistance and fungicide use; ii) biocontrol to reduce toxigenic fungi in cropping systems, iii) predictive modelling and optimise logistics; iv) novel post-harvest and storage practices and v) application of new food processing technologies. Two horizontal WPs will develop enabling methodologies for i) advanced diagnostics and quantitative detection of toxigenic fungi and ii) rapid and multi-toxin detection of mycotoxins and relevant biomarkers. The project will significantly build on the outcome of several European projects (through most coordinators/partners of FP5 and FP6) on mycotoxins by supporting, stimulating and facilitating education and cooperation with countries having major mycotoxin concerns related to (international) trade and human health. The direct involvement of ICPC countries</p>

	(Argentina, Egypt, Russia, South Africa, and Turkey) and international organizations (CIMMYT, IITA) together with strong scientific alliances with International Experts will strengthen the project through sharing experiences and resources from several past/ongoing mycotoxin projects in a global context.
Scientific officer	Ebba Barany, Unit E3
Budget	5770000€
Website	www.mycored.com

TriticeaeGenome	
Title	KBBE-2007-1-2-02 - CP-IP Genomics for Triticeae improvement
Coordinator	Institut National de Recherche Agronomique, Dr. Catherine Feuillet, catherine.feUILlet@clermont.inra.fr
Partners	<ul style="list-style-type: none"> - Leibniz Institute of Plant Genetics and Crop Plant Research (Germany) - Institute of Experimental Botany, v.v.i. (Czech Republic) - GSF-Forschungszentrum für Umwelt und Gesundheit, GmbH (Germany) - Università degli Studi di Milano (Italy) - University of Haifa (Israel) - MTT (Maa- ja elintarviketalouden tutkimuskeskus) (Finland) - Scottish Crop Research Institute (UK) - Sabanci University (Turkey) - National Institute of Agricultural Botany (UK) - John Innes Centre (UK) - Universität Zürich (Switzerland) - INRA Transfert (France) - BIOGEMMA SAS (France) - Lochow Petkus GmbH (Germany) - Associazione Istituto di Genomica Applicata (Italy) - ALMA MATER STUDIORUM - UNIVERSITA' di BOLOGNA (Italy)
Abstract	The project content: Develop a wide range of genetic and genomic tools and resources for studies in wheat and barley (e.g. construct and anchor physical maps of the wheat and barley chromosome groups 1 and 3, isolate genes and QTLs, identifying and exploiting alleles for isolated genes, developing bioinformatic tools). Contribution to international Wheat genome sequencing effort.
Scientific officer	Annette Schneegans, Unit E4
Budget	5.300.000 euros (EU contribution)
Website	www.triticeaegenome.eu

SWEETFUEL	
Title	(KBBE-2008-3-1-02): SCP. SICA (Latin America, South Africa, India) <i>Sweet Sorghum: an alternative energy crop.</i>
Coordinator	Centre International en Recherche Agronomique pour le Développement (CIRAD), Dr. Serge Braconnier, serge.braconnier@cirad.fr
Partners	<ul style="list-style-type: none"> International Crops Research Institute for Semi Arid Tropics (India) - Centro Nacional de Milho e Sorgo (Brazil) - Agricultural Research Council (South Africa) - UNIVERSIDAD AUTONOMA DE NUEVO LEON (Mexico) - KWS SAAT AG (Germany) - Institut für Energie und Umweltforschung Heidelberg GMBH (Germany) - Alma mater Studiorum-Università di Bologna (Italy)

	<ul style="list-style-type: none"> - Universita Cattolica del Sacro Cuore (Italy) - Wirtschaft und Infrastruktur GMBH & Co Planungs KG (Germany)
Abstract	<p>Increasing world market prices for fossil fuels, driven by limited reserves, growing demand and instability in producing regions, now render renewable fuels economical. Such fuels are also a pathway to reducing GHG emissions and mitigating climate change. Bio-ethanol from crop plants is a promising, partial solution to sustainably satisfy the energy demand for road transport. The success of bio-ethanol from sugarcane in Brazil demonstrates proof of concept but cannot be transferred to water-limited or temperate environments. Sweet sorghum, as a source of either fermentable free sugars or lignocellulosics, has many potential advantages, including: high water, nitrogen and radiation use efficiency; broad agro-ecological adaptation; rich genetic diversity for useful traits; and the potential to produce fuel feedstock, food and feed in various combinations. Fuel-food crops can thereby help reconciling energy and food security issues. This project will breed for improved cultivars and hybrids of sorghum for temperate, tropical semi-arid and tropical acid-soil environments by pyramiding in various combinations, depending on region and ideotype, tolerance to cold, drought and acid (Al-toxic) soils; and high production of stalk sugars, easily digestible biomass and grain (WP 1-3). Molecular-genetic and physiological breeding support is given by WP4, and agro-ecological adaptation and sustainable practices are developed by WP5. Other WPs (6, 7, 8) provide for integrated technology and impact assessments including economics, dissemination and coordination. The Consortium is composed of 10 members from France (leader), Italy, Germany, Brazil, India, Mexico and South Africa, including a seed company. Research involves structured participation of stake holders, including policy makers. Project outcomes will be new germplasm, sustainable practices and commodity chain concepts adapted to each target region. The duration of the project is 5 years.</p>
Scientific officer	Jens Hoegel E2
Budget	
Website	www.sweetfuel.eu

VALORAM	
Title	KBBE 2008-1-4-08) Valorizing Andean microbial diversity through sustainable intensification of potato-based farming systems
Coordinator	Université Catholique de Louvain, Prof. Stephan de Clerck, Stephan.declerck@uclouvain.be
Partners	<ul style="list-style-type: none"> - International Potato Center (Peru) - Promocion e Investigacion de Producxtos Andinos (Bolivia) - Universidad Técnica Particular de Loja (Ecuador) - Austrian Research Centers GMBH (Austria) - University College Cork (Ireland) - Ludwig-Maximilians-Universität München (Germany) - Universiteit Gent (Belgium)
Abstract	VALORAM aims at exploring and valorizing Andean soil microbial diversity for the development of alternative, efficient technologies and crop management practices to improve the sustainability and productivity of Andean cropping systems benefiting rural farming households. The project will focus on potato because of its global importance for small-scale farmers in the central Andean highlands. The participants will use genomic, metagenomic, proteomic and metabolomic analysis to identify novel traits of microorganisms and to characterize beneficial soil

	<p>microbial communities, to achieve the objective. The project specific aims are to (1) explore the agro-ecosystem functions of soil microbes in potato-based cropping systems and preserve the components of this microflora in international culture collections, (2) elucidate the role of rhizosphere microbial communities in promoting plant growth, suppressing soil borne diseases and priming plant biotic defences, developing eco-efficient technologies/products for sustainable crop production systems, (3) develop applied technologies and knowledge-based systems to improve the sustainability and resilience of potato based cropping systems for the benefit of the indigenous farmers and (4) promote the exchange of scientific knowledge and technologies among partners and the LA scientific community to impulse research in this area and support the continuous development of crop production technologies. The strategy for VALORAM implementation is to engage LA and EU partners in developing and further strengthening collaborative research activities in order to sustainably improve potato-based systems. This is supported by a multidisciplinary team of experts with highly complementary skills and based on a robust management structure with an efficient workshop and communication programme. The results will directly benefit the local partners and may also contribute to improve organic potato production in the EU.</p>
Scientific officer	Jean-François Maljean Unit E4
Budget	2977386 €
Website	http://valoram.ucc.ie/

ENDURE	
Title	FP6- European Network for the Durable Exploitation of <u>crop protection</u> strategies
Coordinator	Institut National de la Recherche Agronomique Président du Centre de Sophia Antipolis 400 Route des Chappes, 06903 Sophia Antipolis Cedex, France Prof. Pierre Ricci, Pierre.Ricci@sophia.inra.fr endure.coord@antibes.inra.fr
Partners	<ul style="list-style-type: none"> - Institut National de la Recherche Agronomique - Julius Kühn Institute - Rothamsted Research - Centre de coopération internationale en recherche agronomique pour le développement - Consiglio Nazionale delle Ricerche - University of Aarhus - Agroscope Swiss Federal Research Station - International Biocontrol Manufacturers' Association - INRA Transfert - Plant Breeding and Acclimatization Institute - Scuola Superiore di Studi Universitari e di Perfezionamento Sant'Anna, Pisa - Szent Istvan University - Universitat de Lleida - Plant Research International B.V. - Danish Agricultural Advisory Service - Association de Coordination Technique Agricole - Applied Plant Research B.V. - Agricultural Economic Research Institute
Abstract	130 researchers in agronomy, biology, ecology, economics, social sciences from 18 organisations in 10 European countries are committed to ENDURE

	<p>NoE for four years (2007-2010), with the financial support of the European Commission's Sixth Framework Programme, priority 5: "Food Quality and Security".</p> <p>ENDURE network's objectives are to:</p> <ul style="list-style-type: none"> • Define research priorities on pesticide reduction at the European level • Pool knowledge, facilities and human resources according to the needs of agricultural extension, industry, and the non-profit sector • Become a source of reference satisfying farmer needs and societal expectations. <p>The overall objective of the ENDURE network is to restructure European research and development effort on the use of plant protection products, and establish the new entity as a world leader in crop protection, with the development and implementation of sustainable pest control strategies.</p> <p>This will include a focus on rationalising and reducing pesticide inputs as well as on mitigating inherent risks through a greater exploitation of alternative technologies, and basing control strategies on a more cohesive knowledge of the ecology, behaviour and genetics of pest organisms.</p> <p>The operational and structural objectives of the network are:</p> <ul style="list-style-type: none"> - To overcome fragmentation in crop protection research and development within Europe through the design and implementation of a joint programme of research on crop protection as well as through the creation of a virtual crop-pest control laboratory - To reinforce the R&D capacities needed in Europe to improve the basic understanding of crop pest systems and develop durable pest control strategies - To progress towards a transnational entity aimed at reducing and optimising pesticides inputs by encouraging durable integration of the leading European crop protection institutions, forming the nucleus of excellence around and from which institutions and researchers can integrate their activities - To create a European centre of reference for supporting public policy-makers, regulatory bodies, stakeholders and extension services - To increase mobility of researchers and joint use of facilities, equipment and tools - To ensure the spreading of excellence and support training to facilitate the adoption of safer and environmentally friendly crop protection approaches.
Scientific officer	
Budget	11.200.000 €
Website	www.endure-network.eu

	GLIP and GL-TTP
Title	FP6-Grain Legumes IP and its extension GL-TTP (Technology Transfer Platform)
Coordinator	John Innes Centre, Colney Lane, NORWICH NR4 7UH, United Kingdom Prof. Noel Ellis, noel.ellis@bbsrc.ac.uk
Partners	Dozens of participants from all over the world, including Universidade Católica de Brasília (UCB), Brazil; National Brazilian Agricultural Research Institute (EMBRAPA), Brazil;
Abstract	GLIP will mobilise and integrate European scientific research on grain legumes to solving the problems facing European farmers in producing

	<p>consistent yield of grain legumes by addressing the following objectives:</p> <p>(1) To identify optimal parameters for legumes in feed quality and safety, including GMOs while using legumes to develop healthy and sustainable agriculture.</p> <p>(2) To investigate variation in grain legume seed composition and the factors affecting it.</p> <p>(3) To develop new genetic, genomic, post-genomic and bioinformatic tools to improve and sustain grain legume seed production and quality. To achieve these research objectives GLIP will integrate an ambitious combination of approaches, including biochemistry, plant & crop physiology, agronomy, plant genomics & breeding, and animal nutritional studies. Particular emphasis will be placed upon the use of state-of-the-art methodologies including genomics and bioinformatics, together with transcriptomics and metabolomics.</p> <p>These research objectives are underpinned and complemented by a fourth objective to ensure the efforts of the scientific programme are appropriately organised and the products produced from it are properly disseminated to ensure maximum benefit is obtained. This is summarised as follows:</p> <p>(4) To coordinate and integrate grain legume research, to provide training in emerging technological approaches, to disseminate the results and transfer technology to industry.</p> <p>GL-TTP (Grain Legumes Technology Transfer Platform) is a not-for-profit organisation that bridges the gap between research and industry to increase the production and quality of grain legumes worldwide. GL-TTP was initiated in 2005 by the EU Grain Legumes Integrated Project (GLIP) to ensure the exploitation of the project outputs by the grain legume industry.</p> <p>Having a foot in both the research and industry worlds, GL-TTP is in an ideal position to identify the specific needs and constraints of grain legume breeders and channel the latest research results and technologies through an accelerated pipeline to the grain legume industry.</p>
Scientific officer	Jean - François Maljean, Unit E4
Budget	More than 14750000 euro
Website	www.eugrainlegumes.org