**List of External Experts for the GBEP AG6 “Bioenergy and Water” - Full list**

1. **Rocio Diaz-Chavez**, Imperial College, UK [r.diaz-chavez@imperial.ac.uk](mailto:r.diaz-chavez@imperial.ac.uk)

Dr Rocio A Diaz-Chavez is a Research Fellow at the Centre for Environmental Policy of Imperial College London and MSc tutor for the Distance learning MSc of the Centre for Development, Environment and Policy at SOAS (School of Oriental and African Studies). She has extensive work and academic experience in sustainability assessment and environmental management tools and methodologies. She has participated and coordinated different EU funded projects (CARENSA, BEST, COMPETE, Global-Bio-Pact, AfriCan Climate, BIOCORE) and worked in different consultancy work for the EC and in other regions in Africa, Asia and Latin America.

Since 2011 she has been the Co-Chair of the Social Group developing the Bioenergy Standard for the International Organisation for Standardisation (ISO). She is also the co-chair of the International Energy Agency for the UK Task 40 (Biomass trading) and co-chair of the energy section of the International Association of Impact Assessment. She received the SCOPE 2010 Young Scientist Award in Environmental Management for her work on indicators and standards.

1. **Jessica Chalmers**, Winrock International, UK [jchalmers@winrock.org](mailto:jchalmers@winrock.org)

Jessica is a Senior Associate of Winrock International and contributes to the design and implementation of bioenergy projects and programmes, provides technical assistance on sustainability issues and facilitates internal and external collaboration between experts and organisations. Her current focus is on a programme aimed at reducing land and process-based GHG emissions from oil palm in Indonesia. She has conducted and presented research on the sustainability impacts of biofuels including a white paper on biofuels and water and a bioenergy monitoring framework. She has led revisions to the IFC agribusiness Environmental, Health and Safety Guidelines including the development of performance indicators aligned with sustainability principles. Jessica began her career in bioenergy working on the development of a portfolio of sugarcane bioenergy projects in South East Asia for the private sector. With a multistakeholder group in 2007, she led the development of regulatory reporting guidance for the UK Government, on the greenhouse gas and wider sustainability aspects of biofuels. Jessica completed an MSc in Environmental Technology at Imperial College, London and holds a Lead Auditor certificate from the Roundtable on Sustainable Biomaterials.

1. **Virginia Dale**, Oak Ridge National Laboratory, USA. [dalevh@ornl.gov](mailto:dalevh@ornl.gov)

Dr. Virginia H. Dale is a Corporate Fellow in the Environmental Sciences Division at Oak Ridge National Laboratory (ORNL) and was selected as the 2006 Distinguished Scientist for the Laboratory. She is Director of ORNL’s Center for BioEnergy Sustainability (http://www.ornl.gov/sci/ees/cbes/). She obtained her M.S. in mathematics from the University of Tennessee and her Ph.D. in mathematical ecology from the University of Washington. Her primary research interests are environmental decision making, forest succession, land-use change, landscape ecology, ecological modeling, and sustainability of bioenergy systems. Virginia has authored 10 books and more than 220 published articles. She has served on national scientific advisory boards for five federal agencies (the Environmental Protection Agency, US Departments of Agriculture, Defense, Energy, and Interior). She recently served on the committee of the US National Research Council on Renewable Fuel Standard: Potential Economic and Environmental Effects of U.S. Biofuel Policy. Virginia was Editor-in-Chief of the journal Environmental Management for 13 years and still serves on the editorial board of several journals.

1. **Ioannis Dimitriou** [Jannis.Dimitriou@slu.se](mailto:Jannis.Dimitriou@slu.se)

Assoc. Prof. Dr. Ioannis Dimitriou is Senior Researcher at the Swedish University of Agricultural Sciences (SLU) in Uppsala, Dep. of Crop Production Ecology, conducting biomass-for-energy related research during the last 15 years. His general research activities are related to the implementation of short-rotation energy crops and their implications in system sustainability. He has been also working with using short-rotation energy crops as multifunctional systems for bioenergy but also for wastewater treatment and utilisation looking at the impact on the environment and on the surroundings.

Dimitriou has been involved in a range of national and international (both EU and other) biomass-related projects (detailed description at http://www.slu.se/en/departments/crop-production-ecology/contact/personal-homepages/ioannis-dimitriou). In other national and international duties/activities, Dimitriou has served as the Vice-Chairman of FAO’s International Poplar Commission (IPC) WP6 Environmental uses of poplar and willow, coordinator of the ERA-Net Bioenergy project Rating-SRC (“Reducing environmental impacts of Short Rotation Coppice (SRC) through evidence-based integrated decision support tools”), member of the Steering Board of the Swedish National Poplar Commission, chairman of the EU Network of SLU’s Faculty of Natural Resources and Agriculture, and chairman of the Committee on Global Issues at SLU’s Faculty of Natural Resources and Agricultural Sciences.

He is currently coordinator of four national biomass projects linking bioenergy production and environmental impacts, and partner in the FP7 project Greenland “Gentle remediation of trace element contaminated land” and the IEE project SRCplus “Short Rotation Woody Crops (SRC) plantations for local supply chains and heat use, as well as a Management Committee member of the EU Cost Action FP1301 Eurocoppice “Innovative management and multifunctional utilization of traditional coppice forests”.

1. **Floor van der Hilst** [F.vanderHilst@uu.nl](mailto:F.vanderHilst@uu.nl)

Floor van der Hilst is Assistant Professor at Energy & Resources (E&R) of the Copernicus Institute, Utrecht University, the Netherlands. Floor has a MSc in Science and Innovation Management with a specific focus on the implementation of renewable energy technologies.  She worked as a junior researcher and teacher in the innovation sciences department of Utrecht University and as a scientific researcher at the Dutch Energy Research Centre in Petten and Amsterdam. From 2007 to 2012 she did her PhD research on spatial variation in potentials, costs, and impacts of bioenergy supply chains which was a joint project between Utrecht University and Wageningen University. In addition, she was involved in many international research projects and spent a considerable amount of time in Mozambique, Ukraine, Brazil to assess the sustainability of biomass supply chains in collaboration with local research partners

Currently, she is the coordinator of the research on the sustainability of biomass supply chains within the BE-Basic Programme involving several Dutch and international research partners. Her research focusses on integrated assessments of the sustainability of energy crop production taking spatial and temporal  heterogeneity of biophysical and socio-economic conditions into account. She supervises several PhD and MSc students on various topics related to impacts of biomass supply  chains on direct and indirect land use change, GHG balances, impacts on water, soil and biodiversity; economic viability; and impacts on rural development and food security. She (co-) authored several publications on these topics and provided numerous presentations on international workshops and conferences.

1. **Shabbir Gheewala** [shabbirg@hotmail.com](mailto:shabbirg@hotmail.com)

Shabbir H. Gheewala is a professor at the Joint Graduate School of Energy and Environment (JGSEE), Thailand where he teaches Life Cycle Assessment and heads the Life Cycle Sustainability Assessment Lab. His research focuses on sustainability assessment of energy systems; sustainability indicators; and certification issues in biofuels and the agro industry. Shabbir is a national expert on life cycle inventory as well as product carbon footprinting in Thailand. Over the last few years, he has also been working on water footprinting, developing the water stress indices for the watersheds in Thailand with a view to assessing the impacts of biofuels on water. He was a lead author on “The Bioenergy and Water Nexus” report of UNEP, Oeko-Institut and IEA Bioenergy Task 43. Shabbir mentors the research network on LCA and policy for food, fuel and climate change in Thailand. He is on the editorial boards of the International Journal of Life Cycle Assessment, Energy for Sustainable Development and the Journal of Sustainable Energy and Environment.

1. **Jean-Francois Dallemand**, EC-JRC [Jean-Francois.DALLEMAND@ec.europa.eu](mailto:Jean-Francois.DALLEMAND@ec.europa.eu)

J.F.Dallemand is presently contributing to the activities of the Renewable Energies & Energy Efficiency Unit of the Institute for Energy & Transport of the Joint Research Centre (European Commission, Ispra, Italy). In addition to activities of scientific/technical networking in the field of biomass resources and availability, JF Dallemand is focusing on the issue of the sustainability of bioenergy e.g. in cooperation with International Energy Agency Bioenergy Task 43 on Biomass feedstock for energy markets.

Agronomist specialised in agricultural & environmental remote sensing, J.F.Dallemand joined the Joint Research Centre of the European Commission in 1997 after working with the Food & Agriculture Organisation of the United Nations, the European Space Agency & the PHARE Multi-Country Environment Programme. Professional experience in West Africa, Brazil and Indonesia. Participation in the past at JRC agricultural monitoring programmes in Central/Eastern Europe and scientific networking between research communities and initiatives of sustainable development at local level. Former Technical Coordinator of the European Biomass Conference.

1. **Jorge Hilbert**, INTA, Argentina [jorgeantoniohilbert@gmail.com](mailto:jorgeantoniohilbert@gmail.com)

Agronomical Engineer University of Buenos Aires, 1980 Master Degree Farm Mechanization Univ. of La Plata, 1990 Specialist Negotiation and change. UBA 2000 former National Coordinator of the Bioenergy program (2006-2014), former director of the Rural Engineering Institute INTA (2001-2006). Present International consultant of INTA in innovation activities. Member of the Scientific Advisory Board (SAB) of IINAS International Institute for Sustainability analysis and strategy. Participant of International Energy Agency working groups; Cochair of agricultural subcommittee Global Methane Initiative, Coordinator and professor biomass in the master degree course of the Universidad Tecnologica Nacional, bioenergy professor at the Universities of Belgrano, ITBA, B.Blanca, & Comahue at postgraduate level, Steering committee member of the Pan American Biofuels and Bioenergy Sustainability Research Coordination Network (RCN), member of the scientific board of CCCLRLatinaomerica Renovable and participant in bioenergy commissions at the national agronomical engineers council and renewable energy national chamber.

Responsible and participant in research and development Projects of INTA and the European Union framework 7 program (Biotop, Babethanol & Global Biopact). Former President of the Latin American rural engineering congress and responsible for national and international workshops and seminars. Active member of Roundtable of Sustainable Biofuels and Global Bioenergy Partnership.

Author of four books, more than 76 research papers and 203 articles published in different media in Argentina and abroad, 31 technical standards y 67 specific projects. National and international consultant and postgraduate professor at four Universities with more than 77 courses. Reviewer of international and national journals, columnist in different radio and TV programs.

Training and conferencces trips to China, Chile, Brazil, United States, and Austria Mexico Spain Italy Germany. Columnist of written and audiovisual media in Argentina. National reference for, Bioenergy (biodiesel, biogas,), precision agriculture, human factors, terramechanic.

1. **Louise Karlberg**, Stockholm Environment Institute, Sweden [louise.karlberg@sei-international.org](mailto:louise.karlberg@sei-international.org)

Louise Karlberg, PhD, is a Research Fellow at the Stockholm Environment Institute and also Head of Unit of the Resources and Development research group at the Stockholm Centre. She has fifteen years of professional experience from research on environment and development, including five years as a manager. Her main research interests are in the fields or ecohydrology and environmental physics, with a special attention to water flows in terrestrial ecosystems. Water resources interventions in small scale agriculture in the tropics is one of her focus areas. Recently, the quantifications of inter-linkages (nexus) between the agriculture, energy and water sectors and the environment has been the focus of her work, including facilitation of dialogue between multi-stakeholder groups. Louise has also been involved in water and land assessments for food and bioenergy production at the global scale. Modelling and field measurements are two tools that were commonly used within these projects.

1. **Wolfgang Lucht**, PIK, Germany [Wolfgang.Lucht@pik-potsdam.de](mailto:Wolfgang.Lucht@pik-potsdam.de)

Wolfgang Lucht is Co-Chair of "Earth System Analysis", one of four Research Domains at the Potsdam Institute for Climate Impact Research in Potsdam, Germany. He is also the Alexander von Humboldt Chair in Sustainability Science at the Department of Geography at Humboldt University in Berlin. In 1993 he obtained his doctoral degree from the University of Kiel for research in solar system physics. He went on to spend several years as a postdoc and Research Assistant Professor at the Department of Geography and Center for Remote Sensing of Boston University, USA, where he worked as a group leader contributing land surface science to NASA's leading environmental monitoring sensor, MODIS. He joined the Potsdam Institute of Climate Impact Research in 1999 and went on to lead the institute's Research Group on the Global Biosphere and then PIK's Research Domains on "Earth System Analysis" and "Climate Impacts and Vulnerability". Among his previous functions are membership of the European Space Science Committee, speaker of the German Climate Change Research Programme DEKLIM, member of the Advisory Board for Austria's Sustainability Research Programme ProVision, and member of the German National Committee on Global Change Research. He is currently a member of the German Comittee for Future Earth, the Program Committee Earth Observation of the German Aerospace Center (DLR), and the Governing Council of the cross-faculty Centre for Excellence on "Transformations of Human-Environment Systems (THESys)" at Humboldt University Berlin. He has been a contributing author to the Intergovernmental Panel on Climate Change's (IPCC) 4th and 5th Assessment Reports and a lead author on its Special Report on Renewable Energies. A physicist turned geoecologist and sustainability scientist, Wolfgang Lucht's work addresses the future of the biosphere, the effects climate and land use change on global landscapes, the interaction between human societies and the Earth's environment, sustainability and Earth system analysis.

1. **Márcia Moraes**, Universidade Federal de Pernambuco, Brazil [marcia.alcoforado.ma@gmail.com](mailto:marcia.alcoforado.ma@gmail.com)

Márcia Alcoforado de Moraes is an Associate Professor at the Universidade Federal de Pernambuco, Brazil where she teaches courses such as: Applied Mathematics Programming, Water Resources Optimization and Environmental Economics in the both post-graduation programs, Civil Engineering and Economics. Besides, she coordinated and is team member of national and international research projects. She received a BS in electronic engineering and a MS in electrical engineering from Universidade Federal de Pernambuco, Brazil, and a PhD in Economics from the same university with a internship at the International Food Policy Research Institute in Washington, DC, USA. Recently, she concluded her Postdoctorate in Environmental Engineering at University of Illinois at Urbana-Champaign with collaboration of Prof. Ximing Cai.

Her research interests are: Economic and managerial mechanisms for efficient water allocation; Evaluation of policy instruments; Basin modeling as support for water resources management; Integrated economic-hydrologic modeling; Spatial decisions support systems She has published in the areas of water resources planning and management and Economics.

1. **Dan Neary**, USDA Forest Service, USA [dneary@fs.fed.us](mailto:dneary@fs.fed.us)

Daniel G. Neary is a Science Team Leader and Research Soil Scientist, Southwest Watershed Team, Air, Water & Aquatic Environments Science Program, USDA Forest Service, Rocky Mountain Research Station, Flagstaff, AZ. He has a B.S., M.S., and Ph.D. from Michigan State University, and is currently an Adjunct Professor at the University of Arizona, and Northern Arizona University. Dan has worked in Michigan, New Zealand, Australia, North Carolina, Florida, and Arizona. He has written over 400 papers dealing with the management of water in forest watersheds.

Although Dan’s current research is on the watershed-scale effects of prescribed fire and wildfires on soils and water resources he has worked on the impacts of various water quality issues such as wastewater, fertilizers, pesticides, intensive site preparation, and bioenergy. Dan is currently on a six-month OECD Fellowship with SCION Forest Research Institute, Rotorua, New Zealand, evaluating the water quality impacts of forest productivity intensification interventions. He worked at CSIRO, Hobart, Tasmania, for six months as a McMaster Fellow studying the water quality effects of Best Management Practices. Dan has been involved in IEA Bioenergy in Task 43, and predecessor Tasks since the mid-1980s.

1. **Helen Watson**, Univ. KwaZulu-Natal, South Africa [watsonh@ukzn.ac.za](mailto:watsonh@ukzn.ac.za)

Dr Helen Watson is an honorary senior lecturer at the University of KwaZulu-Natal (UKZN), South Africa. She obtained her BSc, BSc Honours and MSc degrees from the former University of Natal (UN), and her PhD from the former University of Durban-Westville (UDW). In 2004 UN and UDW merged to form UKZN. Helen lectured GIS and Natural Resource Management at all levels and recognized as a Distinguished Teachers in 2010.

Helen served on the South African National Forestry Advisory Council for six years after the transition to democracy when new policies and legislation for managing this diverse resource were developed. During this period she developed a tool for monitoring and evaluating the environmental well-being of land transferred under the country’s Land Reform Program.

Helen has led work packages on the following EU INCO research contracts (1) Southern African Savannas Network, (2) Cane Resources Network for Southern Africa and (3) Competence Platform on Energy Crop and Agroforestry Systems – Africa. Helen is currently involved in identifying land available and suitable for food crop and/or bioenergy feedstock production, biomass harvesting, etc. Her particular interest is determining whether protected and ‘High Conservation Value’ areas currently merit being considered ‘no-go’ for bioenergy production, and determining why land that has previously been used for food and/or cash crop production has been abandoned.

1. **Graham Jewitt**, Univ. KwaZulu-Natal, South Africa [JewittG@ukzn.ac.za](mailto:JewittG@ukzn.ac.za)

Prof Graham Jewitt holds the Umgeni Water Chair of Water Resources Management and is the Director of the Centre for Water Resources Research (Http://cwrr.ukzn.ac.za) at the University of KwaZulu-Natal, where he leads a strong team of scientists and students covering a broad range of research topics. These include the assessment of impacts of land use (e.g bioenergy production, afforestation and deforestation) and climate change on water resources and the generation of ecosystem goods and services, the development of various tools to consider these and the management systems in which these can be applied. He has undergraduate and MSc Degrees from the University of KwaZulu-Natal and a PhD from the University of Stellenbosch and has authored and co-authored more than 50 peer reviewed papers and is the supervisor of, or has supervised, over 40 PhD and MSc students.. He is the South African contact point for the International Association of Hydrological Sciences (IAHS), is on the editorial boards of the journals WaterSA and Hydrology and Earth System Sciences (HESS), is an elected member of the management board of Waternet and is active in several other national and international fora. Recent work has been focused on the effective use of science in management systems and to better inform and land and water resources policy development, especially in developing countries.

1. **Dale Robertson,** Research Hydrologist (Biogeochemistry), Wisconsin Water Science Center, U.S. Geological Survey, [dzrobert@usgs.gov](mailto:dzrobert@usgs.gov)

Dale Robertson is a Research Hydrologist with the U.S. Geological Survey, Wisconsin Water Science Center, in Middleton, WI. He received his M.S. and Ph.D. in Oceanography and Limnology at the University of Wisconsin-Madison, and was a Post-Doctoral Research Fellow at the University of Western Australia. His current research with the USGS deals with estimating loads and concentrations of nutrients in streams over large geographic areas, such as the Great Lakes and Mississippi River Basins, developing nutrient criteria for streams and rivers, modeling mixing and eutrophication in lakes, and examining the effects of climate change on the physical dynamics, ice cover, and productivity of lakes. Dale is an Adjunct Professor at the University of Wisconsin-Green Bay, Michigan Technological University, and University of Toledo, and he is also an Honorary Fellow with the Center for Limnology at the University of Wisconsin-Madison.

1. **May Wu,** Team Leader, Water Analysis; Principle Environmental System Analyst, Argonne National Laboratory (supported by U.S. Department of Energy), [mwu@anl.gov](mailto:mwu@anl.gov)

May Wu is the Principal Investigator for water sustainability analysis in biofuel production. Her research focuses on water use, water quality and water availability as related to the development of conventional fuel, electricity, emerging fuels and life cycle analysis. Wu currently leads an effort to develop tools to better understand the water footprint of biofuels produced from starch, cellulosic, oil seeds, and algae. She also heads a project applying watershed modeling for the Mississippi River basin using a Soil Water Analysis Tool. She has extensive experience in the areas of water treatment, wastewater treatment, online monitoring of anaerobic biological processes, microbial-induced corrosion, fermentation and membrane separation. Before joining Argonne in 2004, Wu was a Senior Research Microbiologist at Nalco Company. She holds several U.S. patents, has authored or co-authored 40 publications and has a dual Ph.D. in Environmental Engineering and Environmental Toxicology from Michigan State University.

1. **Yiping Wu,** Scientist, Hydrology and Ecology, ASRC Research and Technology Solutions, U.S. Geological Survey Earth Resources Observation and Science Center, [ywu@usgs.gov](mailto:ywu@usgs.gov)

Dr. Yiping Wu is a Senior Scientist at ASRC Federal, contractor to USGS EROS Center. His research interest focuses on water resources, watershed hydrology, nonpoint source pollution, climate and land-use changes, carbon dynamics (greenhouse gas emissions), sustainability of bioenergy development, data assimilation, etc.

During his PhD study in the University of Hong Kong, Yiping participated in an NSF of China and Hong Kong Research Grants Council (RGC) Joint Research Scheme (*Integrated physical and ecological management of rivers - with particular reference to the East River*). Since November 2009, Dr. Wu, as the primary working force, has completed a NASA-sponsored bioenergy project (*Integrated modeling of future agricultural change in the Northern Great Plains: biophysical potential, sustainability, and environmental consequences*) which is to develop new knowledge of potential impacts of climate change and land use change (biofuel production alternatives) on water quantity/quality. Dr. Wu, as a core member, also participates in a Department of Interior (DOI)-sponsored project (*Assessment of biological carbon sequestration potential and reduction of N2O and CH4 emissions in the United States*) to assess carbon dynamics on landscapes at national scale. In this team work, Dr. Wu has been working with the development and applications of highly complex and interdisciplinary knowledge-based ecological models to simulate major greenhouse gas emissions from U.S. lands and watersheds. Dr. Wu also serves a USGS-sponsored project (*Performing data assimilation procedures to investigate carbon cycling processes, modeling, and uncertainty*) for evaluating the water and carbon fluxes/exchanges between lands and atmosphere using data assimilation techniques, flux tower-based measurements, and remotely-sensed data at site/regional scales. In the field of environmental research, Dr. Wu has published several high-impact papers in renowned international journals over the past years.

Yiping holds a Bachelor of Engineering degree (2001) and a Master of Engineering degree (2004) from Xi’an University of Architecture & Technology, and a Doctorate of Philosophy degree (2009) from The University of Hong Kong.

1. **Manoel Teixeira Souza Júnior,** Director-General, Embrapa Agroenergy, [manoel.souza@embrapa.br](mailto:manoel.souza@embrapa.br)

Dr. Souza holds a B.Sc. degree in Agronomic Engineering from the University of Brasília (1987), a M.Sc. in Agronomy (Plant Breeding and Genetics) from the Federal University of Lavras (1991) and a Ph.D. in Plant Pathology - Plant Molecular Biology from Cornell University (1999). He has been a Researcher at the Brazilian Agricultural Research Corporation (Embrapa) since March 1990, and has worked at the Bioenergy Laboratory of Embrapa Agroenergy since March 2010. Between March 2006 and March 2010, Dr. Souza was a Researcher at Embrapa LABEX Europe in Wageningen, Netherlands. He is also a Professor at the Graduate Program in Plant Biotechnology of the Federal University of Lavras, Brazil. In 2010 Dr. Souza received an award for excellence by Embrapa. He represented Brazil in the Working Group on Harmonization of Regulatory Oversight in Biotechnology, organized by the OECD between November 2005 and January 2010, and was a member of the Steering Committee of the Global Musa Genomics Consortium (GMGC) and the Scientific Committee of the OPGP Oil Palm Genome Project. He has experience in agronomy with emphasis on genetic control of biotic stresses (viruses and fungi), having worked in particular with genomics, pathogen x host interaction, protection mediated by RNA, biotechnology and development of systems for molecular diagnosis of plant pathogens. He was also Associate Editor of the Brazilian Phytopathology Journal and Editor of Acta Horticulturae, vol 864, Proceedings of the Third International Symposium on Tropical and Subtropical Fruits. Dr. Souza supervised or co-supervised more than 20 students (undergraduate, masters and doctoral) and researchers (fellows and postdoctoral DTI).

1. **Jaime Finguerut,** Technical Assistant of the CEO, SugarCane Technology Center, [jaime@ctc.com.br](mailto:jaime@ctc.com.br)

Jaime Finguerut, 61, Brazilian, chemical engineer since 1975, made post-graduation studies in Biochemical Engineering at Polytechnical School of São Paulo University - USP Chemical Engineering Department, worked at the Biological Treatment Division at the São Paulo State Environmental Protection Agency - CETESB developing anaerobic treatment process then as teacher and fermentation researcher at Industrial Engineering Faculty (FEI) where teaches Biochemical Engineering and worked with advance fermentation process development in Single Cell Protein production and is with CTC S.A.-Sugarcane Technology Center since November 1979, where had a leadership role in developing the Ethanol production process, working with Alcoholic Fermentation in several positions, including in the technical transfer area and then as Industrial Strategic Development R&D Manager. Now is Technical Advisor to the CTC's CEO where looks for new R&D Themes and new ways of making the R&D, such as by establishing new partnerships. CTC-Centro de Tecnologia Canavieira S.A. (SugarCane Technology Center) is a private for-profit R&D organization, leading the biotechnological development of sugarcane business. Is directly related to the sugarcane, sugar, ethanol and bioelectricity agribusiness in Brazil. CTC has today as shareholders the sugarcane producers and sugar and ethanol mills in all Brazilian producing regions, representing approx. 60% of the Brazilian sugarcane production. CTC started its R&D program in 1969 with the initial focus of developing sugarcane varieties and now it works in the development of new, improved and better sugarcane varieties for all production environments. CTC also develops new technologies such as second generation ethanol and is using new and foremost biotechnology tools for its R&D program.