



November 5, 2009

**Agricultural Scientific Research**  
**BIOTECHNOLOGY KNOWLEDGE RESOURCES**  
**to Support EU FP7 RTD Participation**

***3R Research Infrastructures***  
*Knowledge Base Integrated Scientific RTD Installations*

The ***3R Research Infrastructures*** are **specific scientific & technical engineering knowledge bases** which are **integrated to laboratory & field demonstration installations** and having **unique & specialized capability** performance. The integrated specific knowledge bases and installations effectively supporting the new generation interdisciplinary (novel & innovative + knowledge based & added value) advanced scientific research development works.

The core element and valuable asset of the 3R Research Infrastructures is the available & coherently integrated **human resources, objective driven by** the Swedish inventor and environmental engineer **Edward Someus**.

As the RTD works are covering **full range and added value chain from science to market driven economical applications**, therefore we are capable to deliver **ready and proven success results to all stakeholders**, including but not limited to the scientific, end-user, Consumer, financial investor, permit Authority and general public communities as well.

These RTD works are executed by the Swedish-Hungarian “*science-to-achieve-results*” driven **independent SME organization** Terra Humana Ltd., while taking into account the multi phase networks, **optimal use of the human and financial resources available** in the EU 27.

- **THE RESULTS** from science to industrial applications **ARE NEW PRODUCTS, PROCESSES, TECHNOLOGIES AND ENGINEERED EQUIPMENTS**, which are **BETTER, SAFER, FASTER and LESS COSTLY** than any known systems.
- **The results providing European-wide distributed strategic impacts in the field of carbon, agro biotechnology and environmental sciences** proven by scale up engineered economical industrial demonstrations.

## Targeted industrial application areas:

- **RECYCLING OF AGRICULTURAL BY-PRODUCTS AND WASTE**
- **Carbon for agricultural biotechnology:** integrated thermal and biotechnological recycling of natural ingredients from agro and food industrial byproducts & wastes for production of efficient biological control and natural plant fertilizer products in integrated cultivations.
- **Carbon for Clean Energy:** 3R Anthracite Clean Coal, conversion of low rank coal and renewable energy biomass resources into high rank anthracite type solid fuel by carbonization pre-treatment process for solid fuel power plants up to 300 Mwe.
- **Carbon General:** alternative carbon management and carbonization/thermal desorption applications are under development.
- **The results open new technological and economical ways, while implementing the sustainable environmental concepts of “3R” Recycle, Reuse and Reduce for “3P” Prevention, Protection and Preservation.**

## AGRO BIOTECHNOLOGICAL KNOWLEDGE BASES

- **Soil microbiological science**
- **Soil fertilization science**
- **Biotechnological industrial process and equipment engineering – DEVELOPMENT – ENGINEERING DESIGN – MANUFACTURING – INSTALLATION – OPERATION**
  - Liquid fermentor process and equipment design and engineering
  - Solid fermentor process and equipment design and engineering
  - Biotechnological fermentation plant auxiliary systems design and engineering
  - Heat exchangers
  - Solid material logistics, transport and storage
- **Implementation of ISO 14001 standards at industrial units**
- **Scientific expertise on environmental assessments,** including industrial & agricultural environmental impacts on soil, air, water, biosphere and impacts of waste (also hazardous) material on the human and natural environment.
- **Industrial permitting** of environmental, waste management and recycling projects.