



EU-DRIVERS

European Drivers for a Regional Innovation Platform

- The Project
- Project Property and Space
- Property and Space Ownership and Management

- Property and Space Challenges
- Legacy issues
- Other significant assets

▶ Thessalia, Greece. Where are we?



Greece :

- ▶ Population: 10,5 million
- ▶ GDP: 330 billion dollars , *0.53% of the world economy*
- Per Capita \approx 32,000 dollars, *just below the EU average, 25–30th position in the world*
- ▶ Main Industries:
 - predominately service economy (\approx 70% of GDP)*
 - *Shipping, Tourism*
 - *Agriculture, Food*
 - *Light industry*
- ▶ Higher Education
 - *32 HEIs: 14 Higher Technological Education Institutes, 18 Universities,*
 - *610,000 Students (300 over their regular study period)*



▶ The Region of Thessaly

▶ *Population*

750.000 (7,1% of Country)
 3 larger of the 13 regions in the country

▶ *GDP*

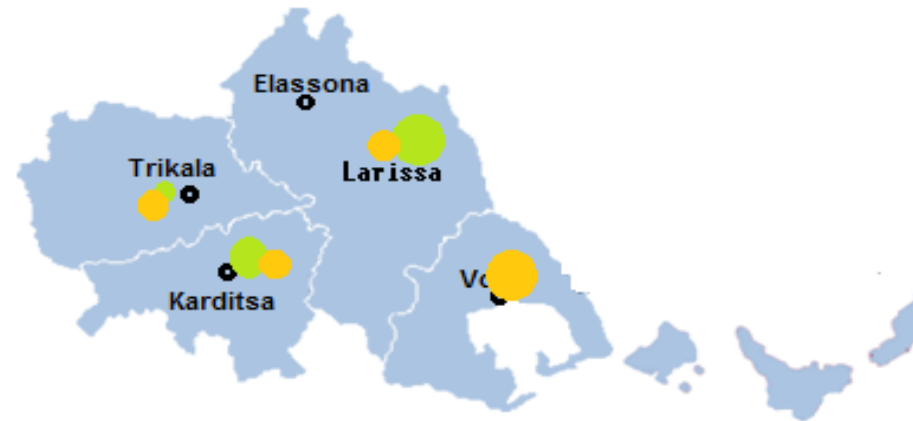
Per Capita: 90% of national average,
 67,7% of EU25 average
Total GDP: 6,3% of total (4th in GDP contribution)
 17% primary sector, 22% secondary , 61% tertiary
 National level 8% , 24% , 69%

▶ *Employment by sector*

28,1% , 19,2% , 49%
 (National average 14.7%, 21.5%, 58.6%)

▶ *Main Industries*

Agriculture
 Food
 Furniture



▶ *Higher Education*

Technological Education Institute

4 Faculties, 250 FT , 900 PT Academics, 18.000 students
 Business & Management, Engineering, Agriculture
 Technologies , Food & Technology, Furniture & wood
 Technologies

University of Thessalia

4 Faculties, 460 FT, 85 PT Academics, 9600 students
 Engineering, Agriculture, Humanities/Social Sciences,
 Medicine,

▶ Particularities of the Ellassona town and district *Home of Mount Olympus*



- ▶ *Area of 350 Km² – 75% semi-mountainous*
- ▶ *25% of total land consist rich pasture areas (state-owned, municipal, or private)*
- ▶ *Large Concentration of sheep & goat farms*
- ▶ *65 Dairy Product Companies. Mostly family owned*



Meets the requirement for FETA cheese Protected Designation of Origin (PDO).

▶ The Project

NOV.ENV.WHEY@THESSALY.GR

(Novell Environmental Whey at Thessaly, Greece)

▶ *Partners*

- *Technological Education Institute of Larissa*
- *Municipality of Ellassona*
- *Association of Dairy Producers of Larissa & Magnesia*

▶ *Region of Thessaly, Greece (District of Ellassona)*

▶ *Subject*

- *Transfer of technology to address the whey pollution problem which is a substantial environmental concern for the region of Thessaly*
- *Develop a regional partnership between academia, business and local authorities so that university research and technology development results concerning environmental protection will be diffused and applied in the local business environment.*

PROJECT FLOWCHART

1st year

OCTOBER 2010. Creation and presentation of a film from raw material filmed in Polish dairy factory and presenting a good practice of total utilization of whey to produce :

- Whey powder
- Lactose powder
- Low calories protein cream

Workshop No1 (JANUARY 2011) : presenting the capacity of freeze drying to convert whey to powder

Workshop No2 (JUNE 2011): presenting the capacity of spray drying to convert whey to powder

Workshop No3 (OCTOBER 2011): presenting the capacity of NANOFILTRATION to effectively concentrate the whey reducing its volume

2nd Year

Workshop No4 (JANUARY 2012) : presenting the capacity combined nanofiltration and freeze drying to produce whey powder

Workshop No5 (JUNE 2012) : presenting the capacity combined nanofiltration and spray drying to produce whey powder

Workshop No6 (OCTOBER 2012) : Presentation of a combined process of nanofiltration pre-concentration and high vacuum thermal distillation supported by solar energy to convert whey into dry powder.

3rd Year

Workshop No7 (FEBRUARY 2013) : Whey fermentation to produce BIO-ETHANOL

Workshop No8 (JUNE 2013) : Whey fermentation to produce MONOCELLULAR

Workshop No9 (OCTOBER 2013) : Whey fermentation to produce GELAN GUM

Workshop No10 (FEBRUARY 2013) : Whey fermentation to produce LACTIC ACID

**Marketing and
business plant**

PROJECT OUTCOME

- Adoption of novel technologies by the dairy industry in Ellassona district
- Solution of a severe environmental problem concerning the municipality.
- Critical Assistance provided by a local academic Institute (TEI Larissa)

- ▶ Workshop according EU-Drivers Project..Subject Nanofiltration concentration (4:1) for whey.....



- ▶ For the project a property of 240 m² has become available at TEI of Larissa–Biosystems Engineering Dept. for 5 years for serving the project. This is the Laboratory of Food Process and Bioenvironmental Engineering.
- ▶ Responsible for the property is Prof. Pantelis Ipsilantis–vice President and deputy the Laboratory Director Assistant Prof. Konstantinos Petrotos
- ▶ Access to advanced research facilities of a value 1000000 Euro are ensured and these are used for demonstrating to the dairy people the new technology for facing the whey problem. Free access to the dairy people is also achieved under TEI licence and workshops has already carried out.
- ▶ Additionally, an office of 30 m² is provided in Municipality of Ellassona to provide information for the project.



▶ Property and Space Challenges and how to resolve this.....

- ▶ *We need some more minor facilities and especially two tanks of 5 m³ each with a chilling system to preserve the whey to be used for the workshops. This is going to be available as a free offer by the Association of Dairy Industries along with a back pressure valve to be used in the upgraded nanofiltration experimental rig*

All this material is agreed to be offered to the Laboratory without any cost and to be permanent equipment even after the project finishes.....



▶ Legacy issues & Other Significant assets

- ***Nothing is going to change in property after the finish of the project. The resources which will be offered to TEI by the Association of Dairy producers is agreed to be remained as TEI property and the connection with the Association will continue and the ties are expected to be more intensive after the experience of the EU Drivers Programme. It is also agreed the Laboratory of Biosystems Engineering to be used for running research programmes with members of the Association during the period of the construction of the local industrial units in the dairies to process on-site the whey in each one of the dairy or in clusters and also for small scale additional training in the new technology for the dairy employees.***



*Thank you very much for your
attention !!!!*

