

Promoting favourable conditions to
establish biodiesel market actions

BIODIESEL CHAINS

Project - EIE/05/113/SI2.420022

Intelligent Energy - Europe Programme

Flueraru Catalin

– Intertermo Concept Ltd (ITC) – Partner 5



The project addresses directly the following target groups:

- **Agricultural community**
 - **Biodiesel producers**
 - **Automotive industry**
 - **Motor oil industry**
- **Local energy agencies**
 - **Consumers**
- **Environmental groups**

The project is organised in six core WPs plus two further WPs for management and common dissemination activities

ITC (Partner No 5) will contribute in all activities of the project and will also be the national co-ordinator in the country survey, the case studies and respective best practices and dissemination and networking activities on biofuels and biodiesel in the Romania.

Socio-economic profile of Romania

After 1990, Romania experienced a volatile economic environment characterised by unstable GDP evolution, high inflation and growing macroeconomic imbalances.

Macroeconomic conditions have improved in the last three years. By the end of the year 2004, the budget deficit was brought to 3.3 per of GDP.

Production statistics show that the strong acceleration in growth was partially the result of a spike in agricultural output which increased by an estimated 21.2% in real terms.

Continuation of a strong growth fully supported by economic restructuring is likely to lead to growing country economy.

Europe and Romania



Romania



Transport sector profile in Romania

The transport sector in Romania is a significant consumer of final energy. In 2004 the final consumption in transport registered 4.16 Mtoe for a car stock of around 4 mil. The need for biofuels is estimated to 241 ktoe according to the EC Directive 2003/30/EC representing 5,75% biofuels use in the transport sector in 2010.

The potential for biofuels production is estimated to 1,400 ktoe with a reserve of up to 1.2 Mtoe for export to EU, representing up to 8% of the EU need estimation that amounts to up to 25 Mtoe in 2010.

Presently, the national cost of fuel, at the fuel station pump, is:

- around 0.84 Euro/litre gasoline and 0,77 Euro/litre diesel



Agricultural Sector

Romania has a total area of 237,500 sq. km. Forty-three (43%) percent of the land is arable, 28% is forest and woodland, 19% meadows and pastures, 3% permanent crops and 7% is devoted to other uses.

Romania's warm summers and cold winters define a transitional temperate-continental type of climate.

The agricultural area of Romania accounts for 25.2 % of that of all the CEE-12 and would contribute nearly 7.8 % of the Utilised

Agricultural Area of the EU-27. 47 % of population is living in rural area. Agricultural employment represents 28.3% of the national labour force (2004 census). In the period 2006-2008, the vegetal sector of the agriculture is expected to grow with a yearly rate of 3.7%.

In 2004, the contribution of the agricultural sector to the GDP was:

- agriculture - 11,7%,
- forestry - 0,24%,
- food industry - 6,0%.

In 2004, EU continues to be the main trade partner for Romania in the agri-food products sector, with a share of about 51% of the total export and 38% of import. The main products exported continue to be live animals, certain categories of vegetables and fruits, vineyards and wheat.

Oil crops

The oil crops are cultivated on 9% of the agricultural land. It is a dynamic sector with good development potential. The production is expected to increase to over 2 millions tones per year.

Also the exports increased continuously. A new increase is expected once the EU tax on oil imports (6.5 to 10%) will be eliminated.

Within the agricultural year 2004, Romania exported 70,000 tones sunflower oil, and 408,000 tones sunflower seeds.

The average prices for export were 523 Euro/tonne oil and 207 Euro/tonne seeds. Main export direction is EU (59%).

Sun flower & soybean cultivation areas

In 2005 and 2006 the cultivated areas are/were the followings:

year	soybean	sunflower	rape seeds
2006	180,668 ha	1,054,900 ha	181,524 ha
2005	143,949 ha	979,236 ha	88,904 ha

Biofuels production potential in Romania

Today in Romania, practically there is no production for biofuel purposes, except a rather modest quantity of exported rape.

However, the potential for a biofuel raw material production is high, and may come from reconverting available land areas for production.

The different agricultural land used for production of raw materials for oil, sugar and starch crops, as for other purposes than biofuel production, are relevant as it shows the efficiency, capability and experience to manage this kind of crops for further biofuel raw material production.

Rape production. As mentioned above, the large majority (90%) of rape seeds production is exported, while the remaining rape and rape oil production is used in Romania for other purposes than biofuel (textiles and chemistry). USDA FAS informs that Romania exported 85,000 tones rape in EU (Germany, Denmark and Sweden) in 2001/2002, most probably it is processed for biofuel production.

The rape cultivated area have an increasing trend. Currently, over 100,000 tones of rape seeds is exported for biofuels production.

One of the most important sources for land and production availability will come from the increase in the production efficiency.

Currently, cereals use nearly 37% of the utilized agricultural area of 14.8 million ha, from which the area used for maize is the largest with 56% in 2005, followed by wheat with 35.5%. The next most important crop by area utilized is sunflower, with about 950,000ha.

Arable production intensity is likely to go up, leading to higher yields per ha considering the increased use of fertilizers and pesticides.

The productivity increase may be about 3% per year in the response to a more stable agro-economic environment, and to the gradual introduction of modern technology and machinery.

The efficiency of production is much lower than in the EU countries. As example, for cereal yields the EU-15 reference is 4.77 t/ha, while in Romania the average is 3 t/ha. Regarding the oil, sugar and starch crops, the efficiency is even 50 % lower than in EU

Considering that the production level is kept at the 1998-2002 level, the improvement of productivity means that less land is needed for the same production and an important land area will become available, including for biofuel production purposes.

A general estimation made by the Research Institute for Soil Science and Agrochemistry shows that from the total agricultural land resources - 14.8 mill. ha, ca. 3.7 mill. ha are arable land of good and very good quality.

If intensively cropped, this area could be the basis (ca 0.17 ha per capita) for ensuring the food security of the country population and to allow conversion of the remaining area of arable land (ca. 5.6 mill. ha) to other uses.

These other uses regards mainly grassland or forestland (on those strongly degraded land areas, one estimates that at least 1.5 mill. ha of agricultural land to be afforested/reafforested), well remaining large available cultivation areas for biofuel raw resources crops.

Taking into account the most optimistic estimation, Romania have a potential for a production in 2010 of up to 2 millions to of bioethanol and up to 400,000 to of biodiesel, goals to be supported by the implementation of the IEE **BIODIESEL CHAINS** project too.