POLISH BIOFUEL CHAIN AS A KEY EXAMPLE OF THE BIOECONOMY BASED ON AGRICULTURE

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Our understanding of biofuels...
Wide diversity of agricultural feedstock, multiplicity of the products
Rapeseed as a basic feedstock for Polish crushing industry

- high degree of concentration
- modern technical infrastructure

- food [40%]
- biofuels [60%]
- but also feed!
Rapeseed processing and rapeseed oil production by PSPO Member Companies (thous. tonnes)

source: PSPO
Development of rapeseed production in Poland [tonnes]

source: IERGŻ
Biofuels as a substantial part of green economy

Wastes and residues as alternative feedstock

Green energy in processing

Source: „Advantages Of Biomass“, the-tech-addict.com
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Production of biodiesel (FAME) in Poland (t):

Source: Energy Regulatory Office
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Rapeseed oil use as biodiesel feedstock (t)

Source: Agency of Agricultural Markets
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Currently cultivated varieties of rapeseed in Poland are known as double improved due to the removal of erucic acid.

The oil made from such a rapeseed is fundamentally different in terms of fatty acid composition than traditional varieties grown in the past.

As a result, rapeseed oil is now a universal, high suitability for food, and is suitable for processing in different technologies.
Unique fatty acid profile, rich in oleic acid and low in saturated fats, makes it particularly beneficial for the prevention of heart disease.

It contains significant amounts of omega-6 and omega-3 fatty acids, also shown to have wide health benefits, in the desired ratio of 2:1.

Comprehensive ingredient:

- salad oil
- cooking
- margarines
- frying
On June16 the report “Reconciling food security and bioenergy: priorities for action”, produced by the International Food Policy Research Institute (IFPRI) together with the World Bank, the Delft University, the Centre for Environmental Policy of the Imperial College London, amongst others concludes that concerns over food supply insecurity, as a result of cultivation of biofuels feedstock, are largely misplaced.

It says “...well designed biofuels usage programmes can simultaneously improve food security in countries with populations at risk of under nourishment, and in more developed economies.”

This new report concludes that food and bioenergy do not need to compete for land, and recognizes the positive effects of biofuels use in providing jobs and resulting economic growth. The report states that properly regulated biofuels production can lead to heightened energy security, not just in transport which in itself can provide wider access to domestic markets, boosting jobs and services, but also in improving food processing and storage.
Biofuels as a substantial part of green economy

Feed vs fuel ratio in biofuel production

- Biodiesel production
- Bioethanol production

Source: KIB
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Source: KIB, PSPO, ARR
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Production of bioethanol in Poland (m$^3$):

Source: Energy Regulatory Office
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Structure of agricultural alcohol use in Poland (2013)

- Food
- Beverages
- Industry
- Fuel
- Others

Source: Ministry of Agriculture and Rural Development
Conclusions

• Biofuel production is important driver for Polish rural development;

• Biofuel plant as a bright example of bioeconomy based on agriculture;

• Changes in biofuel policy will influence strongly on other sectors (food, feed, chemistry);

• Many challenges related to environmental, social and economic issues (ILUC directive, free trade agreements, quality requirements, legal barriers)

• The need of understanding as a chain from farm to consumer offering different types of the products, not only renewable energy

Thank you
for your attention!