NATIONAL AGRICULTURAL AND FOOD CENTRE

“Innovation - adding value to food products”

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SCAR SWG AKIS
27th and 28th of March
Bratislava

Adding value to food products via innovation

The aim is to identify, develop and demonstrate the potential to create new products from fruits, vegetables, cereals and nut crops, utilize by-products or lower quality raw inputs in order to support domestic SMEs.

New products

Added value components

- flavours
- colours
- functional food
- nutraceuticals
- ingredients e.g. plant extracts

General requirements on food innovation

The strategy to achieve value adding of agriculture products is through:

- Innovative food processing / technology,
- Development of innovated food products,
- Better food safety and quality management,
- Why innovation?
- To support domestic food production

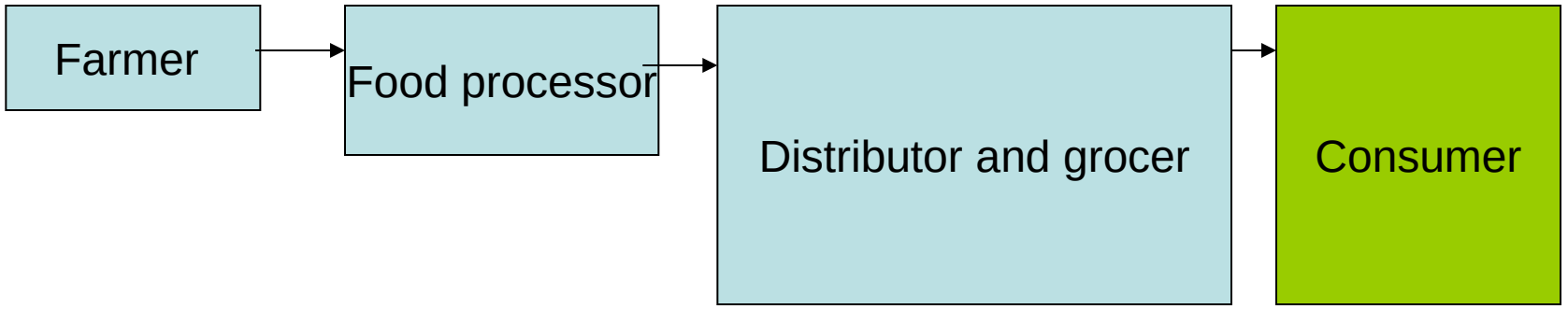
Innovative drive

- Demand for authentic, high quality food products with correctly declared composition
- Analytical methods necessary for (quantitative) determination of expensive/high-value components
- Fighting fraud / supporting producers of high-quality products

Way of food to the consumer

Profit distribution

≥10 : ≥20 : cca80



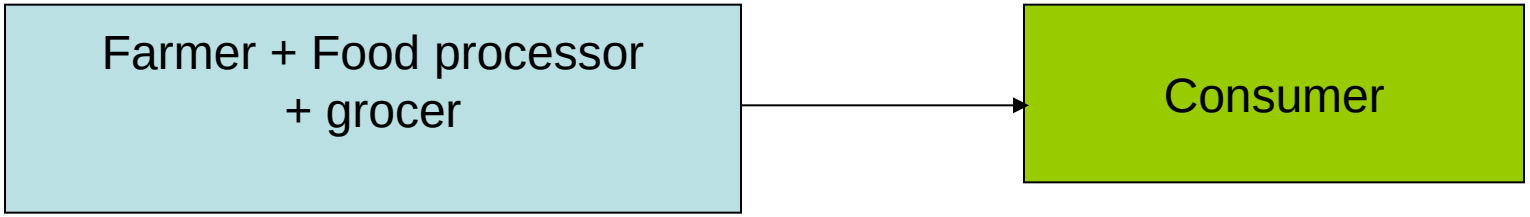
Alternatives

a/ direct processing, production of specialties

30 : 70

b/ direct processing and direct selling

100



Case studies

Production of hydrolyzate Spelt flour

Complex processing of elderberry fruit, beetroot, apples, grapes...

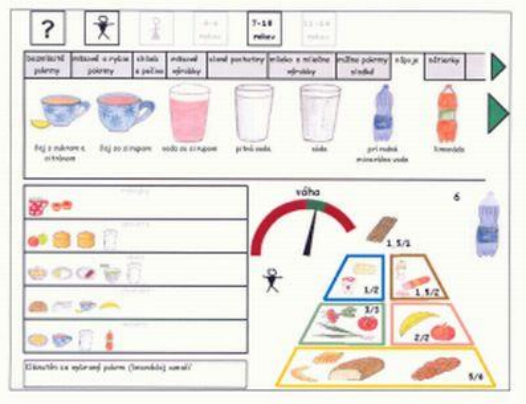
Membrane juice thickening

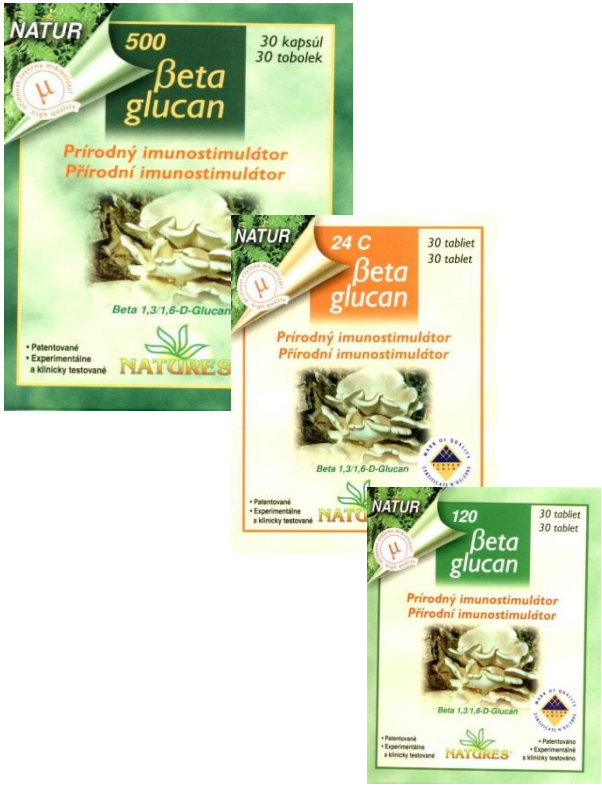
Some results achieved for SME

- Juices without additives
- Juice/ plant extract concentrates
- Bio soft drinks
- Cereal drinks
- Natural dyes,
- Antioxidants,
- Imunomodulators
- Functional flours

Pilot plants – Biocentre Modra & Process implementation units Lehnice

Inovative results achieved





Development of health-promoting cereal based products

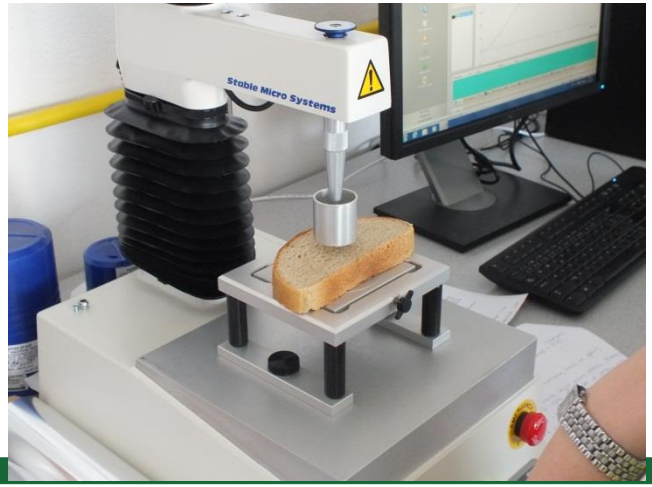
- **Bread with oat flour fermented by *Lactobacillus plantarum***
- **Nutritionally balanced muffins made from flours of various origin than fermented by lactic acid bacteria**
- **Spelt cakes enriched with sea-buckthorn fruits**

Wheat bread enriched with **oat flour fermented by *Lactobacillus plantarum***

Nutritional characteristics	
Proteins (%)	13.3
Fat (%)	2.3
Available carbohydrates (%)	33.2
Dietary fibre (%)	5.4
Total β-glucans (%)	3.1
Ash (%)	3.0
Moisture (%)	43.0

Qualitative characteristics	
Volume (cm^3)	1430
Weight (g)	600
Height (cm)	6.8
aw	0.986
Firmness (g)	571

Wheat oat bread (70:30)
+ 30 % replacement of unfermented with fermented oat flour)



Nutritionally balanced cakes made from flours fermented by lactic acid bacteria

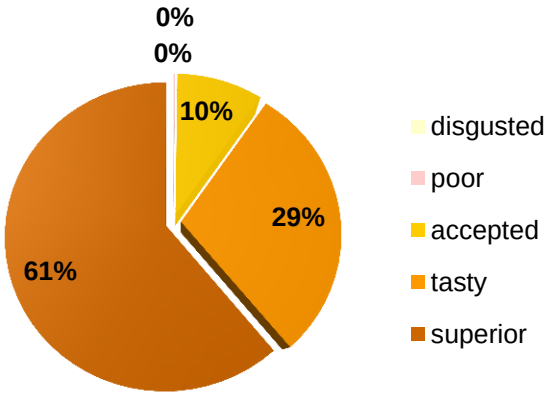
Nutritional, textural, sensorial characteristics

Rye muffin	Wheat muffin	Gluten-free muffin	**Oat muffin**	**Buckwheat muffin**	Spelt muffin
					
12.6 points	12.9 points	13.2 points	13.4 points	14.2 points	14.9 points
			High in **β-glucan**	High in **rutin**	

Score of sensorial analysis (aroma and taste)

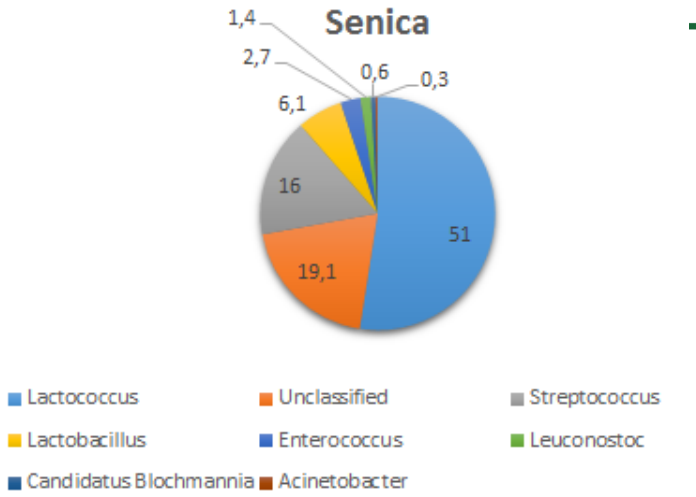
Spelt cakes enriched with sea-buckthorn fruits

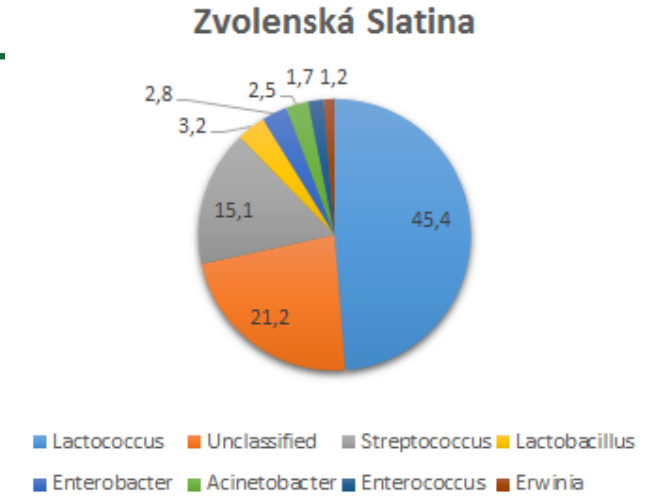
High in L-ascorbic acid and rutin

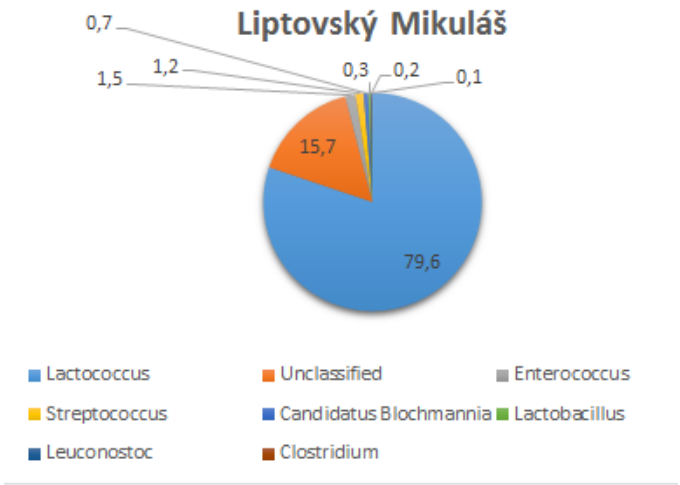


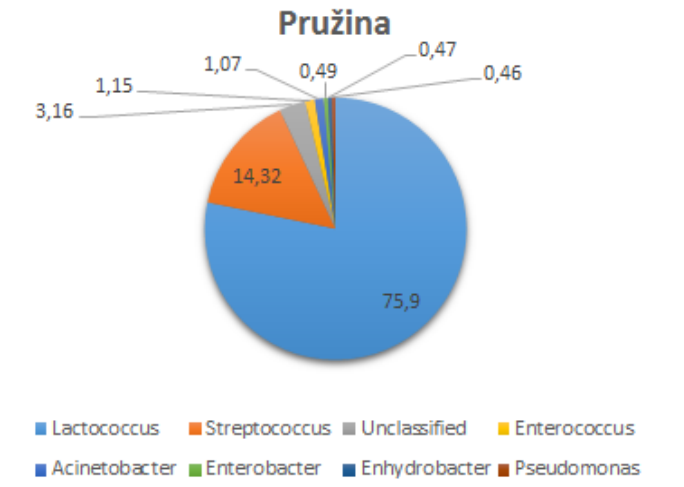
Consumer acceptance

METAGENOMIC ANALYSIS of BRYNDZA CHEESE









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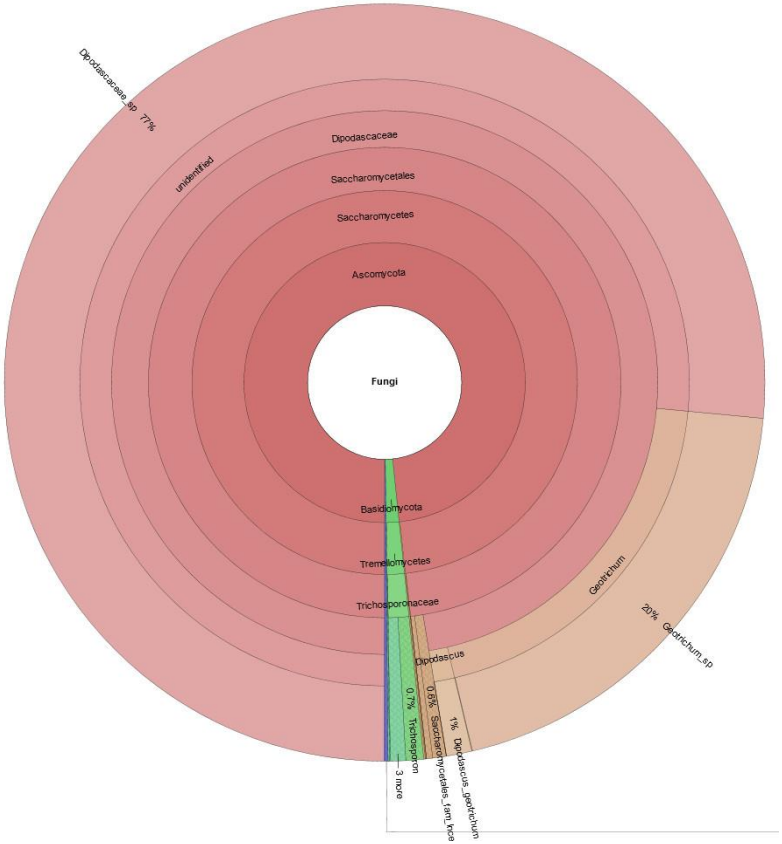
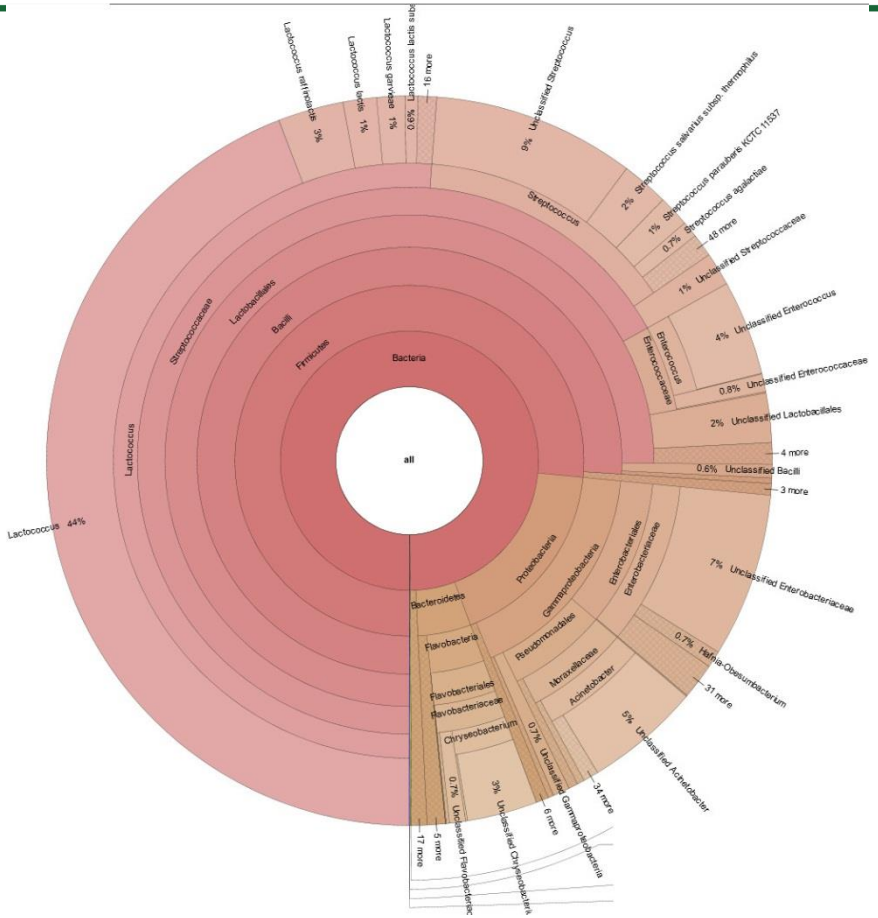
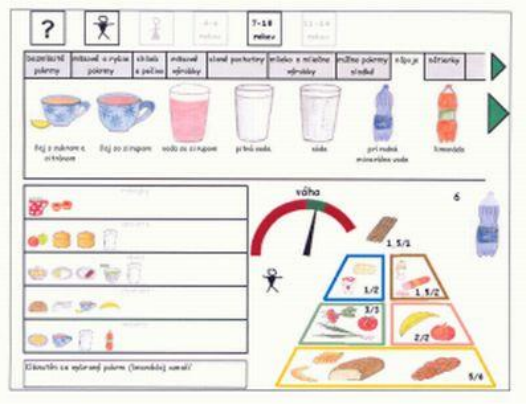
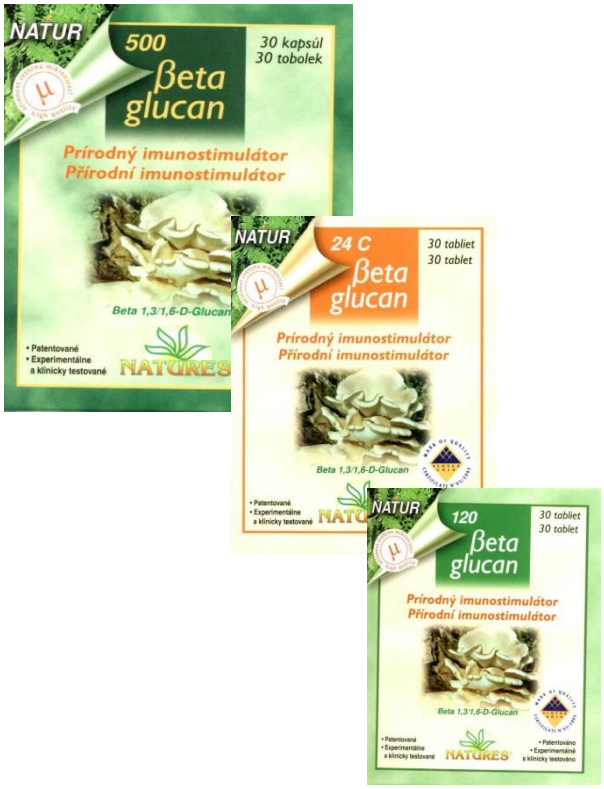




Inovative results achieved





NÁRODNÉ POĽNOHOSPODÁRSKE A POTRAVINÁRSKE CENTRUM

NÁRODNÉ LESNÍCKE CENTRUM NATIONAL FOREST CENTRE NLC

NATIONAL PROJECT
Economically efficient and environmentally acceptable Agriculture

SCAR SWG AKIS
27th and 28th of March
Bratislava

The strategic objectives of the project

- Create a functional system designed to support real transfer of scientific results into practice
- To increase competitiveness and innovative potential of Slovak farmers, foresters, businesses in food production and processing of renewable resources of agricultural and forest production
- To improve the economy of land management, increasing the degree of processing and thus value-added products
- To increase income and to improve the quality of life in rural areas

BACKGOUND

Small and medium-sized enterprises, farmers and companies engaged in agricultural primary production have NO capacity for development and innovation

primary raw materials or processed it to obsolete equipment and produce low value products

Farming on the edge of profitability or loss of the profitability

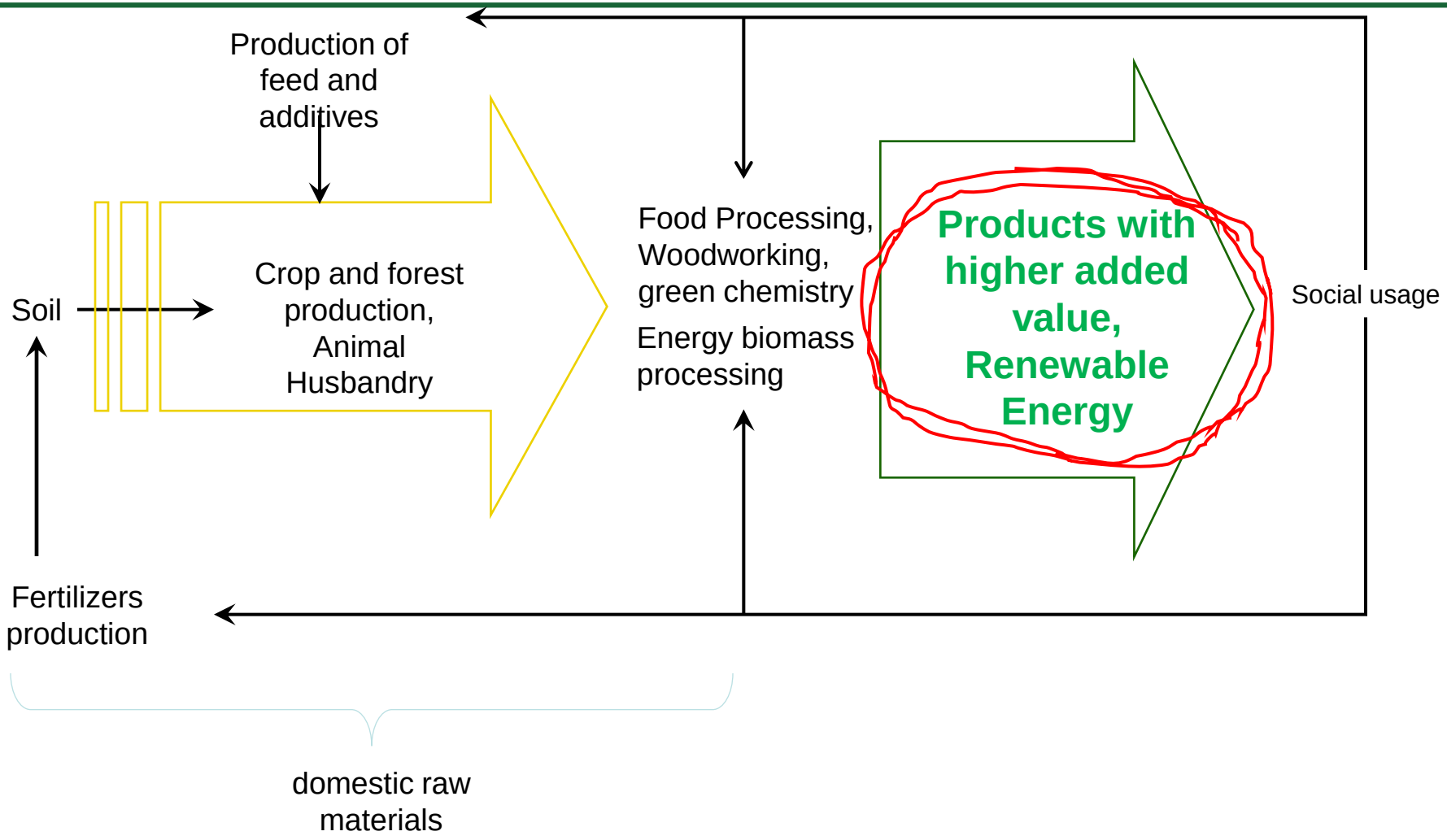
Comprehensive system to promote innovation in the bio-economy SR will be built as an extension of the existing structure NPPC and NLC at **three** levels

1. Special laboratories infrastructure improved while build on existing complementary one

2. Pilot plant(s) for verification, cultivation and breeding experiments and demonstration experiments

3. Comprehensive information system and control system

THE BASIC SCHEME of the STRUCTURE and PROJECT INTEND



GOALS TO BE ACHIEVED

Change of the structure of applied research

- The highest economic potential
- The highest, sustainable production of surplus value.

Thank you for your attention

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