



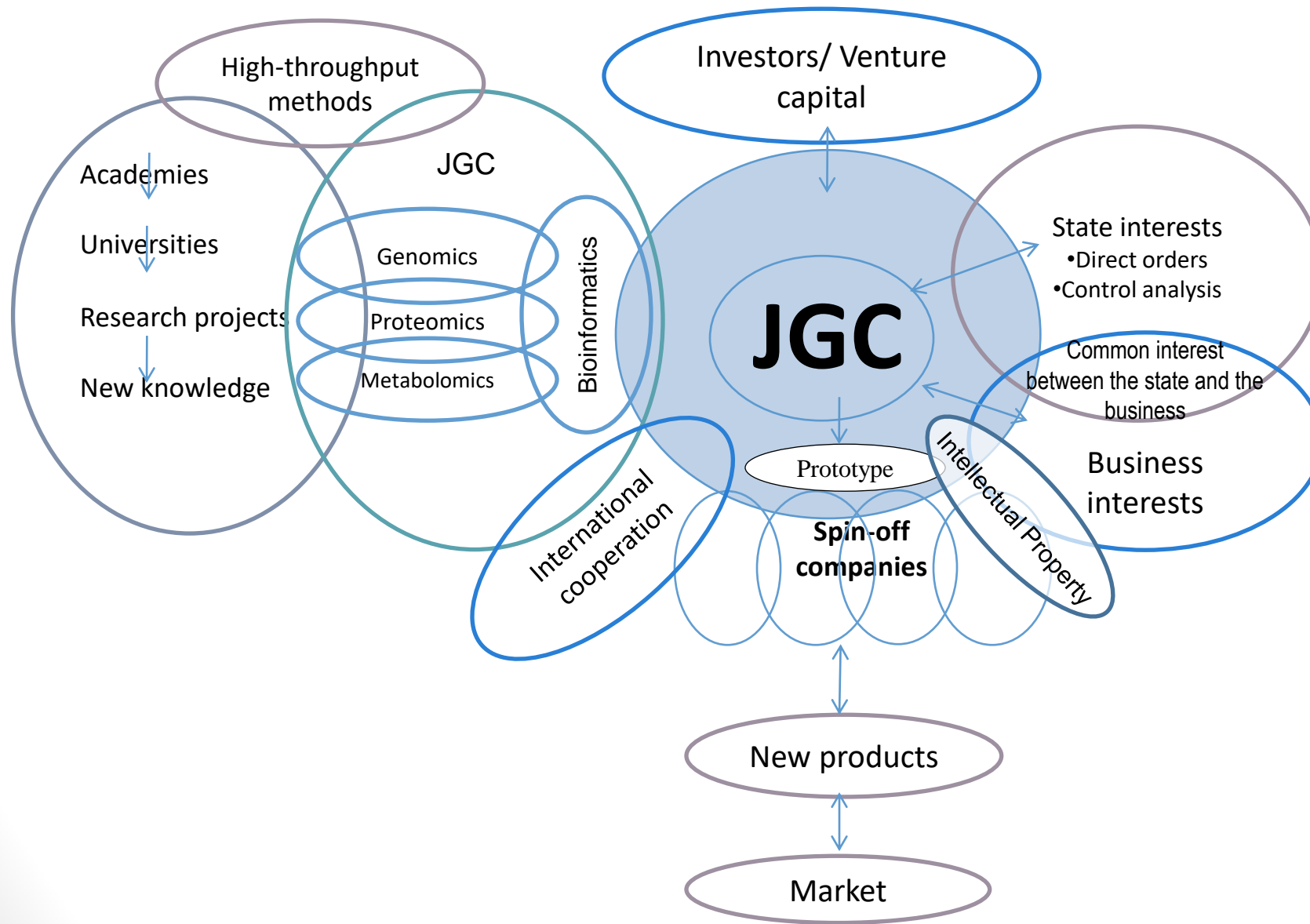
Food for Health

Goritsa Rakleova, Ivelin Panchev, Atanas Atanasov

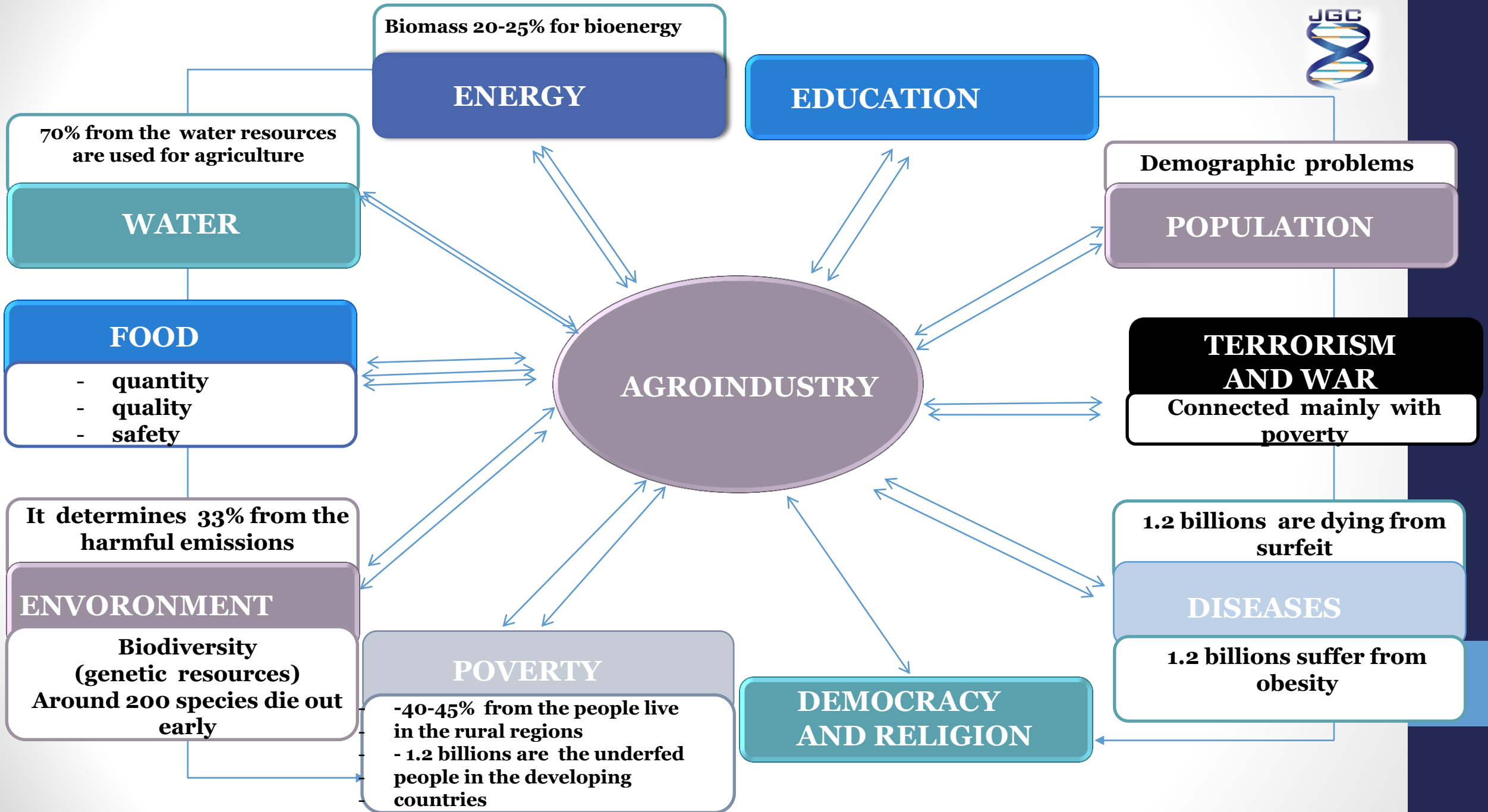
10 YEARS LEADER IN BULGARIA

12/10/2017 Pravets

Joint Genomic Centre



THE TEN BIGGEST PROBLEMS FOR THE HUMANITY IN THE NEXT 50 YEARS





In the year 2050 the Agricultural Industry will be the most important because it will determine the development of:

- - Food and Feed industry - around 100 %
- - Energy as renewable one - 15 - 20 %
- - Chemical industry (as bioplastics, lubricants etc.) - 15 - 20 %
- - **Health care (as phytoingredients) - 40 - 50 %**
- - Light processing industry - 50 - 60 %
- - Tourism - around 70%

By all these factors the agroindustry will play a key role determining the **Quality of Life !!!**



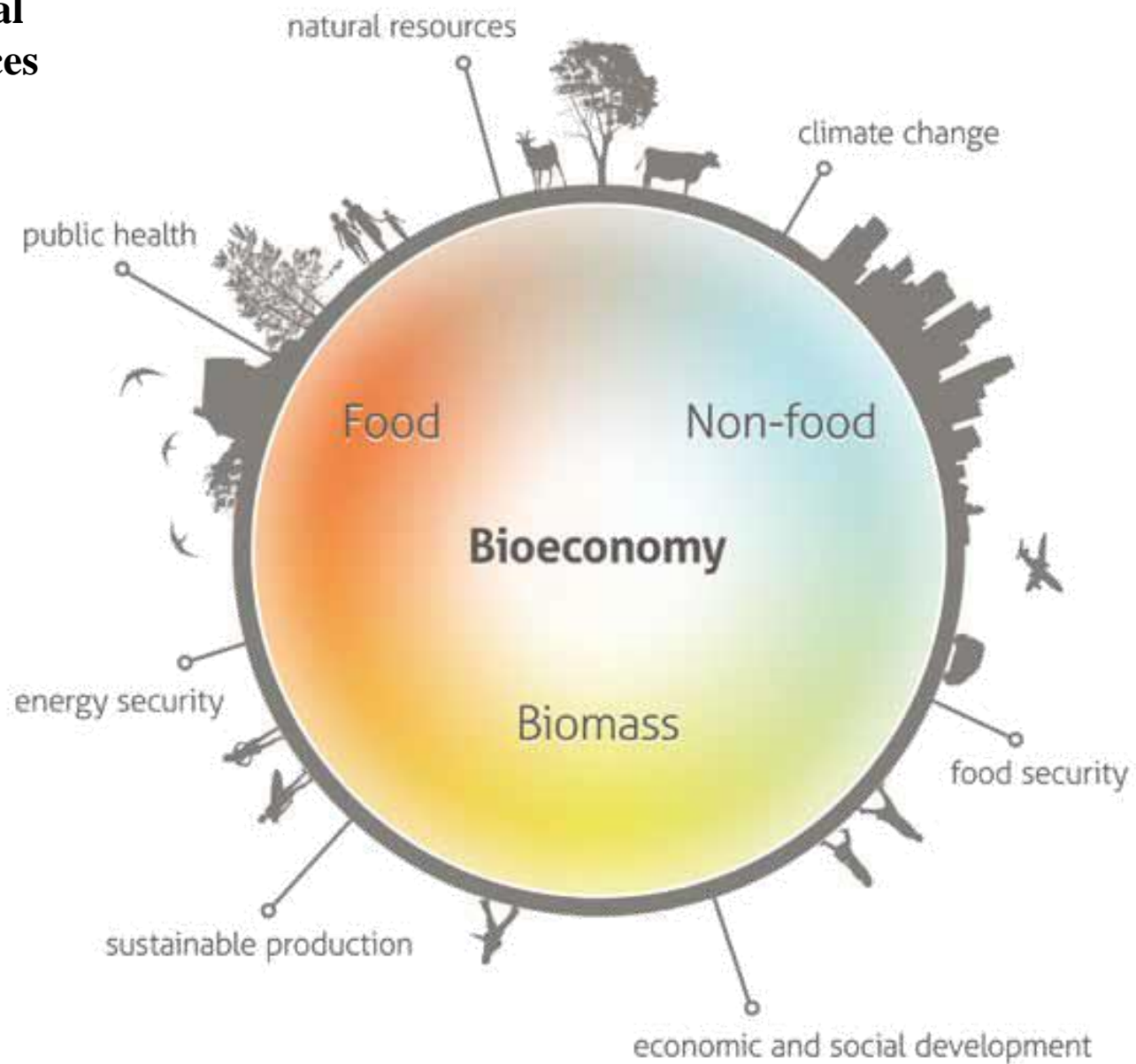


THE CONTEXT - LIMITATIONS

➤ In 2050 :

- Three times **less** arable land, water and labor
- **Loss** of biodiversity: genetic, species and ecosystem
- **Increasing** levels of **pollution** – ozone and acid deposition
- A **changing climate** – temperature and precipitation

Natural resources



The European Bioeconomy 2014-2020

Need to prevent the obesity?



Obesity

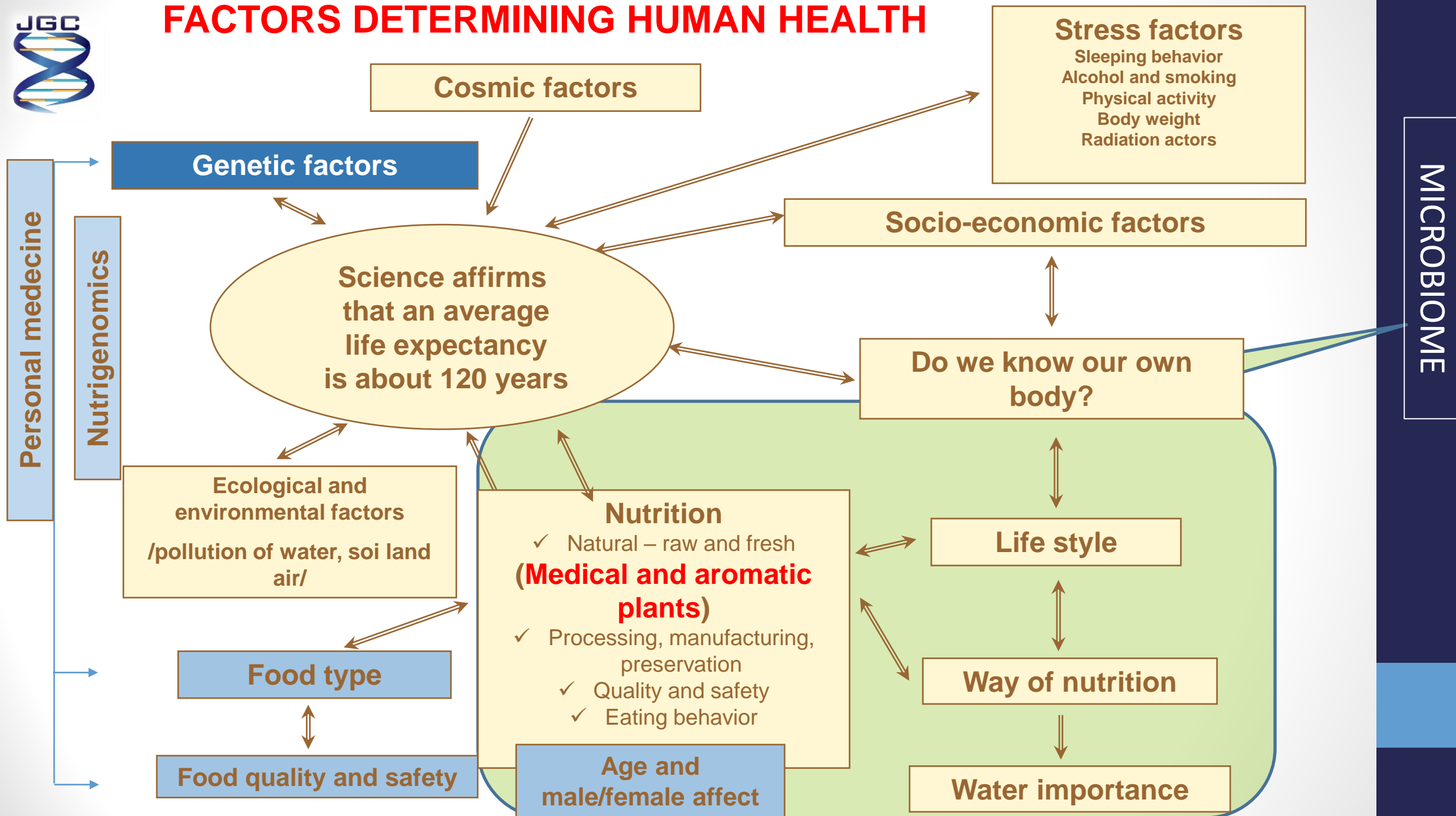


- From about 6,5 billions human population, around **1,2 billion suffer from obesity**. In the same time huge amount of food is being dumped every day (in USA **around 50% of the harvest** has not been consumed).

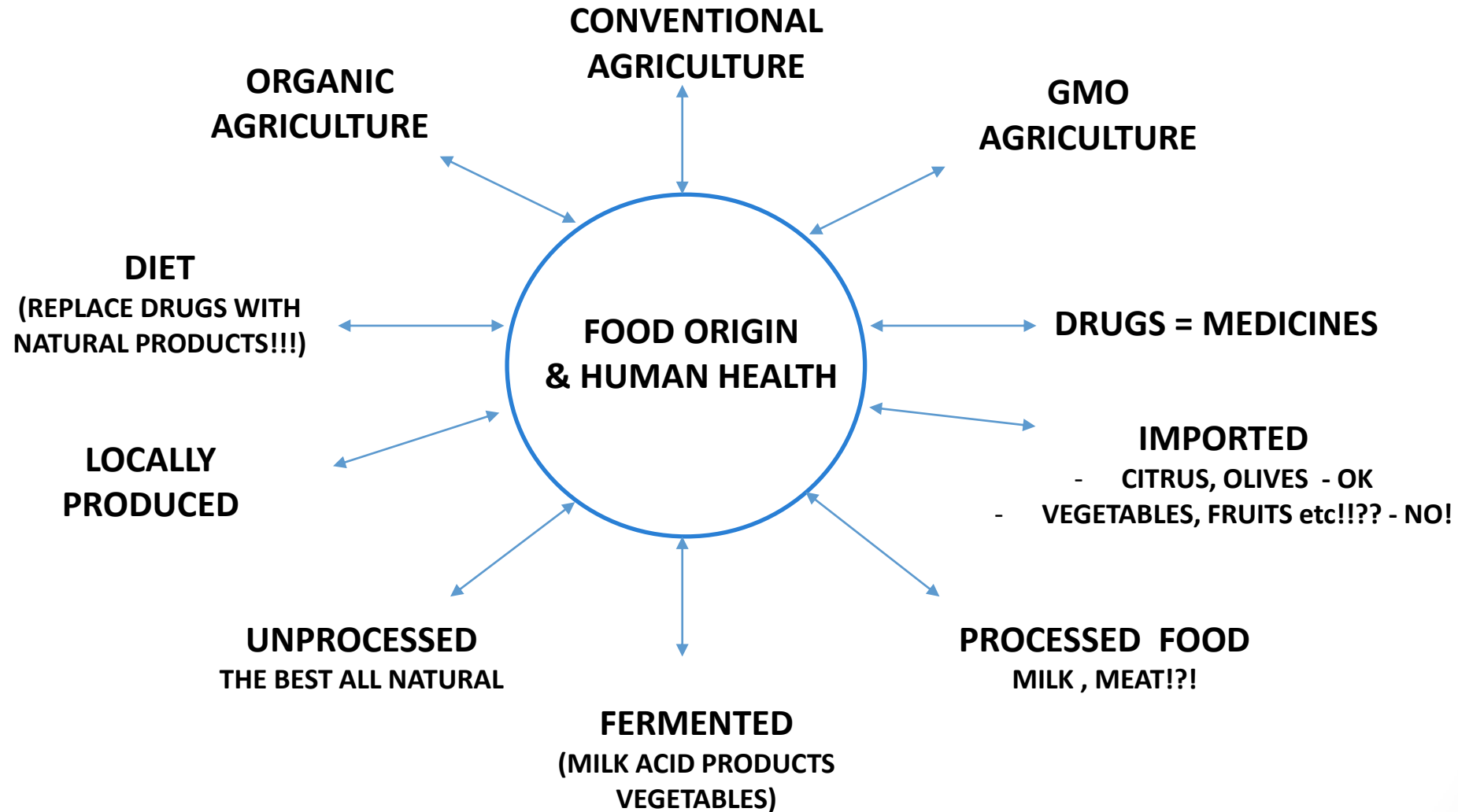




FACTORS DETERMINING HUMAN HEALTH



DISEASE PREVENTION OR CURING BY DRUGS



Future expectations ...

- By **2050** the number of people over the **age 80** will **triple** globally. These **demographics** would come of great costs to individuals and economics if the number of not healthy people is bigger.

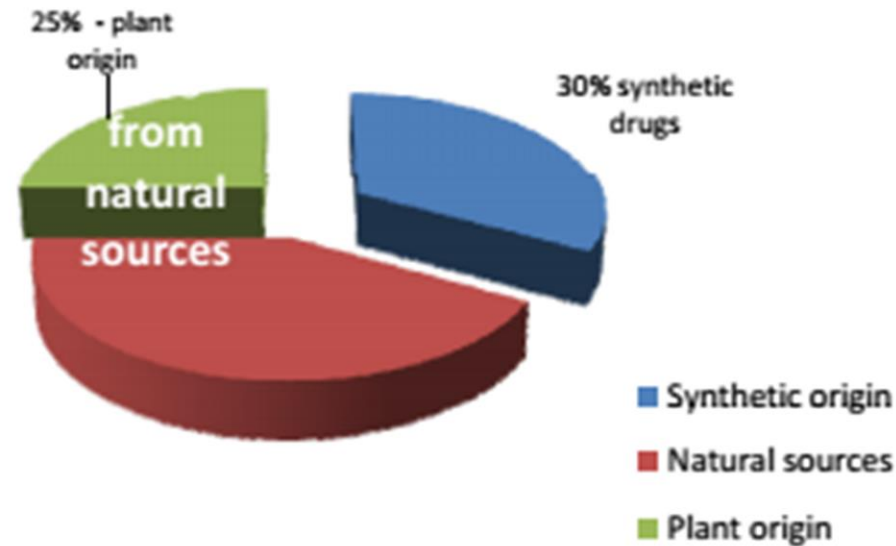


Genetics factors



- The human genome has been sequenced in 2001
- 20% of the human's genes have been already patented
- In the next 10 years it will become possible each person to sequence his own genome for 100 lv., understanding in this way its strong and weak sides. What does it mean?
- Personal nutrition → nutrigenomics
- Personal prevention → diet /Balkan diet/
- Personal medicine → clinical nutrition
- Pharmacogenomics
- Toxicogenomics

Synthetic origin vs. Natural sources Plant origin



It has been published that since 1981 to 2010 two thirds of the active agents in the new chemical entities originate from natural sources (Newman, & Cragg, 2012).



Natural products seems already being more preferable

(когато са проучени, стандартизирани и регулирани)



Biodiversity

Genetic resources

- ✓ The crop germplasm is available worldwide, with about 6 million accessions held in over 1400 gene banks. Breeders have studied less than 1% of these collections for crop improvement.



Biodiversity in Europe is threatened !



- ✓ In the next 40 years around 50% of the living biological species in Europe will be near extinction.
- ✓ Preserving the biodiversity is extremely important not only from ecological point of view but also for its huge impact on the economics.
- ✓ The world economics loses every year more than 50 billions euro due to species dying out ... It is expected these losses to reach 14 trillions in 2050.
- ✓ It is time to safe our nature!



Plant resources



- ✓ Vital to our agricultural systems is the choice of servant species to sustain us.

The options are prodigious:

- of an estimated **350,000** plants species in the world, about 80,000 are edible by humans
- at present only about 150 species are actively cultivated, directly for human food or as feed for animals:
 - of these 30 produce 95% of human calories and proteins
- Currently about half of our food is derived only from five plant species: *rice, maize, wheat, potato* and soybean
- Our survival as species is now based on these plant species;
- Number of plant species are used for **phytopharmaceuticals** (**natural products**), fibre, energy, construction, manufacturing and environmental protection





Bulgarian Biodiversity

- ✓ Although Bulgaria is relatively small in area it is **one of the richest countries of living biodiversity** consisting of: 94 species of mammals, 383 birds, 36 reptiles, 16 amphibians, 207 Black Sea and freshwater fish, around 27,000 insects and other invertebrates, **between 3,500 and 3,750 higher plant species and more than 6,500 lower plants and fungi.**
- ✓ **More than:**
 - **3 000 plant species are known in Bulgaria for their medicinal properties.**
 - Among them **400 are unique for Bulgaria.**
 - More than 12,000 tonnes of dried herbs are exported to EC and the USA.
 - **Bulgaria is the fourth exporter of herbs in the world.**
 - **350,000 people** are engaged with herb gathering.
- ✓ There are several institutes in Bulgaria which are involved in the preservation of the Bulgarian plant biodiversity the most important of which is the **Institute of Roses, Essential and Medical Plants, Kazanlak.**



Bulgaria – the triangle of success

OUR PETROL!

- ❖ **Agriculture** - suitable for both traditional and organic. More than 80 important crops from a food perspective can be cultivated!
- ❖ **Mineral waters** - 15 600 springs, of which 660 SPA – prevention and balneotherapy for virtually any disease!
- ❖ **Tourism**: sea , mountainous, eco, agro, cultural and historical

AT THE END OF THE CENTURY THE WATER
WILL BE MORE EXPENSIVE THAN PETROL !

Agriculture - a unique natural resource for Bulgaria



- Compared to the rest of the world, Bulgaria has **the most favorable combination of soil and climate conditions.**
- **Six facts best illustrate this phenomenon:**
 1. **40% of the soils are in the top ranking compared to 12.5% for the world;**
 2. **Excellent natural features: soil-climatic features and water sources;**
 3. **Geographic location-** Superb combination of valleys, mountains, rivers and sea;
 4. It is distinguished by one of the **richest biodiversity in the world** - an alternative to the development of any kind of farming. Bulgaria is the fourth country to export herbs in the world and first in Europe - 12 thousand tons per year.
 5. **Strong traditions :**
 - Education and scientific service
 - Work force
 - Price levels
 6. **Opportunities for development of highly organic agriculture**

**NATURE
MOUNTAINS
VALLEYS
RIVERS
SEA**



**ADVANTAGES
FOR BULGARIA**



**ALL TYPES OF
TOURISM**

**RICHEST BIODIVERSITY AND
MINERAL SPRINGS WATER**



**ECOLOGICALLY THE MOST CLEAN
AND GREEN COUNTRY**



UTILITY MODEL of “STOLETNIK”



“Stoletnik” Ingredients



“Stoletnik” is a patented dairy product, based on a traditional for Rodopa region dairy recipe. „Stoletnik“ is characteristic for its complex but balanced composition.

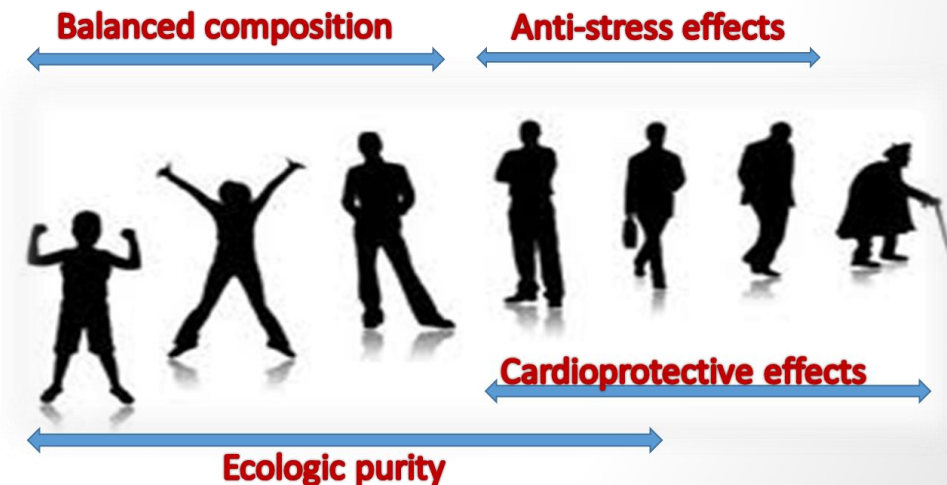
The product contains a large number of live probiotic bacteria as *Lactobacillus bulgaricus*, *Streptococcus thermophilus*, *Lactobacillus casei* and *Lactobacillus plantarum*, as well as natural ingredients with prebiotic properties.

“Stoletnik”

Stoletnik” key advantages against the competitors:

- ✓ Prophylactic and preventive effect due to the balanced composition of proteins, carbohydrates, vitamins, microelements and biologically active molecules;
- ✓ **Composed of natural ingredients with minimal processing;**
- ✓ Lack of preservatives, stabilizers, antibiotics or other unnecessary additives;
- ✓ Large number of live lactic acid bacteria;

Market positioning



“Stoletnik”

Current state:

- Protected IP rights
- In production
- Established consumer's interest



OPPORTINITIES FOR COOPERATIONS

NATUREAL RESOURCES and PRODUCTS

I. PRIMARY CROPS

- wheat, sunflower, corn, barley, rapeseed

II. SECONDARY CROPS

- fruits
- vegetables
- grape – wine & table
- essential crops

(Symbol of Bulgaria Rosa Damascena)

III. THIRD SPECIES

(Natural)

- herbs and medical plants
- honey & bee products
(honey dew Strandzha mountain)
- mashrooms
- milk acid bacteria
(yogurt, white cheese et (example Stoletnik Centenarian)

IV. MINERAL SPRING WATER

V. TOURISM

BULGARIA

No difference

UNIQUE
TASTE & AROMA

(SPECIFIC INGREDIEN VALID
ONLY FOR BULGARIA)

UNIQUE QUALITY +
SPECIFIC TASTE &
AROMA

ANY – the richest in
Europe

ANY – possible

REST OF 26th EC COUNTRIES

OPEN FOR ANY PARTNERSHIP

OPEN FOR ANY PARTNERSHIP

Niche market

Enjoy the natural products and never forget that



No one is in charge of your happiness except you!!

And **smile** - you don't own all the problems in the world!!



Relax



Bulgaria – a country full of rich, healthy
and happy people ?!



THANK YOU FOR YOUR
ATTENTION !