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Food System Sustainability in the European political framework

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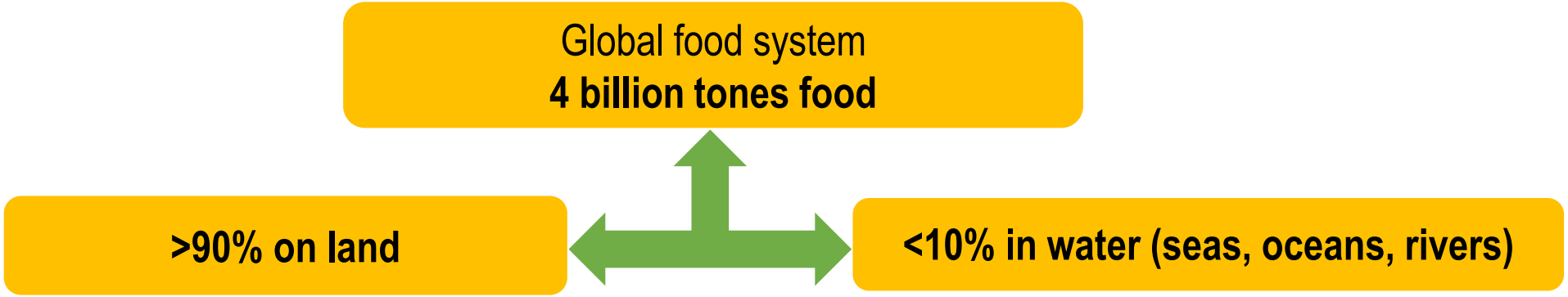
Food systems provide essential food products and services for humanity, but at the same time exert pressure on ecosystems and the environment.



Some studies: Total food production would need to increase by at least 60% to feed a world of over 9 billion people by 2050. Other studies show that the solution lies not in increasing production, but in: improving access and distribution of food, in changing diet and in reducing food waste.

Source: European Research & Innovation for Food & Nutrition Security, Directorate-General for Research and Innovation, Bioeconomy Directorate, 2016)

Changing context food production 21e century

Agriculture accounts for 49% of the Earth's ice-free land (4).

Agriculture accounts for 70% of the global use of fresh water (4).

Food systems, including production and consumption, represent about 30% of energy consumption (5).

In the European Union (EU), agriculture represents about 50% of the community territory (6).

- Climate change mitigation (carbon sequestration, fossil energy use, nitrous gas, methane)
- Climate change adaption (drought, flooding, salinization, ..)
- Soil degradation
- Growth world population
- Depletion of resources (phosphorus, fossil energy, ..)
- Strongly declining biodiversity
- Emissions and pollution from agriculture

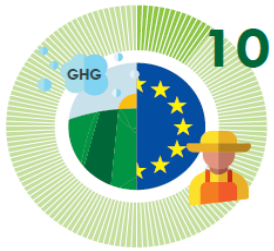
Call for drastic systeemchanges!

33% of soils are moderately to highly degraded due to erosion, nutrient depletion, acidification, salinization, compaction and chemical pollution

Globally, the food system as a whole represents up to 31% of total global human-induced GHG emissions (12).

Agriculture, forestry and other land use (AFOLU) activities are responsible for 23% of GHG emissions in the past decade (4).

Up to one third of world food production is lost or wasted (5), therefore increasing the amount of unnecessarily produced GHG emissions and putting additional pressure on resource use.



At the European level, agriculture accounts for about 10% of all GHG

Sustainability seen through the lens of European policies

JPI a healthy diet for a healthy life

SUSFOOD ERA NET defines sustainability as “a food system that supports food security, makes optimal use of natural and human resources, and respects biodiversity and ecosystems for present and future generations.

The food system must be acceptable in terms of: cultural, environmentally friendly and fair and, economically viable, providing the consumer with nutritionally adequate, safe, healthy and affordable food. Sustainability is defined by 3 components: social, environmental and economic sustainability.

https://susfood-db-era.net/main/

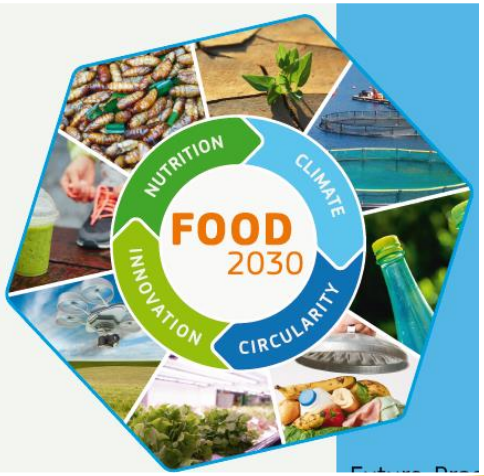
SCAR Standing Committee on Agricultural Research

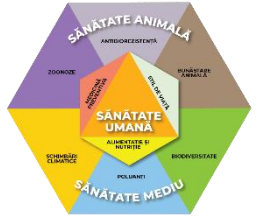
SCAR Food Systems FOOD

FACCEJPI

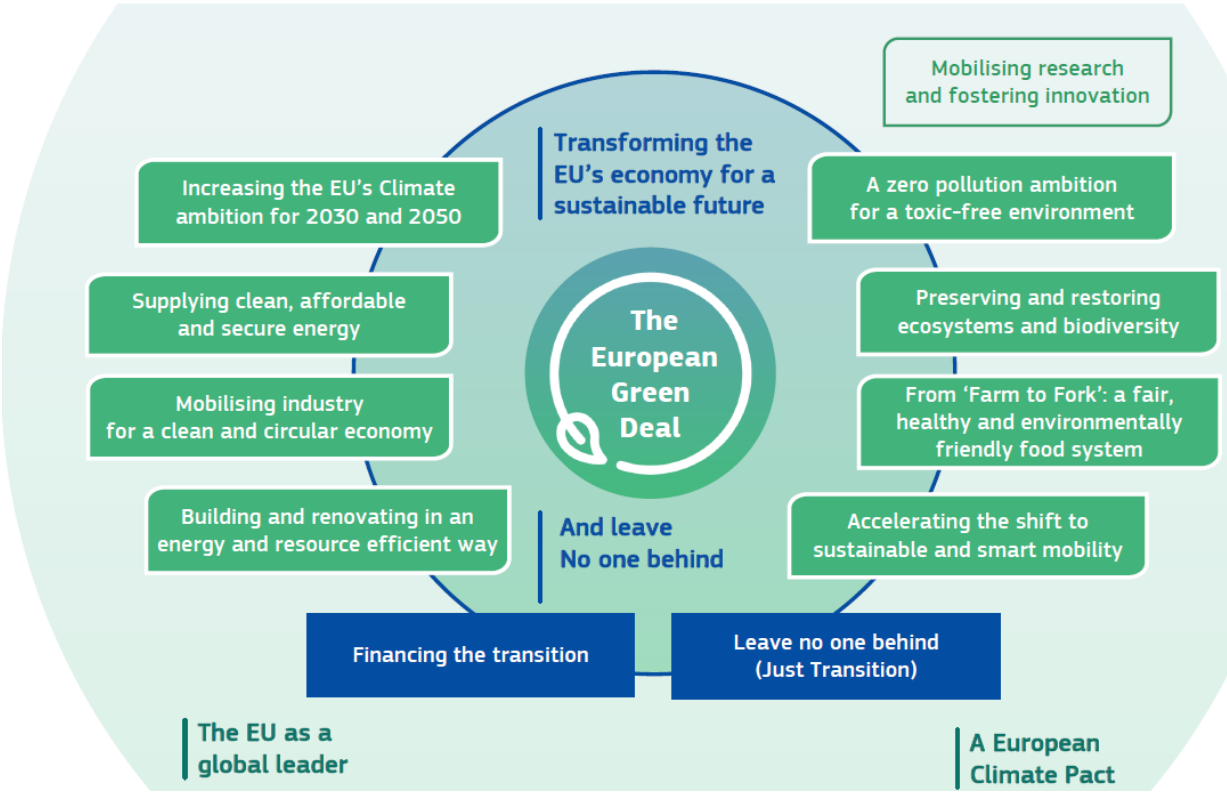
10 SUSFOOD

TOWARDS SUSTAINABLE FOOD SYSTEMS: 10 YEARS' RESEARCH FOR A BETTER FUTURE





The European Green Deal



Social sustainability

Healthier diets – reducing overeating;
Improving animal welfare;
Social rights of food chain operators.

Environmental sustainability

Climatic changes;
Environmental protection;
Protecting biodiversity;
Reducing food waste and loss;
Circular economy.

SCAR
Standing Committee on Agricultural Research

Sursa: Henk WESTHOEK (DG SANTE): Farm to Fork Strategy: implementation of the strategy, SCAR FOOD SYSTEMS SWG, 2nd Meeting, October 2nd, 2020

Economic sustainability

Adequate income for farmers;
The transition to a new food system;
New business opportunities and jobs.

FOOD 2030 is the EU policy response to recent international policy developments and is based on 4 key priorities for food and nutrition security:

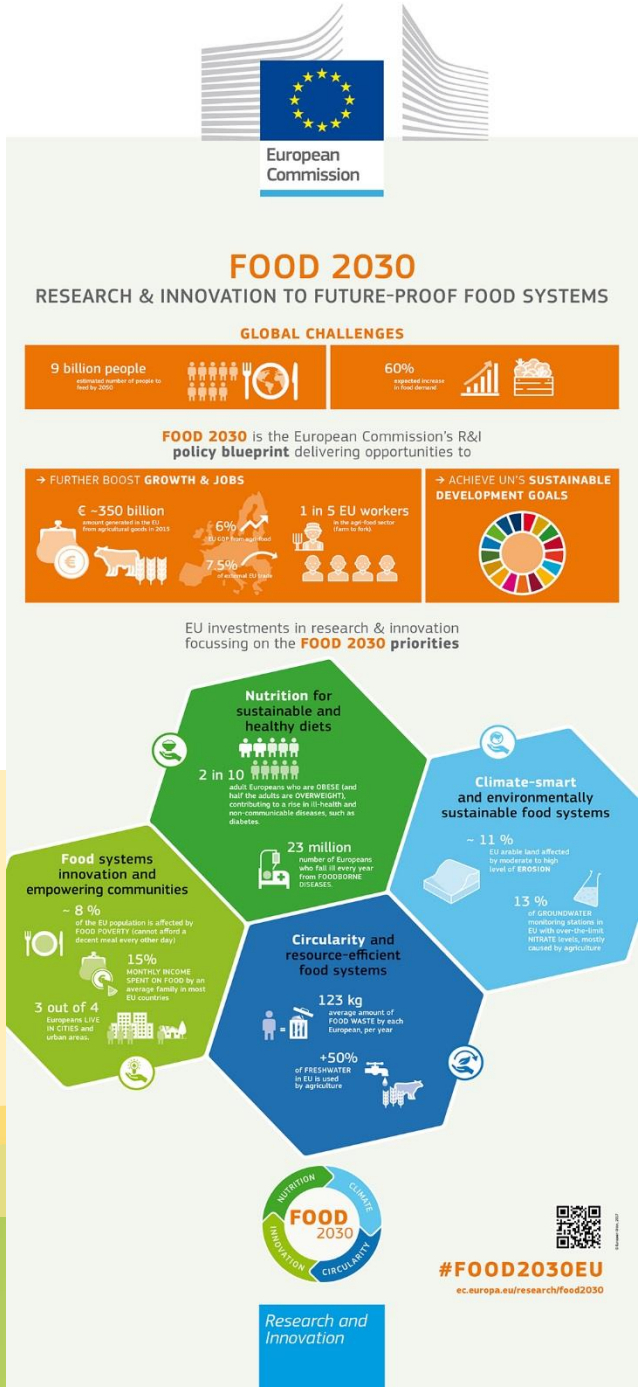
NUTRITION - for sustainable and healthy diets;

CLIMATE - intelligent and sustainable food systems for the environment;

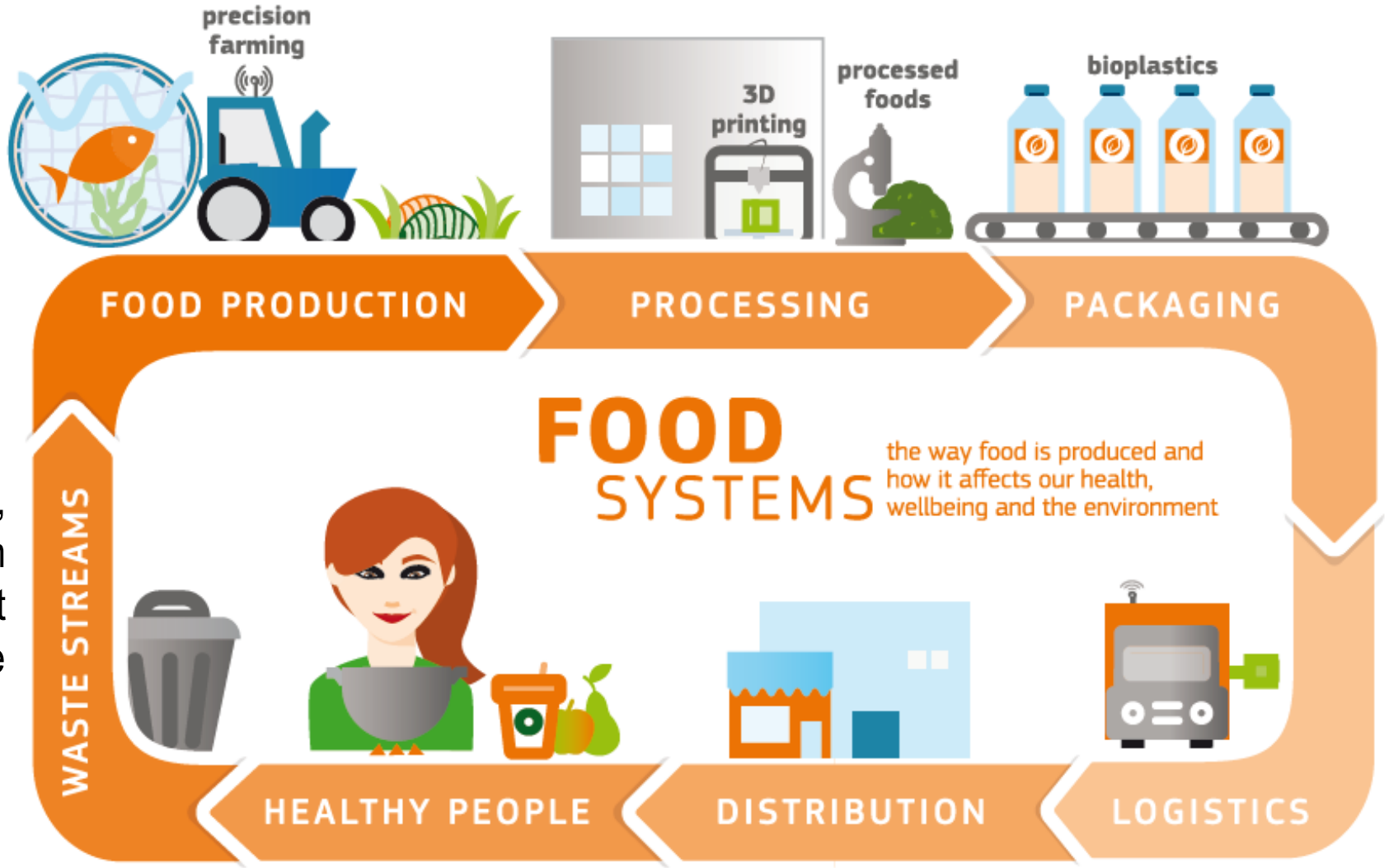
CIRCULARITY - and resource efficiency of food systems;

INNOVATION and strengthening communities.

Food system:Sustainable (lack of natural resources), **Resilient:** adaptation to climate and global changes, including extreme events and migration; **Responsible:** ethics, transparency and accountability; **Diverse:** openness to a wide range of technologies, practices, approaches, cultures and business models; **Competitive:** providing jobs and economic growth; **Inclusive:** involving all actors in the food system, including civil society, fighting poverty (economic access to food) and providing healthy food for all.



FOOD2030 supports the integrated, systemic and visionary approach from an economic, social and ecological point of view in line with the Sustainable Development Goals (SDGs).

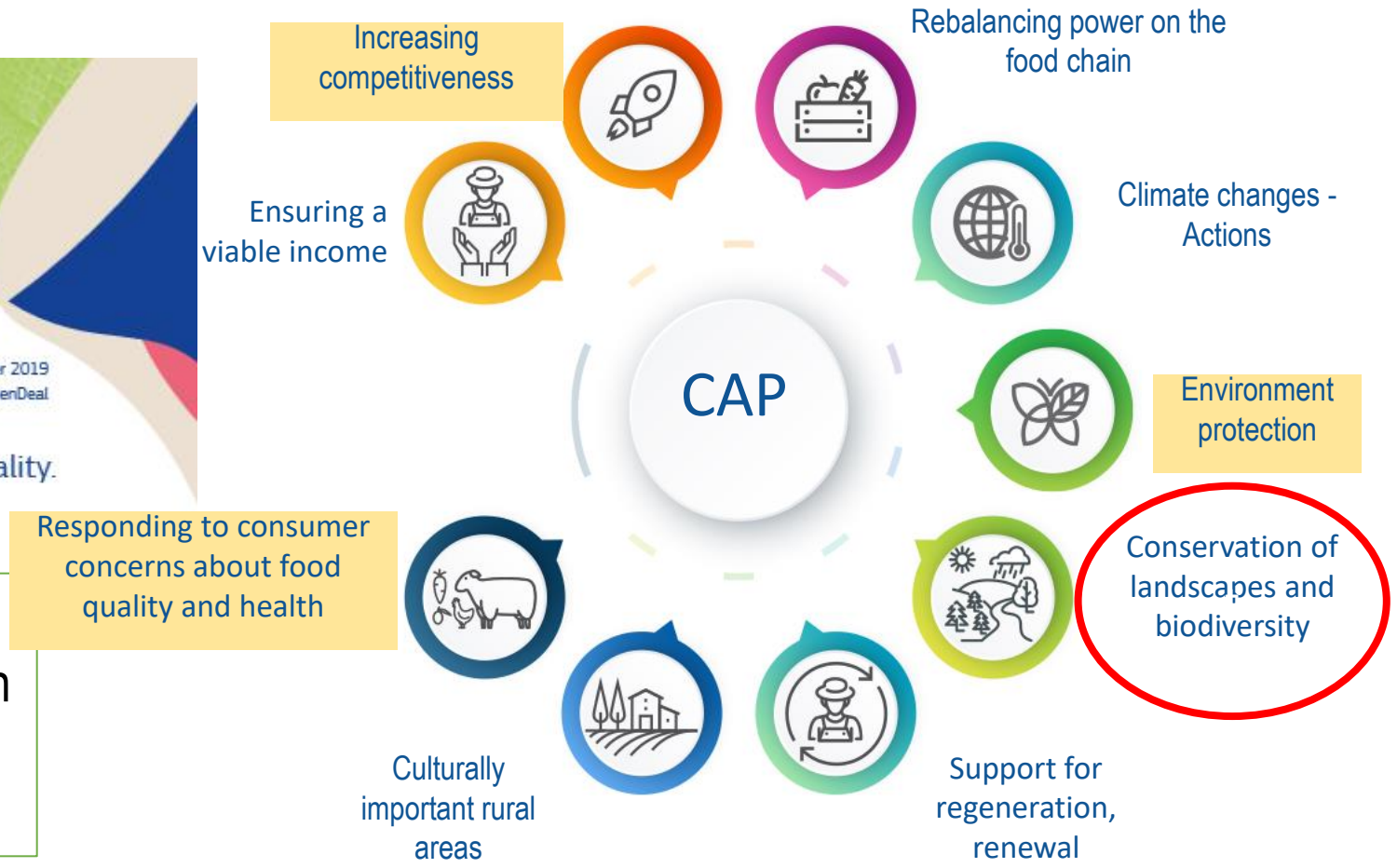


European policies based on new strategies

Farm to Fork Strategy, 2020

Objective: sustainability of the food system - in environmental, social and economic terms

Covering all stages of the food chain



Joint Programming Initiative on Agriculture, Food Security and Climate Change, FACCE-JPI: Strategic Research Agenda 2020

FACCE JPI - Theme 3. Nutritional Sensitive Production for Food Security

- An important approach uses impact pathways that link **agricultural practices to sustainable and healthy diets** (e.g., agroecology) without overcoming the planetary borders.
- The concept of agriculture sensitive to nutrition includes productivity not in terms of productions, but in terms of nutritional density, with the implication that it is possible **to feed better with less biomass**.
- Moreover, food diversity involves the diversification of production systems.
- The **One Health perspective** is also very relevant. - to understand healthy foods as a result of interconnection between humans, animals, plants, which require an interdisciplinary and transdisciplinary approach and which addresses problems such as preventing diseases transmitted through food and reducing/eliminating harmful chemical residues.

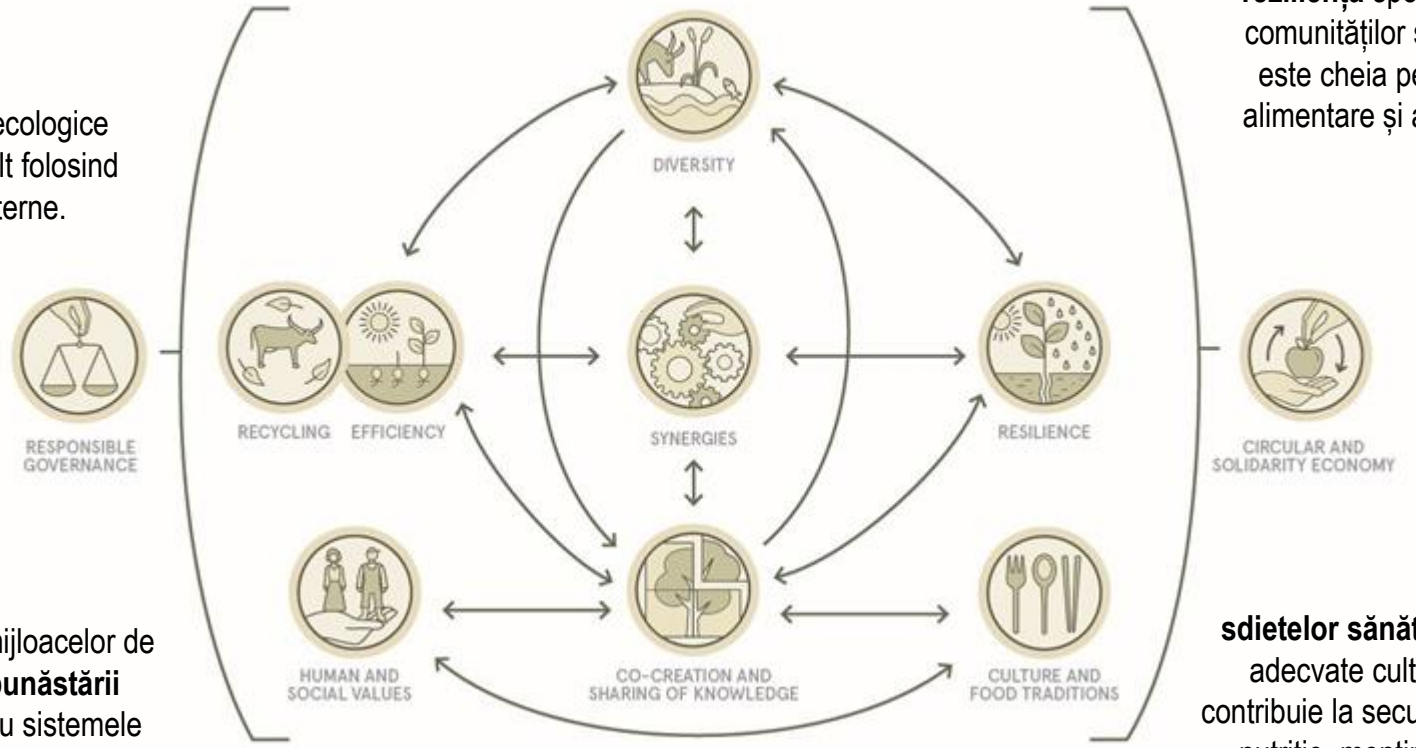
https://www.fao.org/agroecology/overview/overview10elements/en/

construirea de **sinergii** îmbunătățește funcțiile cheie ale sistemelor alimentare, susținând producția și multiplele servicii ecosistemice.

diversitatea este cheia tranzițiilor agroecologice pentru a asigura securitatea alimentară și nutriția, conservând, protejând și sporind în același timp resursele naturale.

rezilienta sporită a oamenilor, comunităților și ecosistemelor este cheia pentru sistemele alimentare și agricole durabile

eficiență: practicile agroecologice inovatoare produc mai mult folosind mai puține resurse externe.



economiile circulare și solidare care reconnectează producătorii și consumatorii oferă soluții inovatoare pentru a trăi în limitele noastre planetare, asigurând în același timp fundația socială pentru o dezvoltare incluzivă și durabilă.

alimentația și agricultura durabile necesită mecanisme de guvernare **responsabile și eficiente** la diferite scări – de la local la național la global.

protejarea și îmbunătățirea mijloacelor de trai rurale, a echității și a **bunăstării sociale** este esențială pentru sistemele alimentare și agricole durabile.

sdietelor sănătoase, diversificate și adecvate cultural - agroecologia contribuie la securitatea alimentară și la nutriție, menținând în același timp sănătatea ecosistemelor.

inovațiile agricole răspund mai bine provocărilor locale atunci când sunt **create în comun prin procese participative**.

European Partnership under Horizon Europe umbrella
Sustainable Food Systems for People, Planet & Climate

"The future health of the people of Europe and the planet is in our plate".

The way in which foods are produced on land, in freshwater and oceans, as well as in aquaculture systems, the way in which it is processed, packing, distributing, preparing and consuming must be changed to ensure **sustainability of the environment, social and economic of this system**.

The construction of sustainable food systems is essential for the transition to a "**sustainable Europe by 2030**" and essential for the fulfillment of the European Green Deal, the Farm To Fork strategy and the Food2030 ambitions on "climate and sustainability", "nutrition and health", "circularity and efficiency of resources "and" innovation and communities".

In addition, the **lack of coherence of the legislation** can distort the development of new sustainable, blue and green agrifood value chains.

Re-building trust through an approach **One Health-Safety-quality is imperative for the EU food agenda**.

Sustainable Food Systems for People, Planet & Climate
Changing how we process and provide food

"0" lost and waste: **Circularity -** new methods of recycling and processing, tools for reducing food waste, tools and safety measures; preservation methods, hygienic models and control of diseases.

Diversification to provide various diets and manage (agro-ecological) resources: innovative food from alternative protein crops, forgotten cultures, algae, fish and invertebrate species, insects and so on

The relocation and the adapted logistics schemes to the resizing of processes and alternative supply chains through biorefinery – first food, second feed, third non-food applications (pharmaceutical, cosmetics, biomaterial, bioenergy).

The mild processing of foods combined with new preservation schemes

Digitalization of processes and food supply chains - efficient use of resources, food safety and authenticity of food.

Complex modeling of food systems, authenticity, transparency - AI, blockchain technologies, etc.

Development of skills and education to increase the diversity of sustainable, healthy and safe foods in a correct and inclusive way.

Risks/benefits assessment

Knowledge and technology transfer

6. promoting dietary changes consuming smaller amounts of animal products - reducing environmental impact and health risks

5. nutritious and safer food at affordable prices **reducing pollution** and phasing out the use of harmful chemicals in the food chain

1. encouraging the **reformulation of processed foods**, including setting maximum levels for certain nutrients

4. **treatment of food waste** along the food supply chain

Food system challenges

3. reducing the **negative effects of urbanization on land use**, especially arable land

7. revising EU marketing standards for agricultural, fisheries and aquaculture products to ensure the supply of sustainable products

4. viable and fair incomes for farmers, fishers and other workers involved in the food system

2. revising EU legislation on food contact materials to improve food safety and reduce the environmental footprint of the food sector

3. strengthening coordination for the application of single market rules and **combating food fraud**

To support sustainability and regenerative agricultural practices

Bringing biodiversity to the table

Choose responsibly for each meal

Plan meals for the following week

No loss and waste

Small changes for a big and positive impact

Food production mode and food chain losses and Eating behavior and food waste.

Impact on human health and on environmental sustainability

The UN Sustainable Development Goals and the Paris Agreement on climate change.

1

- More plant-based foods and less animal-based foods is healthy, sustainable and good for both people and the planet

2

Foods from animal origin (especially those grain-fed), especially red meat, have relatively high environmental footprints per serving compared to other foods - high impact on greenhouse gas emissions, land use and loss biodiversity.

3

- The Planetary Health Diet promotes increased consumption of fruits, vegetables, nuts and legumes, along with small portions of meat and dairy: this can prevent 11 million premature deaths in adults per year and lead to a sustainable global food system by 2050 , which provides healthy food for all within planetary boundaries.

WHO

health = "Complete physical state, mental and social well -being (not just the absence of disease or infirmity)"

Human health with the environment - links human and animal health - their convergence involves benefits and risks for both

the appearance, presence and spread of emerging and re -emergent infectious diseases

The Wildlife Conservation Society (New York, 2004), "One World, One Health"

interdisciplinary bridges, to a single health, in a globalized world

Establishing a holistic approach to prevent epidemics and zoonotic diseases

Maintaining the integrity of ecosystems and well -being of human beings and pets and biodiversity which is the basis of the work and supports us all

No discipline or sector of society has sufficient knowledge and resources to prevent the occurrence or re-action of diseases in a globalized world

Food and Agriculture Organization of the United Nations

World Health Organization

INFOSAN SECRETARIAT STRATEGIC PLAN 2020-2025

6.1 Results from INFOSAN Advisory Group SWOT Analysis (December 2016)

Opportunities:

- Expansion of non-emergency information sharing
- Exploitation of Global Status to showcase importance
- Capacity Building to improve awareness/participation
- Utilization of IT tools for information sharing
- One Health
- Linking with regional networks/initiatives
- Linking with IHR
- Community Building
- Fostering Bi-lateral collaboration
- Globalization Necessitates INFOSAN
- Leadership opportunity
- Utilization of the new Advisory Group

One Health concept. Premises

- Increasing human life expectancy;
- The higher incidence of some diseases increases health expenses (resource consumption);
- Climate change;
- Population aging.

A new global concept - One Health - is starting to be organized worldwide, with the mission of:

- finding the roots of the evolution of diseases and their spread;
- recommending the appropriate solutions in areas where human health is affected.

2012: United Nations Conference on **Sustainable Development** in Rio de Janeiro - countries renewed their commitment to supporting **sustainable development** and promoting a **sustainable economic, social and environmental** future for the planet and present and future generations.

Final document of the Conference "The future we want " with 2 major concerns:

- the effective integration of the three pillars of **sustainable development** to prevent the subordination of social policy to the economic one;
- **environmental sustainab**ility is not subject to production and consumption models.

"One Health and the Sustainable Development Goals", USA, 2016

Background: various relevant and complex extreme events in terms of health:

– Ebola epidemics,
– pandemic flu, with contested prevention systems and emergency plans,
– the impact of climate phenomena - the spread of diseases,
– difficulties presented by the Zika virus.

All these events show a relationship between the human population, the animal population and the environment and cannot be properly analyzed or solved in isolation – but only through integrative strategies.

EFSA Strategy 2027
Science, Safe food, Sustainability

Starting point: Food safety - integral part of sustainable food systems.
The need to apply an approach "only one health - an environment" for protecting public health. This requires transdisciplinarity - cooperation between fields and scientific organizations to cover the complexity of the concept

Themes and key objectives

- Examining food and feed safety from a broader perspective of sustainability.
- Exploring the possible evolutions in the science of risk assessment.
- Reflection on future strategic objectives and directions for regulation science.
- Contribution to new political goals, such as the EU Green Deal.

2022 EU CONFERENCE

one

HEALTH • ENVIRONMENT • SOCIETY

https://www.youtube.com/watch?v=7iqeb3MLXZA

https://www.youtube.com/channel/UCTURPCB375YunOtddm-JB6A

Conclusions

Increasing interest and attention of consumers towards healthy food products with increased nutritional value, but also sustainable (e.g. organic agricultural products, the problem of packaging) – food safety issues may also arise.

1. **Nutritional security** – quality: hygienic, nutritional, sensory.
2. Other issues to be discussed in relation to food safety and sustainability**: food packaging** and the phenomenon of food fraud.
3. **Needs:**

- more protein, but sustainable - new sources;
- circularity - to find new resources and recover valuable nutrients;
- innovation - throughout the food systems (systemic approach) – including the management of resources and food hygiene;
- multidisciplinary collaboration.

Thank you for your attention