

## **An FP7 ERA-NET on Sustainable Food Production and Consumption**

### **SCOPE OF SUSFOOD**

#### **Domain 1. Valorisation of food and food products**

##### **1.1. Valorisation of food sources**

- Improved utilisation of raw materials along the processing line and adaptation to changes in availability/quality of raw materials and instability of prices
- Upgrade to food ingredients, designing new foodstuffs based on alternative raw materials
- Value based certification
- (Utilisation of) Alternative protein and nutrient sources
- Maximising efficiency and value of resources (by/co products), recovery and use
- Characterisation of the products, (bio)chemical, nutritional, bioactive components
- Combine food and non-food products
- Productivity, market access, externalities

##### **1.2. Valorisation of food influencing consumer health and welfare**

- Functional products and probiotics
- Organic food
- Nutraceuticals
- By/co-products – including to improve the health properties of other food products
- Developing innovative products and new risk assessment strategies including novel foods
- Healthy, sustainable and specific diets, customized diets
- Substitutes for unhealthy ingredients, e.g. salt, sugar, different lipids
- Additives/ Auxiliary products/ Ingredients
- Improved nutrition/environmental performance of food
- Better understanding of micro-nutrients uptake and minority components
- Foods contributing to beneficial for health / improving public health
- Marketing claims versus real health benefits and sustainability

#### **Domain 2. Engineering of the food production chain/system**

##### **2.1. Resource efficiency**

- Optimizing resource use efficiency (raw materials, energy, water, waste/ GHG reduction)
- Logistics and systems efficiency...material flows, food distribution, delivery

- Optimization of production/processing/storage/distribution systems for economic and environmental efficiency
- Combination food/non-food production to maximise efficiency and waste reduction, bio-refineries
- Time scale crossed with geographical scale
- Tools and methods of resource efficiency measures and understanding measure uncertainties
- Minimizing food waste and losses; and promoting recycling generation
- Improved management systems, logistics, traceability and trading systems
- Adaptation to changes in availability/ quality of raw materials and to instability/volatility of prices
- Sustainability criteria
- Food processing resilience/resource dependency

## **2.2. Improved quality**

- Sanitary food quality and food safety
- Traceability, tracing technology to optimise quality and reduce waste throughout the supply chain
- Management of increasing variability/cost of agricultural raw material.
- The “quality-by-design” Information systems, quality databases, quality standardization
- Certainty of measures: verifiability, validity, reliability, representativeness, repeatability, transferability...
- Increased product shelf-life/ food spoilage control (to reduce food waste and losses)
- Effect of growing, preserving and processing conditions to optimise the quality of foodstuffs of for example vegetable origin (plant production) - Nutritional value during processing  
Value-adding processes
- Food safety, hygiene, contaminants, health risk assessment to toxic food compounds
- Quality – gastronomy
- Food trends
- Risk assessment (risk/ benefit approaches)
- Composition of the food

## **2.3. Sustainable technologies**

- Energy efficiency, renewable energy, recycled inputs (energy, water, waste), recovery of residues (mainly packaging), etc.
- Optimising water accessibility and availability; water footprint
- Nutrient efficiency (use, circulation)
- Minimal processing/ mild processing
- Local/regional/culture/other value based technologies
- Eco-conception
- Design for sustainability
- Methods/indicators for food security and sustainability
- Assessing methodologies: Life Cycle Assessment, social LCA, input-output, MIPS etc.
- Biofuel production from waste, co-products and side flows
- Socially sustainable working conditions

- Use of renewable energies
- Optimising use of recycled inputs, recovery of residues (mainly packaging), etc.
- Packaging and storage innovation – including bio-based products for packaging
- Biotechnologies
- Closing cycle C2C
- New technologies for flexible, efficient processing/packaging (ICT, robotics and automation solutions)
- Novel technologies for logistics and distribution
- Productivity, efficiency, investment return

## **2.4. Decreasing environmental emissions and impacts**

- Reducing greenhouse gas emissions, harmful emission, eutrophication, ozone depletion and climate change impact throughout the food chain
- (Eco)toxic impact
- Preservation and minimizing impact on eco-systems and biodiversity; justification-analysis of biodiversity
- Ecosystem services (including valuation)
- Food environmental ethics
- Food environmental legislation/regulation
- Standardisation and harmonisation of metrics to assess environmental impact of the food chain
- Diversity of landscapes, public goods
- Better understanding and practical tools for supporting environmental risk assessment
- Other environmental impacts (by-products not considered as wastes)
- Understanding supply chain attitudes, behaviours and practices that affect resource use to target ways to reduce environmental impacts across the supply chain
- Emissions to air (GHG, non GHG, odour, PM), soil & water (pollutants)

## **Domain 3. Consumer and sustainability**

### **3.1. Consumer communication and decision support**

- Increase awareness of sustainable food and consumer confidence in food
- Influence of social media; communication on different levels
  - Need for understanding the factors which influence consumers attitudes/ preferences/ perception/ acceptance – including education programmes
  - Food education (through life time) and knowledge base.
  - Improve communication between public, public policy and R&D
- LCA; multi-criteria approaches and interactive tools (eg nutrition and environmental impact calculators)
- Understanding food values : environmental, social – sustainability based labelling, food aesthetics, animal welfare labelling – and how these can be influenced
- Consumer decision support systems for encouraging sustainable consumption

### **3.2. Consumer attitudes and behaviour**

- Consumer decision support systems for sustainable consumption

- Understanding consumer attitudes and behaviours to reduce food waste and losses and other environmental impacts, in the home and outside the home
- Eating patterns, diversity of diets and how these can be influenced to be sustainable
- Social norms: eg
  - Consumer behaviour at home and outside home– frame of the everyday life
  - Different diets/ nutritional behaviour of men and women/ different ages/ lifestyles/ culture/ physical activity/ elderly people/ adolescents)
- Sustainable catering of institutional kitchens, schools, canteens, etc.
- Consumer willingness to pay
- Barriers and trade-offs between sustainable healthy diet/lifestyle
- Safe diet and risk communication
- Food related diseases versus sustainability
- Quality of life related to eating pattern
- Food quality – Organoleptic properties and consumer perception - Gastronomy - Pleasure
- Food trends
- Understanding how consumer behaviour influences the sustainability of food supply chains
- Understanding consumer behavior, food choice and accessibility in context of food security
- Identifying interventions to help consumers achieve safe, healthier diets within sustainable food systems

### **3.3. Food by branding**

- Consumer acceptance/preferences, customized products and consumer oriented technologies
- Food production and consumer expectance - consumer oriented production technologies
- Service design (LOHAS, slow food, valorisation of traditional diets)
- Decommodification, sufficiency, de-growth
- Consumer and food information / food labelling and its role to inform sustainable choices
- Innovation in traditional foods
- Methods for certification and for detection of distinguishing organic and conventionally produced food
- Responsible and ethical branding on product health properties
- Health claims labelling

## **Domain 4. Holistic view – Link dimensions**

- Assessment methods of the four dimensions of sustainability: environment, society, economy, health; development of comparable methods and harmonise European databases
- Defining a sustainable healthy safe diet and how it can be achieved
- Identification and/or analysis of critical points in food systems conception
- Localisation of activities (eg. production, processing, transportation, trade, transformation, retail), to optimize environmental impact and economic efficiency
- Self-sufficiency
- Pros and cons of local vs international food – understanding environmental, social and economic trade-offs

- FAIR-trade schemes
- Food trade - Systems for distribution and sale of food
- Management of food stocks
- Inequality of access for consumers to a variety of products
- Nutritional needs crossed with environmental impact of diets
- Understanding uncertainties in measures
- Simulations of new food chains
- Public policies
- Economic analysis
- Food security
- Social innovations to promote sustainable production and consumption
- Environmental economy
- Impact on environment
- Internalizing external costs; environmental, social and health costs
- Development, harmonisation and use of databases and datasets to coordinate evidence, metrics and methods
- Private sector strategies
- Global food security
- Feeding cities
- Bio-economy
- Resilience of food supply systems and more generally of food systems