



FOSC

## FOSC

ERA-NET on Food Systems and Climate

### About

FOSC, the ERA-NET Cofund on Food Systems and Climate, is dedicated to fostering collaborative R&I&D between AU and EU in order to address this global challenge. FOSC started in October 2019 for a duration of five years under the umbrella of FACCE-JPI. The FOSC Consortium consists of 28 international partners from Europe, Africa, and Latin America. The work of FOSC focuses on one of the most complex global challenges: how to achieve food and nutrition security and sustainable agriculture under a changing climate.

### Aim and activities

The ambition of FOSC is to contribute to strong and effective trans-national research and innovation between Europe, Africa, and Latin America for food security under climate change. FOSC aims as well to contribute to the coordination and synergism between national and international research programmes on these topics.

The challenge of achieving food and nutrition security within the context of sustainable food systems calls for increased investment and collaboration with a shift towards a more inclusive approach to thinking and working. It is aspired that FOSC will increase investments in R&D&I through a coordinated regional mechanism aimed at reducing fragmentation.

For reaching its targets, FOSC initiates and organises additional activities to foster collaborations into existing networks and enhance impact of research on food systems and climate at the bicontinental AU-EU level and beyond:

- the preparation and implementation of a joint call for proposals (FOSC call 2019) resulting in 17 funded projects;
- the deployment of innovative instruments for alignment and collaboration in R&D&I;
- a second call or alternative research funding activity for multi-actor research projects (joint call of FOSC and SUSFOOD2 2021) resulting in 5 funded projects;
- capacity strengthening (workshops, trainings,...);
- stakeholder engagement;
- support to policy making;
- developing a Knowledge Platform; and
- communication and dissemination of results emerging from activities.

### Challenges

The world today faces one of the biggest challenges of the 21st century: how to feed 10 billion people in 2050. Current patterns of food consumption and production will increase pressure on already scarce natural resources. Climate change represents an additional threat, already undermining agriculture and food systems in many regions, making it more difficult to achieve food security and nutritional goals and reduce poverty. Ensuring food and nutrition security in the long-term while containing global warming within 1.5 or 2°C, will require both changes on a societal-level and a systemic transformation of food

systems. This transformation will require a change in the current predominantly short term vision of food systems, as well as a change in culture, education and training and an overall change in consumption patterns and citizen's behaviour.

Impact of climate change is expected to alter crop yields, livestock productivity, and food quality, with cascading impacts on agricultural land use, soil, water and biodiversity, as well as food systems through changes in availabilities and prices of agricultural commodities and in international trade. The four pillars of food security (availability, access, stability and utilization) are threatened by climate change especially in developing countries and this may contribute to population displacements, conflicts and migration.

Food is essential for all human beings. Global peace and stability are largely underpinned by the ability to provide healthy diets for all. The projected need for a 60 percent increase in food to feed a global population approaching 10 billion by 2050, coupled with an increased demand for animal-sourced protein and higher caloric diets, will dramatically increase pressure on natural resources on which our food security depends and worsen the climate challenges which we currently face.

## Scope, goals and research topics

The scope of FOSC covers all topics that contribute to the achievement of food and nutrition security under climate change within the context of sustainable food systems, considering the three dimensions of sustainability (social, environmental, and economic). This scope covers the food system as a whole, from soil and agriculture to food processing, logistics, economics, consumers and waste.

The work of FOSC is embedded in the EU-Africa High Level Policy Dialogue on science, technology, and innovation and all initiatives within the ERA-Net associate transcontinental participants.

FOSC aims to have impact on:

- Effective trans-national, research, innovation and collaboration on food and nutrition security and sustainable agriculture under climate change;
- Effective networking, better coordination and synergy between national, international and EU research programmes relevant to food systems under climate change;
- New insights on the reduction of the environmental footprint of the sector, and more specifically on the reduction of both inputs and waste;
- Carbon neutral agriculture and food chain;
- Enhanced understanding and awareness about the effects of climate change on global food value chains, and understanding the consequences on the social and economic components of society;
- Development of innovative solutions to cope with the multiple risks and challenges to the food systems posed by global environmental changes.

The following research topics were prioritized during the first three years of FOSC and are still considered relevant:

- Assessment of climate change-related risks for food value chains, including impacts on producers, prices, availability, quality, international trade and food security, and resulting changes in consumer behaviours;

- Promotion of innovative technology deployment to build sustainable and resilient food value chains influenced by changing food needs and patterns, and to develop better efficiency of the inputs and outputs of food systems;
- Improvement of resilience and reducing volatility in agri-food production and food markets to sustainably improve food security in the context of climatic variation;
- Reducing food losses under climate change, including novel approaches to valorise side streams and reduce food waste;
- Food Systems adaptation and resilience to system shocks;
- Energy use and efficiency in food and feed production systems.

Important cross-cutting aspects welcomed in the work of FOSC are:

- Addressing different scales in research:
  - Spatial scales (local case studies and projections at regional level / comparisons between different regions and global assessments);
  - Time scales with the 2050 time horizon. Transitions between current conditions and 2050. Scenarios, trends, drivers, climatic trends and climatic variability in time;
- Multidisciplinary and transdisciplinary work;
- A system approach.

Other relevant topics identified by FOSC are:

- To clarify patterns regarding the economical and societal impacts of climate change at regional and at global levels;
- Risk assessment and risk management approaches for the extreme events;
- Mitigation and adaptation solutions fostering resilience of food systems;
- To protect human health through the provision of enough safe foods;
- Safeguard food production while preserving environment and climate.