

Resilience and Transformation



How EU research in food systems and natural resources can speed Europe's recovery from the pandemic, and 'build back better'

Recovering from the COVID-19 pandemic will require many changes – including in the way we produce and consume our food. This has a direct effect on our health, our environment and our society. A special 5th SCAR Foresight Exercise Report, initiated by the European Commission's Standing Committee on Agricultural Research (SCAR), spells out how research and innovation in three specific fields – diet, diversity and circularity – can help speed social and economic progress.

A FEW SOBERING FACTS:

- 8% of the world's population is undernourished, while an ever increasing number is overweight or obese;
- Food and agriculture are responsible for up to 30% of greenhouse gas emissions – despite EU plans to reduce the European footprint;
- About a third of the food produced for human consumption is lost or wasted – a cost of nearly €1 trillion;
- Diversity is so imperilled that 1 million plant and animal species face extinction, yet our food habits are so concentrated that 60% of calories come from just three grains: rice, maize and wheat.

These are not new problems, but the COVID-19 pandemic has highlighted their urgency – especially with the United Nations now forecasting a resurgence of hunger in much of the world. We must transform our society, and become more resilient and to live within planetary boundaries.

The EU has taken ambitious steps already, with a law to go carbon-neutral by 2050, and a panoply of new policies, programmes and legislation that will propel its [Green Deal](#), [Biodiversity](#), [Farm to Fork](#) and [Circular Economy](#) plans. But their ultimate success will depend heavily on European research and innovation (R&I) – and a new foresight report by a team of European experts outlines the steps ahead. The report of the 5th SCAR Foresight Exercise Expert Group* on 'Natural Resources and Food Systems: Transitions Towards a "Safe and Just" Operating Space' was published on 15 December 2020 at a German EU Presidency conference online from

Berlin. Its conclusions support specific SCAR recommendations for the next ambitious EU R&I programme, Horizon Europe, and a declaration by EU policy leaders, published at the conference.

Key conclusions of the report:

- To tackle the challenges, R&I must help define clear targets for the future – for instance, that by 2050 we cut agricultural phosphorous usage by 81% and pesticides by 75%, and that we roll back the average human body mass index in the EU to a healthier range – well below the current 51.8% that are overweight. The report lists 11 such targets relevant to the physical and social spheres.
- R&I is a key enabler of food systems transformation that can take multiple forms. Key to making advances will be the application of a systems approach that cuts across sectors and disciplines and engages multiple actors to deliver co-benefits for health, sustainability, climate and inclusion.
- An extended R&I programme is needed to improve **diets and nutrition** across the EU. For instance, we eat 2.5 to 3 times as much meat as recommended by dieticians, with knock-on effects on our own health and that of the planet. The reasons are complex: a mix of industry structure, sectoral lock-ins, social pressures, economic inequalities and personal preferences. R&I can help understand the causes, and guide needed government action – in food advertising, education, competition policy and technological aids to better nutrition.



3 inter-connected challenges: Research on diet, diversity and circularity is needed to improve our welfare

11 TARGETS FOR A SAFER, FAIRER WORLD

- Deliver on zero CO₂-equivalent net emissions by 2050
- Restore the level of biodiversity extant in 2000
- Restore the damaged ecosystems of 2/3 of Europe's land
- Keep freshwater use at recent levels
- Reduce phosphorous use by 81% in 2050, nitrogen by 86%
- Reduce pesticide use by 75% by 2050
- Provide healthier diets: achieve a normal weight for all
- Eliminate gender discrimination
- Treat all animals according to stringent welfare standards
- Provide a fair income for farmers
- Provide Internet access to all in rural areas

- A **circular food and resource supply** can become reality. Wasteful practices can be stopped, circularity designed into all products from the start. Critically important: R&I into the advancing field of ‘agroecology’: for instance, farmers working to improve soil biota naturally, paying more attention to crop rotation and cover, making use of microbiomes. For this, a massive effort in education is needed – on the farm, post-farm and among consumers. But governments must also act, with more coherent policies, support to promising innovations and networks, better cost accounting and investment, and more information from production to consumption to better trace supply routes.
- For society and the economy to become more resilient, – a problem highlighted by the pandemic – we need more **diversity**: in what we eat, what we grow and fish, and how we structure society, and who engage with to co-create solutions.

Horizon Europe, the EU’s new R&I programme (2021-2027), is a vital tool to effect these transformations. The expert group’s analysis provides an importance evidence base to support SCAR’s programme recommendations.

* The group of 14 experts was initiated by SCAR, founded in 1974 by EU Council regulation to advise the member states and Commission on agricultural research. It was chaired by Gianluca Brunori, professor of food policy and bioeconomy at the University of Pisa.

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