


Systems innovation for climate action

How to reform food systems

Salvatore Martire, Deem Demonstrations Team
ASKFOOD Webinar Series – 12 February 2021

Our Partnership Community



An aerial photograph of a tractor working in a field. The field is filled with rows of young green plants, likely corn, spaced out in a grid pattern. The tractor is positioned in the upper right quadrant of the image, moving through the rows. The overall scene is captured from a high angle, showing the repetitive pattern of the agricultural landscape.

EIT Climate-KIC addresses the interdependent challenges of climate change and sustainable development through systems innovation

Our 10-year track record in climate innovation

1600+
climate-positive
start-ups incubated

€3.4bn+
climate funding
leveraged

595
new products
and services

€550m+
total value of
funds managed



391+
formal partners,
across 28 countries
(including *Linked 3rd*
Parties)

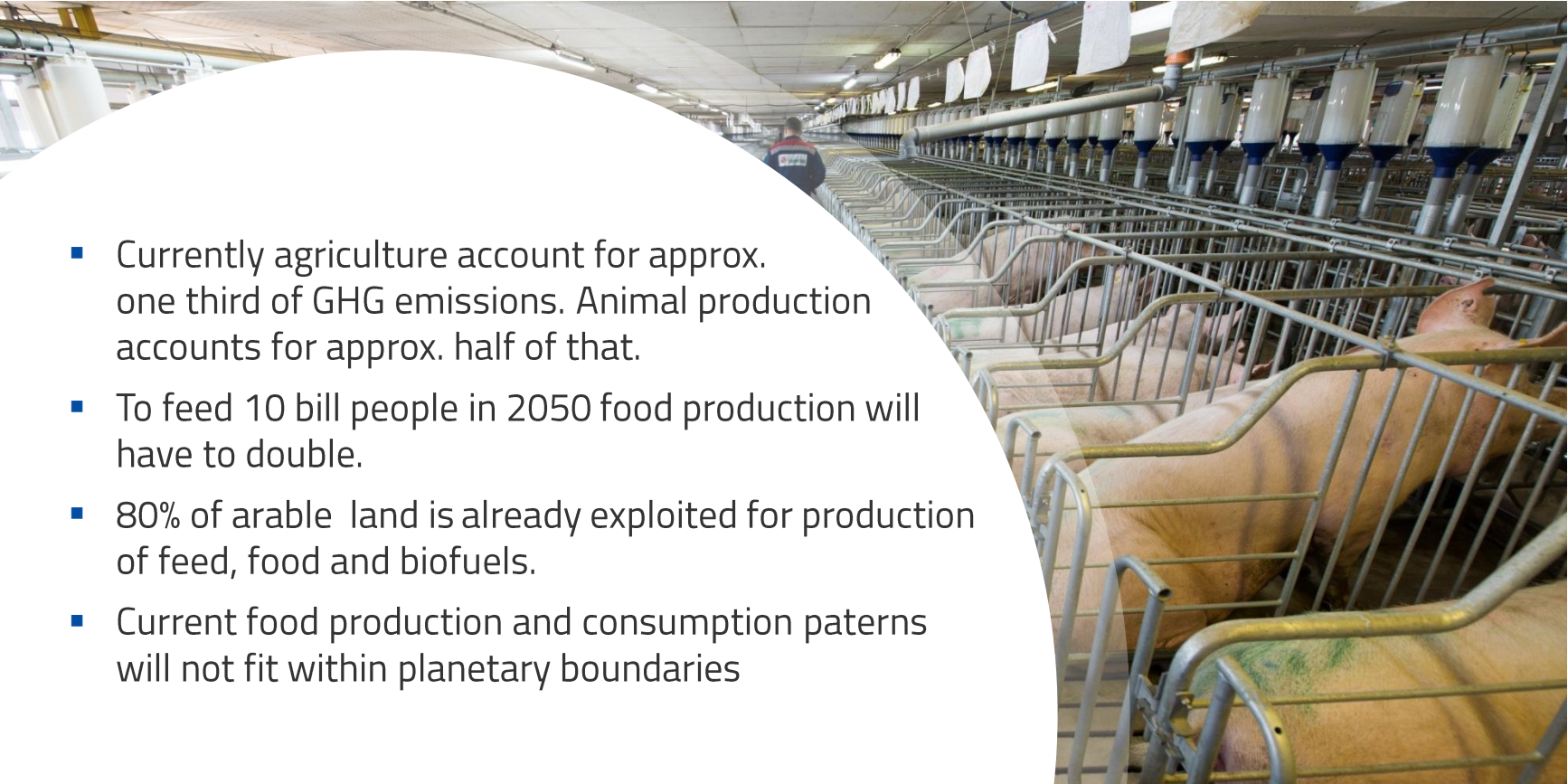
>€1bn
investment attracted
to start-ups

>2300+
full-time jobs created
since 2010

44,000
participants in our
education activities

The Food Challenge

- Currently agriculture account for approx. one third of GHG emissions. Animal production accounts for approx. half of that.
- To feed 10 bill people in 2050 food production will have to double.
- 80% of arable land is already exploited for production of feed, food and biofuels.
- Current food production and consumption paterns will not fit within planetary boundaries



Innovation projects portfolio (2020)

Reform food systems

Turning beer waste to meat

Tailoring starter cultures for the production of meat and dairy alternatives from Brewers Spent Grain led by the University of Denmark

Closing a loop in the food industry

Techno-economic and environmental feasibility study of Phosphorus recovery and reuse in fertilizers applied to Italian Prosumers led by the University of Bologna

Set sustainable food as a default

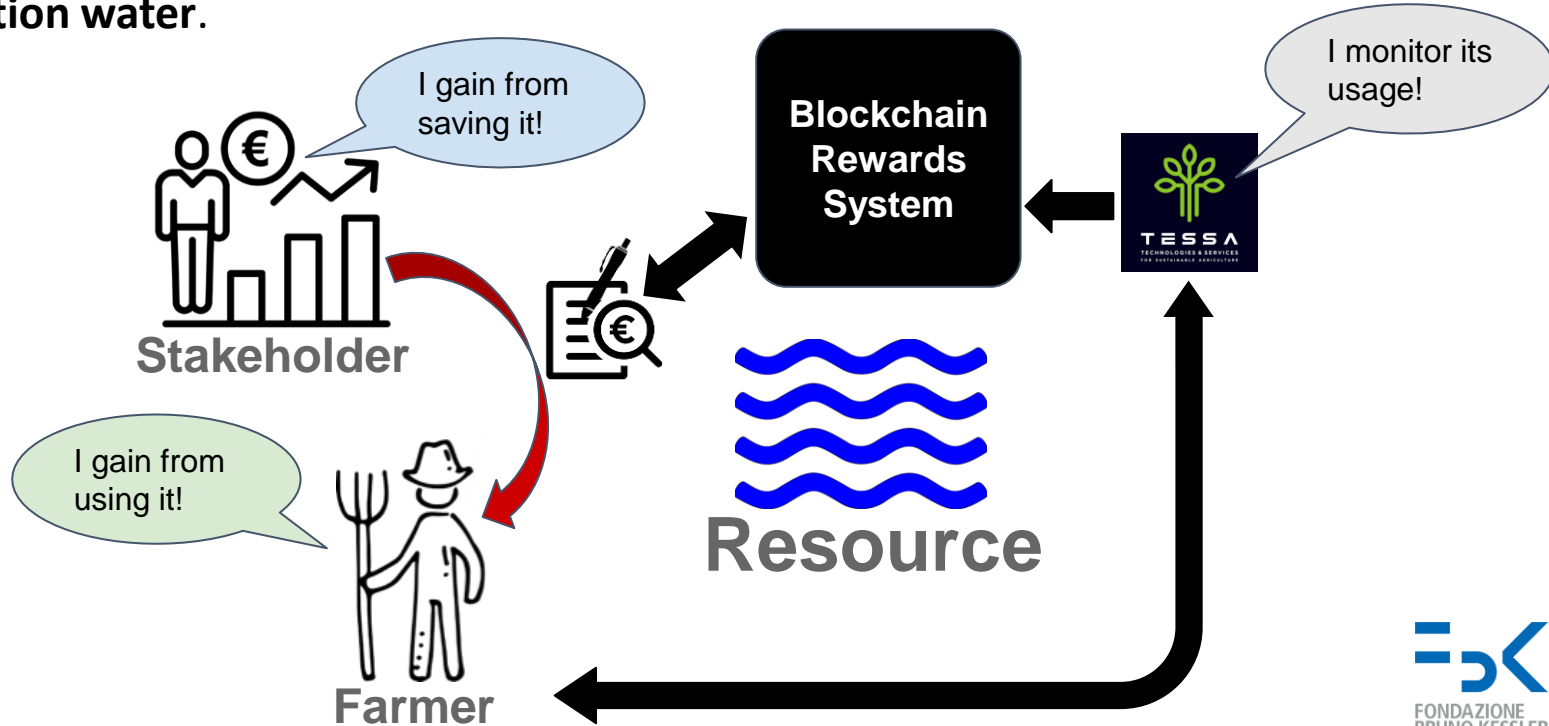
Operationalizing Food System Targets for Health and Sustainability led by the EAT Foundation

New food for farmed fish and animal

FEED-X led by ProjectX

SAPIENCE wants to **promote sustainable agricultural practices** through the use of the **Internet of Things deployed in the fields** to collect information about crops and farmers practices. It focuses for 2020, on incentivizing **savings of irrigation water**.

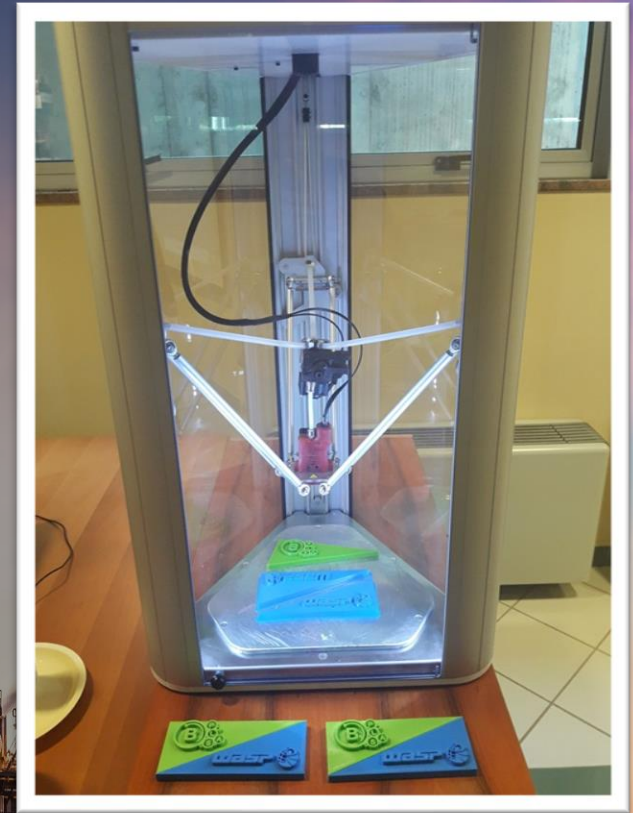
Led by FBK



Recovery of by-products – BPLAS project

Nearly 40% of chemical energy of food ends up in wastes or in wastewaters. Wastewater organics are concentrated through aerobic wastewater treatment plant (WWT) yielding biosolids with an overall EU production equal to 20 Mton/y (Eurostat 2017).

The B-PLAS project is realizing fully automated plant that allows to convert food waste, waste sludge and other organic residues into Polyhydroxyalkanoates (PHA). PHA is a bio-based and bio-degradable plastic, suitable for packaging, disposable items, medical application and 3D printing.



Innovation Ecosystems on Wine and Vine in the Mediterranean



- Capacity building for national ecosystems in the Vine & Wine Value Chain
- Implementing participatory approaches to design, co-construct and share adaptation and mitigation pathways
- Developing national hubs with an interdisciplinary approach

Italy

Fondazione Edmund Mach (lead partner)

Institute for the Bioeconomy – National Research Council (CNR – IBE)

Cyprus

Cyprus University of Technology (CUT)

France

l'Institut national de la recherche agronomique (INRAE)

Centre International de Recherche Agronomique pour le Développement (CIRAD)

Portugal

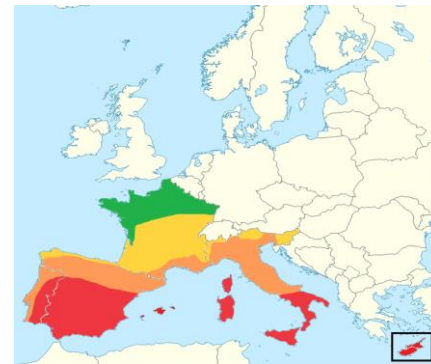
Universidade NOVA de Lisboa, Faculty of Science and Technology (FCT-Nova)

Slovenia

National Institute of Chemistry (NIC)

Spain

Universitat Politècnica de València (UPV)



Cross-KIC cooperation on Water Scarcity

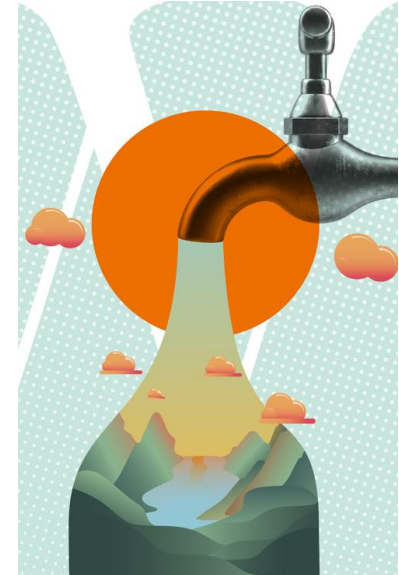


Why is water scarcity important?

According to FAO, the food production consumes 70% of the world's fresh water resources; not only in growing crops and raising animals, but also in processed food, where water is a major ingredient.

Why are we engaged?

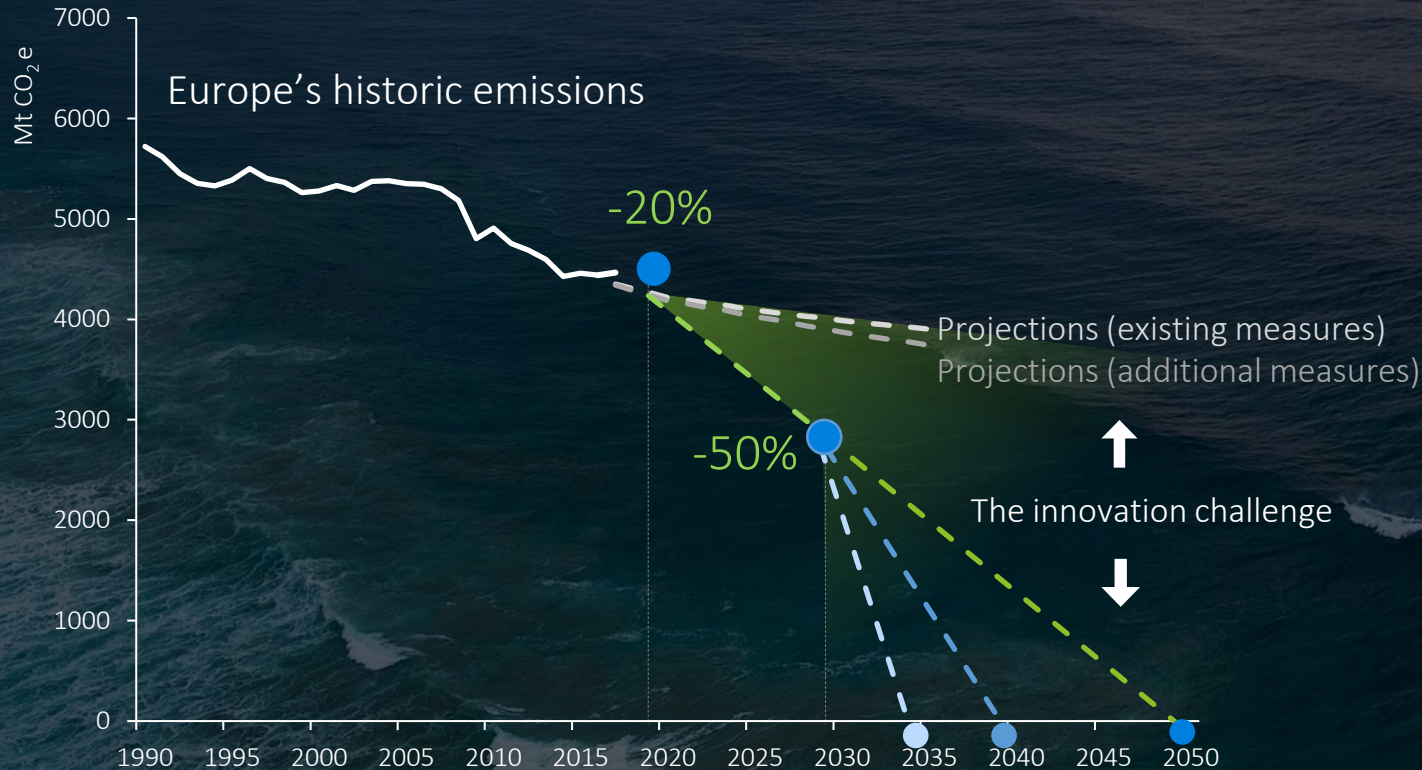
Flooding and water scarcity in Europe will increase in the coming decades if the objectives of the Paris Agreement on climate change are not met. The European Commission, together with the KICs, is working with EU countries to overcome these challenges and encourage countries, companies and households to implement more water-efficient measures.




Levers of change



Business-, innovation- and investment-as-usual are not delivering a **1.5 degree world**. We're not on track in **Europe**...



Source: www.eea.europa.eu/data-and-maps/indicators/greenhouse-gas-emission-trends-6/assessment-2



Limiting global warming to 1.5°C would require rapid, far-reaching and unprecedented changes in all aspects of society.

IPCC Special Report on 1.5 Degrees

Innovation is essential.
But not as we have
been doing it.

We need a **new model
of innovation** to
catalyse **systemic
change**.

Connected
innovations...

...acting
simultaneously

...across
multiple levers
of change

...triggering
massive leaps in
decarbonisation
and resilience.

...to transform
places, people,
sectors and
value chains...

“ Deep demonstrations are intended as inspirational examples of what is possible when innovation is orchestrated, collaborative and mission-led. They represent the ‘growth edge’ of our strategy for tackling climate change through systems innovation. ”

Kirsten Dunlop, CEO, EIT Climate-KIC

4

Sensemaking and feedback loops

We generate actionable intelligence to accelerate learning about how to achieve transformation at scale. Feedback loops inform policymaking and dynamic management of innovation options.

3

Orchestrate a portfolio

For each challenge, we build and manage a portfolio of 30 – 100 connected innovation projects, designed to address leverage points identified in earlier stages.

1

Understand and map the systems challenge

We engage demand-side challenge owners – city mayors, regional leaders, government ministers and CEOs of major companies – to understand ambition and needs, identify constraints and secure intent for transformational change.

2

Define the intervention strategy

We identify where and how innovation can play a role in catalysing change dynamics, and start to design relevant innovation ‘positions’.





Healthy, Clean Cities

Just Transformations

Climate-friendly Food Systems and Diets

01

02

08

Deep Demonstrations

03

Resilient, Net-Zero Emissions Maritime Hubs

Landscapes as Carbon Sinks

07

04

Circular, Regenerative Economies

06

05

Long-termism

Resilient Regions

..... ● First wave ● Second wave

A deep demonstration of...

Resilient Food Systems and Diets

Whether it's widespread plastic packaging, high-levels of food waste or diets high on meat consumption, our food systems are incompatible with a healthy, 1.5 C future. This demonstration will tackle food production, distribution and consumption, as well as metrics, policies and habits. We will work with people and places and at the level of global value-chains.



Cookbook for system change

<https://pub.norden.org/nord2020-048/>

A deep demonstration of...Resilient Food Systems and Diets

These 4 boundaries show that we must modify our food system. Therefore, each stage of the food system:

Sector 1

Production

Sector 2

Transformation

Sector 3

Distribution

Sector 4

Consumption

must be adjusted if we want to provide a healthier diet to an increasingly large and growing population, while we want to reduce its environmental impact through the reduction of greenhouse gases.

A deep demonstration of...Resilient Food Systems and Diets

But above all it is a question of favouring the meeting of all the actors and agents involved:

Governments and
sanitary
representatives

Producers and
Food Industry

Consumers

Retailers and
Traders

to break down the existing barriers between all of them and to share all the points of view, and to define together the actions to produce and to eat in a different way. For example, reducing greenhouse effector emissions, and reducing over-consumption.

10 years of experience has taught us that achieving the change we need requires a different approach to innovation

Incremental

System innovation

Transformational

Supply led

Demand led

Single projects and incremental change

Coordinated projects that build on each other

Isolated activities, often focused on technological improvements

Connected activities that access core areas of a system

