

# **Innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition**

CFS Special Plenary Session  
**4 June 2021**

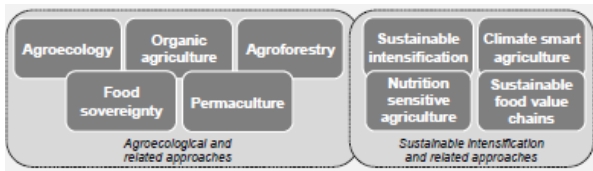
Martin Cole, HLPE Steering Committee Chairperson

# Innovation

“the process by which individuals or organizations master and implement the design and production of goods and services that are new to them, irrespective of whether they are new to their competitors, their country or the world

FAO (2016)

Many great innovative approaches and technologies



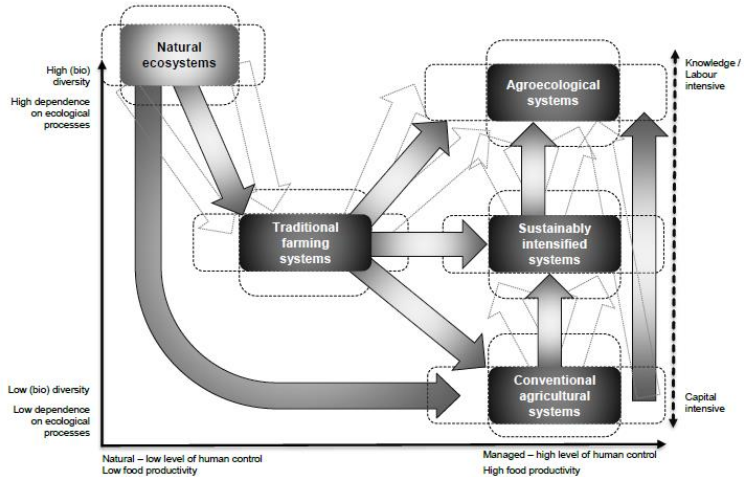
HLPE, 2019

Reducing the demand trajectory	Filling the production shortfall	Avoiding losses from current production level
<ul style="list-style-type: none"><li>• food preservation</li><li>• food stabilisation</li><li>• fermentation</li><li>• digital and data analytics</li><li>• remote sensing</li><li>• epigenetics</li><li>• nutrigenomics</li><li>• personalised nutrition</li><li>• novel protein sources</li><li>• leaf oil</li></ul>	<ul style="list-style-type: none"><li>• environmental modelling</li><li>• precision irrigation</li><li>• precision agriculture</li><li>• digital and data analytics</li><li>• urban agriculture systems</li><li>• plant and animal genomics and phenomics</li></ul>	<ul style="list-style-type: none"><li>• RNA interference</li><li>• GM and non-GM breeding</li><li>• synthetic biology</li><li>• digital and data analytics</li><li>• risk analyses</li><li>• whole genome sequencing</li><li>• tracing and tracking</li><li>• blockchain</li><li>• active packaging</li></ul>

The Science of Food Security, Cole et al., 2018

But Innovation is Invention **plus** Implementation!

# Transition Pathways and challenges

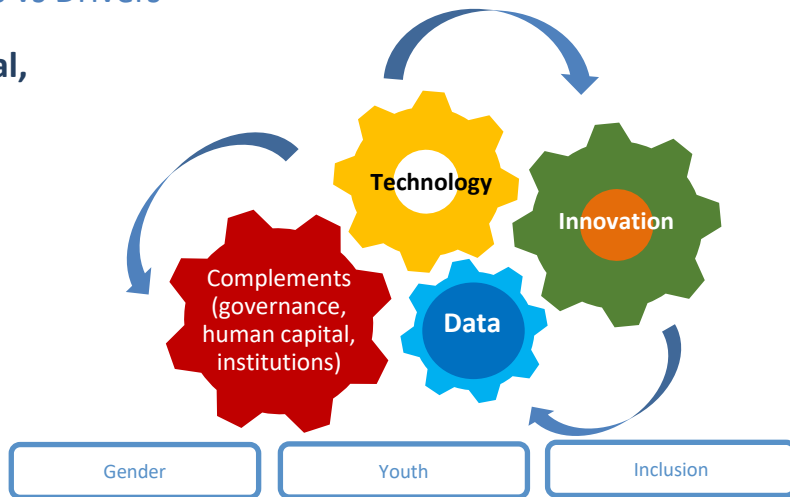


Adapted from Griffon (2013) and Hainzelin (2016).

# Key issue is how to accelerate innovation

## Types vs Drivers

- **Technological: digital, biotechnological, renewable energy, etc.**
- **Agroecology and other sustainable agricultural approaches**
- **Supply chains**
- **Policy**
- **Institutional**
- **Social**
- **Financial**



*But in a way that leaves no one behind!*

# Theory of Change



## HLPE's busy roadmap in the coming years

1. Youth engagement and employment in agriculture and food systems
2. Data collection and analysis tools for food security and nutrition
  - Led by Prof Carlo Cafiero, FAO
  - 1 July CFS intersessional event to provide valuable inputs
  - Link with monitoring, forecasting and modelling
3. COVID-19 issues paper update
4. Report on **Data collection and analysis tools for Food Security and Nutrition** (mid-2022)
5. Report on **Inequalities in food systems** (mid-2023)