



Food and Agriculture  
Organization of the  
United Nations

# AGRIFOOD SYSTEMS TECHNOLOGIES AND INNOVATIONS OUTLOOK

Concept Note





## ADDRESSING AN URGENT AND SYSTEMIC GAP

The strategic use of Science, Technology, and Innovation (STI) is pivotal for transforming agrifood systems (AFS) and achieving Sustainable Development Goals (SDGs) by 2030. However, the uptake of STI remains limited, especially in low—and middle—income countries (LMICs), due to issues like technology appropriateness, accessibility, affordability, and institutional capacity.

In addition, the world lacks sufficiently integrated, representative high—quality data and scientifically vetted analyses across the agrifood system, along the STI life cycle to support informed decision—making. Limited information on diverse technological and policy options leads to biased choices, often unsuitable for local agrifood systems. Insufficient R&D investment exacerbates this issue, leaving many AFS and small enterprises mismatched with available technologies. Grassroot innovations often go unnoticed, and global policy faces challenges in ensuring equitable access to knowledge and technology. In fact, evidence—based decision—making is lacking, impeding pro—poor policy prioritization in LMICs.


To effectively support AFS, investment in appropriate technologies and innovations, coupled with capacity development efforts for stakeholders in LMICs is essential, alongside the development of coherent institutional and policy frameworks.

## WHAT IS ATIO?

The Agrifood Systems Technologies and Innovations Outlook (ATIO) initiative, launched in 2022, aims to enhance understanding of technology and innovation generation, uptake and impact; as well as factors shaping the technology frontier in agrifood systems. It will be the most comprehensive global source of information on innovative solutions for Agrifood Systems Transformation. ATIO will include a knowledge/data base and a biennial publication providing insights into current trends and prospects for Agrifood System Science, Technology, and Innovation (STI). It will track STI progress globally, with focus on LMICs, identify emerging technologies, and address regulatory, ethical, gender, and environmental issues, ensuring inclusivity in decision—making and investments.

The Agrifood Systems Technologies and Innovations Outlook (ATIO) 2025 report, *Accelerating innovation towards equitable agrifood systems transformation*, will discuss the STI gap by providing a global, in—depth analysis of cutting—edge technological, financial, institutional, and policy solutions aimed at transforming agrifood systems. With a focus on low—and middle—income countries (LMICs), the report will explore key themes like global R&D trends, mission—oriented innovation policies, and the future technology frontier for sustainable agriculture. Collaborating with top researchers and think tanks, it will offer actionable insights to accelerate R&D impact and foster cross—sector partnerships.

Complementing the report, the ATIO Knowledge Base (KB), will act as a dynamic, open—access data and indicator series and a catalogue of technologies and innovations, continuously scanning and structuring agrifood innovations. The KB will empower evidence—based decision—making, bridge the gap between science, policy, and society, and ensure the effective use of STI solutions for inclusive, sustainable agrifood systems transformation.



## WHY IS FAO UNIQUELY SUITED TO BRIDGE THIS GAP?

FAO, as the lead UN agency in food and agriculture, aids Member States in identifying, piloting, and scaling tailored technologies and innovations. With unparalleled impartial role and convening power, FAO integrates and analyses data to inform public and private decision-makers. Through initiatives like ATIO, FAO fosters collaboration among diverse stakeholders to generate knowledge for informed policies and investments, aligning technologies with agrifood system realities.

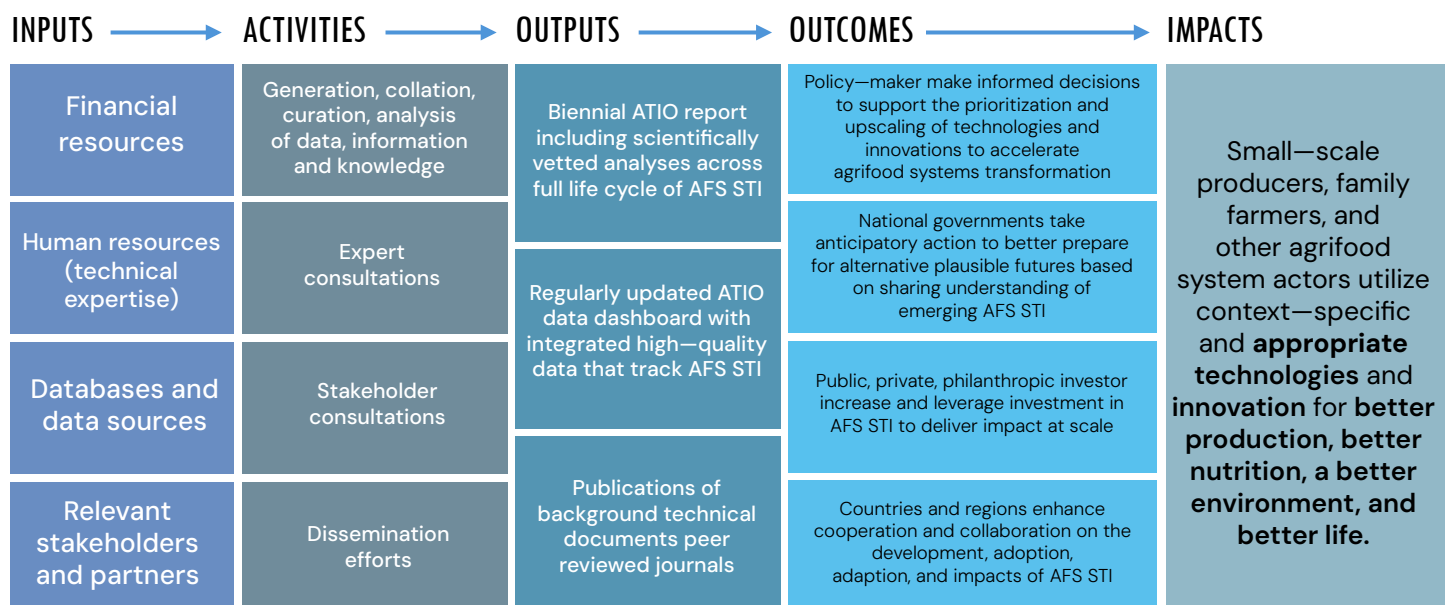
### FAO's Science and Innovation Strategy

guides ATIO efforts to strengthen evidence-based decision-making and enhance FAO's capacities, to accelerate use of appropriate technologies and innovation to achieve the Sustainable Development Goals.



## HOW CAN ATIO BRIDGE THE GAP?

Through collaboration and knowledge exchange, ATIO will promote the scaling of proven technologies and innovations, and foster inclusive innovation ecosystems, driving the sustainable transformation of agrifood systems.



## ATIO STAKEHOLDERS

The ATIO will target and collaborate with different actors, all with a stake and interest in informing the science—policy—society interface, at local, national, regional, and global levels.



POLICY  
MAKERS



FARMERS  
& SMES



PRIVATE  
SECTOR



RESEARCHERS



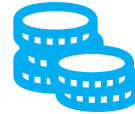
ACADEMIA



INDIGENOUS  
PEOPLES  
AND LOCAL  
COMMUNITIES



UN



FINANCIAL  
INSTITUTIONS



CIVIL SOCIETY  
ORGANIZATIONS

## J-OIN US!

Join us in unleashing full potential of the STI in transforming agrifood systems by enabling equitable access to technologies, innovations and resources, empowering small producers, strengthening institutions, and promoting evidence—based policy and investment decisions—making to achieve sustainable development goals and ensure global food security, leaving no one behind.



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