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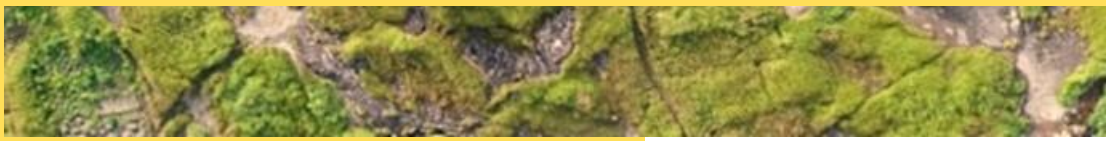
POLICY BRIEF

Accelerating Innovation and Impact in EU-Africa Collaboration for Sustainable Food Systems



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The European Sustainable Agriculture Dialogue (ESAD) is a multi-stakeholder platform created in 2019 that brings together key actors from across society – including industry, civil society, universities, and research centres – to discuss key topics, exchange our views and standpoints, and ultimately shape decisions towards sustainable agriculture. The brief was developed in consultation with ESAD members and the authors took their inputs into account in the drafting process. The paper does not reflect the views and opinions of single ESAD members. As such, their contribution is not to be interpreted as an endorsement of the final paper.

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ACRONYMS

A4IP	Accelerate for Impact Platform
AURG	African Union Research Grants
AU-EU	African Union European Union
CGIAR	Consultative Group for International Agricultural Research
DeSIRA	Development-Smart Innovation through Research in Agriculture
DG AGRI	Directorate-General for Agriculture and Rural Development
DG INTPA	Directorate-General for International Partnerships
DG RTD	Directorate-General for Research and Innovation
EIT	European Institute of Innovation and Technology
ESAD	European Sustainable Agriculture Dialogue
EU	European Union
FAN	Food Accelerator Network
FNSSA	Food and Nutrition Security and Sustainable Agriculture
HLPD STI	High-Level Policy Dialogue on Science, Technology, and Innovation
KIC	Knowledge and Innovation Community
LEAP4FNSSA	Long-term EU-AU Research and Innovation Partnership for Food and Nutrition Security and Sustainable Agriculture
PRIMA	Partnership for Research and Innovation in the Mediterranean Area
R&I	Research and innovation
SMEs	Small and Medium-sized Enterprises

EXECUTIVE SUMMARY

This policy brief focuses on the critical importance of fostering the uptake and impact of research and innovation (R&I) in agrifood systems, particularly within the context of EU-Africa collaboration. As Africa faces mounting challenges from climate change, resource scarcity, and food insecurity, R&I should not only produce innovative solutions but also facilitate their widespread adoption and scaling. Achieving sustainable, inclusive, and resilient agrifood systems in Africa requires translating science and technological advances into practical, large-scale applications. The policy brief examines the EU-Africa R&I partnership, addressing key barriers to innovation uptake and exploring how to facilitate the scaling of agrifood innovations. It also draws on insights from other global initiatives and the broader innovation landscape, offering a comprehensive perspective on the challenges and opportunities in promoting the uptake of innovation.

Barriers to scaling innovations include fragmented coordination, insufficient financing, regulatory complexities, and weak linkages between research, industry, and end-users. Moreover, systemic inequalities, including gender and power dynamics, further hinder access to innovations and their benefits, particularly for marginalized groups such as women and smallholder farmers.

The policy brief identifies several key factors for successful innovation uptake, including multi-stakeholder collaboration, long-term institutional support, market-driven solutions, and local leadership. To foster favorable conditions for adoption of innovation, the policy brief outlines several recommendations:

1. **Maintain strong EU investment in food systems R&I:** Ensure long-term, predictable funding to bridge the gap between research and application, supporting African-led innovation ecosystems.
2. **Strengthen synergy between EU institutions:** Improve coordination between EU actors to align priorities and roles.
3. **Strengthen knowledge platforms and learning mechanisms:** Facilitate multi-actor dialogue and improve monitoring and evaluation systems.
4. **Prioritize long-term, patient capital:** Focus on financial mechanisms that enable iterative development and support local needs.
5. **De-risk private sector investments:** Leverage blended finance and guarantees to attract private-sector capital for high-risk innovations.

6. **Support market pathways and commercialization:** Develop EU-African R&I funding streams that include market pathways and scaling support for startups and small and medium-sized enterprises (SMEs).
7. **Embed local ownership and leadership:** Engage African actors in co-designing and leading R&I initiatives to address the needs of smallholder farmers and underserved communities.
8. **Adopt a holistic ecosystem approach:** Strengthen regulatory frameworks, infrastructure, and capacity-building efforts to promote scaling.

INTRODUCTION

Why innovation uptake matters for sustainable food systems

Agrifood systems must undergo profound transformations to become more sustainable, inclusive, and climate-resilient, particularly in Africa. Achieving these outcomes requires critical contribution of research and innovation (R&I). R&I drives climate-resilient agricultural practices, enhancing resource efficiency, and fostering solutions that improve productivity while minimizing environmental impact. By improving food security, strengthening resilience to climate shocks, and supporting economic growth, R&I plays a pivotal role in sustainable food system transformation. R&I also supports evidence-based policymaking and knowledge-sharing, ensuring that agrifood systems adapt to evolving challenges.

Addressing the challenges of sustainable food systems in Africa requires not only groundbreaking research but also effective mechanisms for the uptake and scaling of innovations. However, without clear pathways to adoption, even the most promising solutions risk being confined to research papers and pilot projects. Innovation uptake refers to the process by which new technologies, practices, and knowledge move from research and development into widespread use by farmers, businesses, and policymakers. This process involves not only technological advances but also supportive policies, financial mechanisms, capacity-building efforts, and market incentives to ensure sustained adoption and impact. Overcoming systemic barriers, such as financing gaps, weak infrastructure, and limited capacity for adoption, is critical to ensuring that innovations reach end-users and contribute to food system transformation.

Objectives and structure of the brief

This brief, part of the European Sustainable Agriculture Dialogue (ESAD) series, examines the role of EU-supported research and innovation (R&I) in fostering agrifood innovation uptake in Africa. While it draws on insights from EU-funded programs, it also incorporates broader lessons from global initiatives, including CGIAR's Accelerate for Impact Platform (A4IP), to provide a wider perspective on both the barriers and the enablers of innovation uptake.

Specifically, the brief addresses the following questions:

- What are the main barriers to technology uptake in agriculture, and how can they be overcome, particularly in the context of EU-Africa R&I collaborations?
- What role can public-private partnerships play in driving agricultural innovation and technology transfer?

The brief is structured as follows: Section 2 provides a concise overview of the EU-Africa R&I partnership for sustainable food systems and the broader food-related R&I landscape. Section 3 examines the barriers and enablers of innovation uptake, synthesizing key lessons from EU and global experiences. Based on these insights, Section 4 offers recommendations for strengthening the EU's role in driving agrifood innovation uptake and impact in Africa.

Methodological note

This brief is based on a desk review of existing literature and on insights from four in-depth interviews with senior representatives from key EU institutions, multilateral organizations, and research centers. The desk review helped synthesize key trends and map out the current state of knowledge, while the interviews provided critical insights, practical perspectives and firsthand experiences on innovation uptake challenges and opportunities. Given the targeted nature of this analysis, the brief offers a snapshot of key lessons and experiences rather than a comprehensive assessment of the EU-Africa R&I partnership.

1. CONTEXT

1.1 The EU-Africa partnership on research and innovation

Recognizing the critical role of R&I, the EU has positioned R&I cooperation at the heart of its support for food systems transformation in Africa (European Commission 2022). Under the African Union - European Union (AU-EU) High-Level Policy Dialogue on Science, Technology, and Innovation (HLPD STI)—the main framework for Africa-Europe R&I collaboration—food and nutrition security and sustainable agriculture (FNSSA) has long been a priority. The 2016-2026 AU-EU R&I Roadmap on FNSSA outlines this commitment, providing a strategic framework for joint research efforts and long-term cooperation (see Figure 1 in Annex).

The EU-Africa FNSSA Partnership serves as a key mechanism for implementing this Roadmap, channeling investments into priority research areas and fostering collaboration between European and African scientists and institutions. The partnership has significantly expanded in recent years, with over 500 projects implemented to date, targeting four key priorities: sustainable intensification of agriculture; agriculture and food systems for nutrition; expansion and improvement of agricultural trade and markets; and cross-cutting topics (Mallet and Lewicki 2024). FNSSA is now embedded within the Green Transition area of the AU-EU Innovation Agenda and is supported by the €150 billion Global Gateway Africa-Europe Investment Package (European Commission, 2022).[1]

EU investments in food system-related R&I are delivered through multiple channels, reflecting the diversity of funding mechanisms and institutional roles. The Directorate-General for International Partnerships (DG INTPA) primarily funds African R&I organizations and international research bodies, such as CGIAR, supporting development-focused research that aligns with policy objectives. The Directorate-General for Research and Innovation (DG RTD), in partnership with the Directorate-General for Agriculture and Rural Development (DG AGRI), drives more fundamental and applied research through Horizon 2020 and Horizon Europe, which finance transcontinental projects under the EU-Africa FNSSA Partnership.[2]

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[1] A Dashboard of initiatives contributing to the AU-EU Innovation Agenda is available at Dashboard of initiatives | EURAXESS.

[2] See Partnership on Food and Nutrition Security and Sustainable Agriculture (FNSSA) and FNSSA Project Database.

To strengthen governance and coordination within the FNSSA Partnership, the Long-term EU-AU Research and Innovation Partnership for FNSSA (LEAP4FNSSA) was launched in 2018 to provide a structured mechanism for aligning research priorities and fostering closer collaboration between African and European institutions. It followed a fixed-term initiative called LEAP-Agri, an effort that provided joint EU-AU funding for 27 agricultural R&I projects before concluding in 2022. Rather than providing direct funding, LEAP4FNSSA focused on facilitating policy coherence and stakeholder coordination. The platform has since transitioned into the AU-EU International Research Consortium (IRC), an initiative designed to sustain structured collaboration beyond individual project cycles and to promote long-term research cooperation.

Launched in 2018 and funded by DG INTPA, the Development-Smart Innovation through Research in Agriculture (DeSIRA) initiative is the EU's flagship program for supporting climate-smart and sustainable food systems. With 61 projects implemented across 30 African countries, DeSIRA aims to integrate research into development policies while facilitating the scaling of agricultural innovations that enhance climate resilience and productivity.

Other EU-supported initiatives have focused on regional and thematic priorities. For example, the Partnership for Research and Innovation in the Mediterranean Area (PRIMA), which has been operational since 2018, and the Food Systems and Climate (FOSC) initiative, launched in 2019, have collectively funded over 260 projects, focusing on Mediterranean agriculture and climate adaptation in food systems.

Alongside EU-driven initiatives, programs co-funded by AU-EU have strengthened African-led research. The African Union Research Grants (AURG), co-financed by the African Union Commission (AUC) and the EU, have supported 32 projects across 30 African nations. Similarly, LEAP-Agri, a joint Horizon 2020 program co-funded by AU and EU countries, financed 27 R&I projects before concluding in 2022 (Mallet & Lewicki 2024).

Despite the progress made in strengthening EU-Africa R&I cooperation, ensuring that research-driven innovations translate into real-world applications remains a challenge. The next section explores the broader innovation landscape, highlighting the role of industry collaborations and entrepreneurial ecosystems in bridging this gap.

1.2 Broader R&I landscape: industry collaboration with universities and research centers

The R&I industry in the agri-food sector is witnessing a dynamic interplay among startups, established companies, universities, and research centers, all collaborating to drive innovation and address challenges in agriculture and food systems. This collaborative landscape is further enriched by the emergence of university spin-offs—companies formed to commercialize academic research—which bridge the gap between theoretical research and practical applications.

Traditionally, companies relied on large internal research and development (R&D) units staffed by technical experts to develop solutions—a model that often entailed high costs due to the scale and complexity of agricultural challenges across diverse geographies. Recently, however, there has been a shift toward cross-industry collaboration and multidisciplinary approaches. Increasingly, companies are sourcing solutions and forging partnerships with universities and research institutions. In fact, global food companies have launched venture funds and incubator programs to attract early-stage startups emerging from their projects and programs (CB Insights, n.d.).

This shift is driven by the need for sustainable food systems and context-specific solutions tailored to local conditions, affordable for farmers, and trusted by communities. It is also propelled by technological advancements, particularly in artificial intelligence (AI)—which could be critical for addressing intertwined issues in agriculture. Industry players are seeking smarter, more efficient, and sustainable methods for food production. R&I can lead to more efficient use of water and fertilizers, help farmers select resilient crop varieties, and optimize the timing of planting and harvesting.

University spin-offs play a pivotal role in translating academic research into market-ready solutions. For example, the Ceres Agri-Tech partnership, involving institutions such as the University of Cambridge and the University of Lincoln, has successfully launched spin-out companies focusing on innovations like robotic mushroom picking and strawberry yield forecasting. Similarly, the Center for Desert Agriculture at KAUST has fostered several entrepreneurial spin-offs by encouraging technology transfer and supporting pioneering initiatives among its members.

Companies increasingly prefer collaborating with universities and research centers over solely investing in internal R&D units for several reasons:

- **Access to cutting-edge research:** Universities and research centers are at the forefront of scientific discovery, providing companies with access to the latest advances and specialized knowledge.
- **Resource efficiency**: Collaborations allow companies to leverage existing research infrastructure and expertise, reducing the need for substantial investments in internal R&D facilities.
- **Talent acquisition:** Partnerships with academic institutions offer companies a pipeline to emerging talent, facilitating the recruitment of skilled professionals trained in the latest technologies.
- **Risk mitigation:** Sharing the risks associated with research and development through collaborative projects can lead to more innovative solutions without overburdening a single entity.
- **Enhanced market adoption and deployment: Collaborations** with academic institutions accelerate the uptake and deployment of innovative solutions. Field trials, pilot programs, and early adopter networks validate the real-world applicability of new technologies, building credibility and trust among end-users, and ensuring smoother integration into agricultural practices.

These collaborations not only drive innovation but also ensure that new technologies are effectively integrated into agricultural practices, benefiting the broader agrifood sector by enhancing their uptake and deployment at scale.

These dynamics are reflected in initiatives such as the StartLife AgriFoodTech Accelerator in the Netherlands, which is Europe's longest-running and leading agrifoodtech startup accelerator. Since 2010, StartLife has supported and funded hundreds of startups, propelling breakthrough technologies in food and agriculture (see Box 1).

Box 1: StartLife: Accelerating agrifood innovation in Europe

Box 1: StartLife: Accelerating agrifood innovation in Europe
StartLife is Europe's longest-running and leading agrifoodtech startup accelerator, dedicated to accelerating startups that are shaping a sustainable food system. Since its foundation in 2010, StartLife has built, supported, and funded over 300 startups, propelling breakthrough technologies in the domains of food and agriculture.

The accelerator offers a flagship zero-equity support program, StartLife Accelerate, designed for innovative early-stage startups in AgriTech and FoodTech. This 12-week program provides practical training, business coaching, and connections to industry experts, corporates, and investors, aiming to help startups validate their business, raise funding, and grow their companies.

Located on the Wageningen Campus in the Netherlands, StartLife collaborates closely with Wageningen University & Research, providing startups with access to world-class research facilities and expertise. The accelerator also co-founded F&A Next, a premier platform in Europe where investors, corporates, startups, and scale-ups in the food and agricultural domain come together for sharing insights, networking, and deal-making.

Through its comprehensive support services, StartLife empowers founders to build and grow impactful FoodTech and AgTech startups, contributing significantly to the transition towards sustainable food systems (Wageningen University & Research, n.d.).

Similarly, the CGIAR Accelerate for Impact Platform (A4IP) acts as a venture space that bridges science and entrepreneurship to incubate and accelerate scientific innovations, generating both impact and the necessary resources to support continued research (see Box 2).

Box 2: The CGIAR Accelerate For Impact Platform: Bridging science and entrepreneurship for agrifood innovation

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A venture space launched to systematically connect research outputs with the market and create new opportunities within the agri-food industry for market-aligned research and adoption. A4IP scouts and accelerates agri-food tech solutions in the conceptual and pre-commercial stages, de-risking development and deployment through business-oriented training, product validation with value chain players and technical assistance, personalized mentorship, market access, piloting opportunities, and funding. This comprehensive support is designed to empower startups, drive sustainable growth in the agri-food industry, and transform groundbreaking research into actionable, market-ready technologies.

Since 2022, A4IP has designed and executed country-specific projects in Morocco, Uzbekistan, Colombia, Egypt, Kenya, and Rwanda, as well as global programs. It has worked with more than 300 innovations and currently maintains a pipeline of 5,000 profiled, science-driven agri-tech and climate-tech solutions for sustainable agriculture and climate action.

As part of its efforts, A4IP has engaged in numerous activities with startups and shared valuable insights on translating scientific breakthroughs into successful startup ventures. This hands-on approach has provided practical lessons on how to navigate the challenges of translating research into market-ready innovations.

While startup narratives are often romanticized with tales of innovation and grit, the reality is that even the most passionate founders can encounter common pitfalls. The key to success lies in learning from these challenges (Alliance of Bioversity International and CIAT, n.d.).

While industry collaborations and startup accelerators play a crucial role in bridging research and market adoption, systemic barriers continue to hinder the widespread scaling of agrifood innovations. The following section examines these challenges and explores key enablers for strengthening innovation uptake.

2. ASSESSMENT OF BARRIERS AND ENABLERS OF INNOVATION UPTAKE

Scaling agrifood innovations requires an enabling environment that bridges the gap between research and real-world application. However, despite significant investments in R&I, many promising innovations fail to achieve widespread adoption due to systemic barriers. This section examines key factors that influence innovation uptake, drawing from EU-supported initiatives, broader global experiences, and insights gathered through expert interviews.

2.1 Barriers to innovation uptake and scaling

While research and innovation (R&I) hold immense potential to transform agrifood systems, several systemic challenges hinder their uptake and scaling, particularly in Africa (European Commission 2022). These barriers span across agricultural value chains, including infrastructure, institutional coordination, and commercialization pathways, ultimately limiting the impact of even the most promising innovations (Adeniyi, Rampa & Menza 2024). Below, we list obstacles to the adoption of innovations according to three types of barriers: institutional and policy barriers; market and investment barriers; and operational and infrastructure barriers.

2.1.1 Institutional and policy barriers

Fragmented coordination and collaboration: Differing agendas, frameworks, and approaches among regions, institutions, and stakeholders impede effective coordination and collaboration. Current funding approaches are often misaligned with the needs of the innovation ecosystem, neglecting crucial aspects like risk-taking and risk management. EU programs like LEAP4FNSSA aim to improve coordination, but siloed approaches between European Commission directorates (e.g., DG RTD and DG INTPA) and the limited integration of African stakeholders highlight the need for stronger governance frameworks (European Commission 2022; D'Alessandro & Knaepen 2023).

Misalignment between European and African R&I priorities: R&I policies and programs often reflect divergent priorities and differing visions of climate-resilient agrifood systems between European and African actors, leading to misalignment in research agendas and implementation strategies. Inadequate co-design of solutions further reduces their local relevance, limiting adoption by end-users (Adeniyi, Rampa & Menza 2024).

Strengthening African ownership—including through joint funding structures and inclusive agenda-setting—remains a crucial step in ensuring that research initiatives lead to meaningful impact (EC 2022; D'Alessandro & Knaepen 2023).

Overlooking equity and power dynamics, including gender considerations: Many agrifood innovation scaling efforts fail to account for power imbalances, social inclusion, and gender dynamics, which can exacerbate inequities in access to resources and opportunities. Research frameworks often emphasize technical and economic factors while neglecting how scaling processes affect women, marginalized groups, smallholder farmers, and informal actors in agrifood systems. The absence of structured mechanisms to integrate equity and gender considerations in innovation systems leads to disproportionate benefits for already powerful stakeholders, while less influential groups struggle to access and benefit from new technologies. Scaling initiatives must recognize and address these blind spots by explicitly considering local social differences, power relations, and agency, ensuring that innovation pathways promote inclusive and just agricultural transformation (McGuire et al. 2024; Körner et al. 2021).

Regulatory and commercialization bottlenecks: Complex regulatory environments and policy inconsistencies make it difficult to commercialize and scale innovations. Inadequate coordination between stakeholders further stalls progress, particularly for technologies requiring policy support or infrastructure investments (Adeniyi, Rampa & Menza 2024). For example, EU-funded initiatives, such as those promoting biofertilizer markets under the DeSIRA program, have faced delays due to fragmented regulatory frameworks in Africa, highlighting the need for harmonized standards across regions.

2.1.2 Market and investment barriers

Limited private sector engagement: Risk aversion and short-termism within the private sector lead to under-investment in agri-food innovation. They limit the development of scalable solutions and narrows opportunities for commercialization. The AU-EU Innovation Agenda highlights the role of the private sector in scaling innovations, but funding mechanisms like DeSIRA often struggle to attract private investment, particularly for high-risk initiatives aimed at smallholder farmers.

Access to finance remains a critical challenge: Limited access to credit and investment options remains a critical challenge for farmers, SMEs, and startups. A combination of factors contributes to this financing gap, including declining public and donor funding, investor risk aversion, and a lack of tailored financial instruments (Adeniyi, Rampa & Menza 2024).

Investors often perceive agriculture as high-risk due to climate variability, long return-on-investment cycles, and market volatility, discouraging private-sector engagement. At the same time, many actors face the "missing middle" problem, where funding is unavailable for medium-scale initiatives that fall between donor grants and large private sector investments.

EU instruments, like Horizon Europe and DeSIRA, provide substantial pilot funding but lack mechanisms to support medium-scale ventures, leaving a critical funding gap for scaling innovations.

2.1.3 Operational and infrastructure barriers

Infrastructure gaps: Inadequate infrastructure - such as electricity, water, transportation, and telecommunications - poses a significant barrier to innovation uptake. Digital infrastructure deficiencies, especially pronounced in Africa, and rural-urban disparities exacerbate these challenges, making it harder for innovations to reach underserved communities. Without reliable infrastructure, even the most effective innovations fail to scale due to logistical constraints, limited internet access, and high operational costs in rural areas. For example, DeSIRA-funded projects often encounter challenges related to inadequate infrastructure when implementing climate-smart agricultural solutions at the local level.

Weak linkages in agricultural innovation systems: Translating research into scalable solutions remains a major challenge also due to weak linkages between research institutions, industry, policymakers, and end-users. Many African universities lack dedicated structures to help commercialize research, connect researchers with industry, or facilitate the creation of market-ready innovations. As a result, promising agrifood innovations often remain within academic institutions, failing to transition into market-ready solutions or reach smallholder farmers. Additionally, a lack of strategic demand from policymakers and agribusiness leaders has hindered the structured negotiation of technology access agreements that could facilitate local innovation and adaptation. Research outputs risk remaining underutilized, limiting their contribution to agricultural transformation without stronger connections between universities, extension services, agribusinesses, and farmer organizations (Adeniyi, Rampa & Menza 2023).

Long development cycles slow down innovation pathways: Agricultural innovations are tied to growing seasons, which inherently require extended development periods. These longer timelines often deter investment and delay the scaling of promising solutions.

Lack of support structures for scaling innovation: Agrifood innovation faces a structural gap in scaling support, particularly for incubators and startups. Unlike sectors such as biotech or software, agrifood innovation is often perceived as high-risk due to regulatory complexities, uncertain returns, and market fragmentation. These obstacles deter venture capital and private investment, which tend to prioritize industries with faster scalability and clearer exit strategies.

Moreover, public-sector support mechanisms, such as dedicated agrifood incubators, blended finance instruments, and accelerator programs, remain underdeveloped, limiting opportunities for startups to access mentorship, funding, and commercialization pathways (Adeniyi, Rampa & Menza 2023).

2.2 Enablers of innovation uptake

Ensuring that agrifood innovations reach scale and generate impact requires a combination of policy support, institutional coordination, market alignment, and user-driven approaches. Insights from EU-funded R&I initiatives, as well as broader experiences from global innovation ecosystems such as CGIAR and private-sector accelerators, highlight key enablers that can enhance adoption and scaling. The following enablers outline practical mechanisms that have contributed to successful innovation uptake and offer guidance for strengthening future programs.

2.2.1 Institutional and policy enablers

Long-term partnerships are essential: Sustained collaboration over time is critical for fostering trust and achieving lasting impact. Successful innovation ecosystems are often built on long-term trajectories that allow actors across research, policy, and implementation spheres to align their goals and co-develop locally relevant solutions. The DeSIRA initiative exemplifies this approach, demonstrating how continuous engagement with partners fosters coherence, relevance, and effectiveness in scaling innovations.

Stronger links to policymaking are crucial: The success of innovations also depends on their integration into policymaking and governance structures. Over the years, several EU programs have increasingly focused on connecting science to policy, as evidenced by the creation of networks like the Pan-African Network for Economic Analysis of Policies (PANAP). Such initiatives enable policymakers to translate research findings into targeted, evidence-based policies that support innovation uptake and scaling.

Multi-stakeholder collaboration enhances uptake: Collaboration between researchers, extension systems, and farmers is a proven driver of innovation uptake. An example of this approach is the EU's work in Malawi, where research institutions partnered with farmer field schools, illustrating how co-creation processes can align innovations with end-users' needs. While promising, such multi-stakeholder models have not yet been widely implemented across EU-Africa partnerships (D'Alessandro & Bizzotto Molina 2023).

Local ownership and leadership foster impact: Placing smallholder farmers and local actors, including women, at the center of R&I efforts ensures that innovations address real-world challenges. Tailored solutions, informed by local knowledge and priorities, are more likely to be adopted and scaled. Strengthening local ownership also means engaging farmers' organizations, women's groups and other grassroots actors in the design and implementation of projects. This inclusive approach ensures that innovations are relevant to the entire community, empowering both men and women to take active roles in the agricultural transformation process. As seen in efforts to integrate farmers into agricultural extension and innovation systems, gender-sensitive approaches are key to fostering equitable impact (D'Alessandro & Bizzotto Molina 2023).

2.2.2 Market and investment enablers

Commercialization pathways accelerate scaling: Scaling innovations requires strong pathways for commercialization, ensuring that research outputs can transition from pilot projects to market-ready solutions. EU initiatives, such as DeSIRA, have demonstrated the importance of supporting innovative start-ups and diverse business models that promote sustainable practices across the value chain. For example, the development of biofertilizers under DeSIRA highlighted the need for enabling environments, including supportive regulatory frameworks, infrastructure, and tailored financial mechanisms. Yet, challenges such as limited access to credit - particularly for SMEs and smallholder farmers—continue to be significant barriers to scaling. Addressing these gaps will require leveraging public and private investments while ensuring that innovations remain accessible to marginalized groups.

Diverse pathways for scaling innovation: Scaling innovation requires tailored approaches that reflect the unique characteristics of different innovations. The EU has supported both technology-driven pathways, which focus on fostering start-ups and entrepreneurs, and ecosystem-driven pathways, which strengthen actors like SMEs, farmers, and local governments. For example, in Uganda's coffee sector, agroforestry systems were scaled through DeSIRA by addressing interconnected challenges, such as market access and policy incentives, benefiting farmers and fostering environmental sustainability.

Improving access to finance is critical: Bridging funding gaps, particularly for SMEs and smallholder-focused solutions, is essential to ensure successful scaling. Many initiatives face the "missing middle" problem, where medium-sized enterprises and growth-stage innovations struggle to secure financing that falls between small grants and large private-sector investments.

Instruments such as blended finance, loan guarantees, and impact investment mechanisms can help de-risk investments in agrifood innovations, making them more attractive to private capital.

2.2.3 Innovation and scaling strategies

Scaling requires a system-wide approach: Innovation cannot scale in isolation. Successful scaling involves addressing three interconnected dimensions: reaching more users (scaling out), embedding innovations in policy frameworks (scaling up), and integrating solutions into local systems (scaling deep). For example, the development of biofertilizers under DeSIRA revealed the need to address regulatory barriers, strengthen market access, and build the capacity of diverse actors - from SMEs and municipalities to farmers. Without such a holistic approach, innovations struggle to advance beyond pilot stages.

Capacity building drives uptake and scaling: The adoption and scaling of innovations depend on empowering a diverse range of actors, including farmers, SMEs, and policymakers. Effective capacity-building efforts must strengthen institutional ecosystems rather than focusing solely on individuals. Initiatives like LEAP4FNSSA and DeSIRA have invested in knowledge-sharing platforms and training programs that enhance the ability of local actors to sustain and scale innovations.

Early market engagement enhances success: Successful innovation requires early market engagement. Waiting too long to refine technologies internally can result in a lack of real-world applicability and failure to meet end-user needs.

Cultivating collaborative teams improves outcomes: R&I projects often fail due to internal conflicts and misaligned goals. Strengthening interdisciplinary collaboration and co-ownership within research teams enhances long-term sustainability.

Aligning innovation with real needs fosters sustainability: Trends in technology often drive short-term interest, but truly scalable innovations align with real needs rather than ill-conceived notions of demand that lack supporting evidence.

Leveraging innovation ecosystems accelerates uptake: Scaling agrifood innovations benefits from structured ecosystems that connect researchers, entrepreneurs, and industry actors. Platforms like EIT Food (see Box 3) demonstrate how fostering entrepreneurship, providing testing environments, and linking startups with established companies can accelerate innovation adoption. While EIT Food primarily operates in Europe, its model could offer insights for similar initiatives in Africa.

Box 3: EIT Food: Driving innovation in Europe's agrifood sector

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EIT Food is a Knowledge and Innovation Community (KIC) established in 2017 under the European Institute of Innovation and Technology (EIT). Its mission is to transform how food is produced, distributed, and consumed across Europe, aiming to improve consumer confidence and health. EIT Food collaborates with over 50 leading companies, universities, and scientific partners, covering the entire food value chain. Key initiatives include:

- Inspire Programs: Designed to develop a new generation of entrepreneurs and innovators equipped to shape a resilient and sustainable food system. These programs offer training in areas such as digital technologies, circular agrifood systems, and sustainable food production.
- Test Farms: A program uniquely designed to support startups and innovators in testing, validating, and showcasing agritech solutions to potential clients, driving technological transformation in agriculture.
- EIT Food Accelerator Network (FAN): Connects impactful agrifood startups with industry-leading corporate and research partners to pilot their technology and drive successful market adoption.

By fostering innovation, education, and business creation, EIT Food aims to build an inclusive and trusted food system. Although its current focus is within Europe, the strategies and successes of EIT Food could serve as a model for similar initiatives in Africa, promoting sustainable agricultural practices and food security (EIT Food, n.d.).

As these enablers illustrate, strengthening innovation ecosystems, aligning market incentives, and fostering policy and institutional coordination are essential for scaling agrifood innovations. The next section concludes the brief outlining key recommendations to further enhance these efforts.

CONCLUSION AND RECOMMENDATIONS

Fostering innovation uptake in agrifood systems is critical to enhancing productivity, sustainability, resilience, and competitiveness, especially as global challenges such as resource scarcity and climate change intensify. Collaborative efforts that translate science-based insights into practical improvements in food systems can significantly contribute to both human nutrition, ecological health, and economic growth.

To further enhance the uptake and impact of food system innovations, the following recommendations outline actionable steps for the EU and its partners to address persistent barriers, strengthen local ecosystems, and sustain long-term investment in research and innovation:

1. **Maintain strong EU investment in food systems R&I**: Achieving sustained impact in food system innovation requires predictable, long-term funding. As the EU navigates evolving priorities in its international cooperation agenda (Veron & Sheriff 2024; Sheriff & Veron 2024), ensuring continuity in funding mechanisms—through Horizon Europe, Global Gateway, and future instruments—will be critical for scaling innovations. Ensuring long-term investment, including through an ambitious FP10, is critical to bridging the gap between research and application, supporting African-led innovation ecosystems, and sustaining the uptake of agrifood solutions. Maintaining dedicated R&I investments in food systems will support both African and European priorities, strengthening resilience, sustainability, and economic development. A strong narrative is needed to position food system innovation as a driver of mutual economic and sustainability benefits, ensuring continued investment in innovation scaling.
2. **Strengthening synergy between EU institutions**: It's important to improve coordination between DG RTD and DG INTPA to align priorities and roles in supporting food systems innovation. DG RTD should focus on generating knowledge and designing innovation platforms, while DG INTPA can emphasize scaling and ensuring multi-stakeholder approaches.
3. **Strengthen knowledge platforms and learning mechanisms**: Strengthen multi-actor platforms to facilitate dialogue and knowledge sharing between researchers, policymakers, and end-users. Improved monitoring and evaluation systems are critical to tracking what works, offering insights to improve and scale successful initiatives.

4. **Prioritize long-term, patient capital**: Scaling food systems innovations requires financial mechanisms tailored to local realities. Patient capital—investment that prioritizes long-term impact over short-term financial returns—will be essential for scaling food system innovations. This type of funding allows for the iterative development and testing needed in complex sectors like agriculture, where solutions take time to reach maturity and require flexibility in financing. Funding streams should address both public and private sector needs, while also enabling medium-range credit solutions for SMEs and farmers often excluded from traditional financing mechanisms.
5. **De-risk private sector investments**: Leverage financial instruments such as blended finance and guarantees to reduce the risks of investing in African agrifood systems innovations. These instruments can help attract private-sector capital, particularly for scaling innovations that are otherwise deemed too risky for traditional financial institutions.
6. **Support market pathways and commercialization**: Develop dedicated EU-African R&I funding streams that explicitly include pathways to market, such as business incubation and entrepreneurship. Leveraging venture spaces and innovation hubs, particularly in Africa, and providing mentorship, funding, and scaling support to startups and SMEs, bridging the gap between innovation and market adoption. These businesses must not only drive economic growth but also contribute to purposive transformational change in food systems, ensuring that innovations address sustainable development goals and long-term social, environmental, and economic impacts.
7. **Embed local ownership and leadership, with a focus on smallholder farmers and underserved communities**: Ensure that African actors, including governments, researchers, and private sector entities, are meaningfully involved in co-designing and leading R&I initiatives. Programs should be tailored to local contexts, aligning with community needs and priorities while fostering inclusive governance and equitable partnerships. Smallholder farmers, who remain the backbone of African agrifood systems, must be at the center of innovation efforts. Innovations must address their specific needs, such as access to credit, technology, and markets. Strengthening farmer organizations, women's groups and advisory services will enhance the reach and relevance of innovations.
8. **Adopt a holistic ecosystem approach**: Innovations must scale within supportive ecosystems. Addressing regulatory frameworks, infrastructure gaps, and capacity development for actors along the value chain is crucial. For example, scaling agroforestry requires not only promoting tree planting but also developing complementary value chains and markets to ensure economic viability for farmers.

Successfully scaling agrifood innovations will require a more coordinated and coherent approach across EU instruments, stronger engagement with African-led initiatives, and investment in long-term innovation ecosystems. Ensuring greater coherence, alignment, and coordination across the EU's diverse R&I mechanisms is critical to achieving sustained impact.

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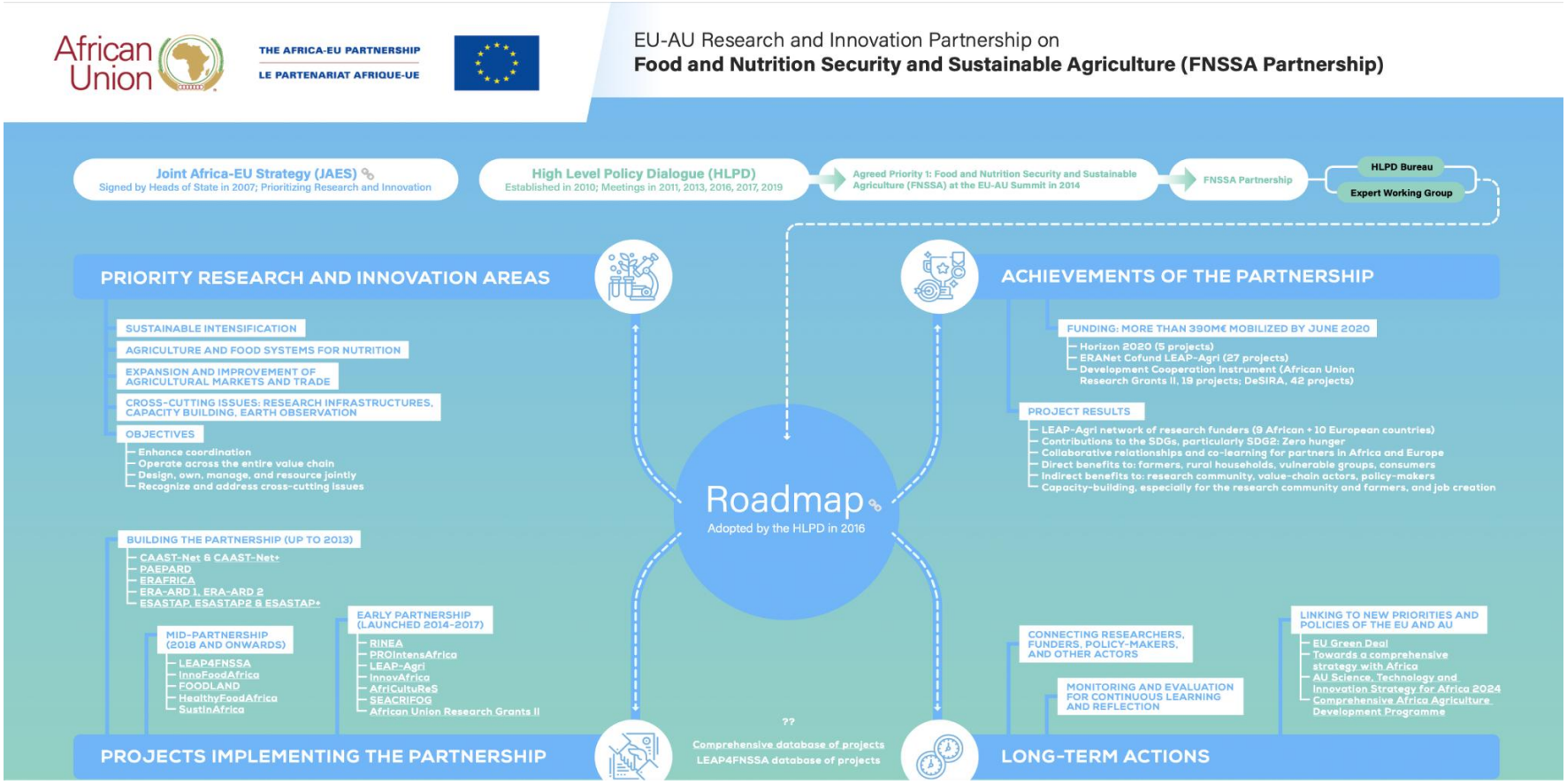
ANNEX

Figure 1: Overview of FNSSA partnership modalities



Source: EC (2022)

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