AFRICA KNOWLEDGE PLATFORM

Turning ideas into opportunities

How geographical analyses support European Commission efforts to unlock tangible impact through the AU-EU Innovation Agenda

European Commission

Africa's and Europe's development opportunities depend on science, technology and innovation (STI). But STI won't automatically lead to new opportunities without concerted effort. This story describes how the African Union and the European Union aim to unlock and scale up tangible growth through the AU-EU Innovation Agenda. Existing projects for food and nutrition security and sustainable agriculture (FNSSA) were prioritised to support new ventures across the whole food value chain. As the most mature partnership of its kind, the lessons from FNSSA will guide similar future efforts in the energy and healthcare sectors.

Ideas for development

History marches in lockstep with the growth in science, technology, and innovation (STI). But the path between new ideas and real-world impact is rarely straightforward. Sometimes good ideas stay unrecognised for decades. Modern development challenges are **too urgent to let good ideas lay dormant** for years before being deployed to solve real world problems.

Shortening the gap between developing a new active ingredient in the laboratory and developing it into a drug accessible to patients in need could save thousands of lives. The latest solar panels will only mitigate climate change by moving from university drawing boards to the roofs of factories and households. Farmers must move drought-resistant seeds from experimental greenhouses to cultivated fields before they can feed the hungry-resistant.

https://youtu.be/oHxpvPPfBK8

This video showcases how the AU-EU Innovation Agenda intends to help local entrepreneurs address the world's biggest challenges.

With less than 10% of crop production under irrigation, **most crops in the region are vulnerable to unfavorable precipitation**. Approximately 30 million people in the SADC region suffered from food insecurity between 2014 and 2018. Food insecurity is likely to intensify as recent climate change models predict that droughts and floods will become more frequent and more extreme in many parts of the region.

A fundamental challenge for STI policy is streamlining good ideas to tangible impacts.

The African Union (AU) and the European Union (EU) understand the weight of this challenge . Their cooperation in STI is governed by the AU-EU High-Level Policy Dialogue on Science, Technology and Innovation (HLPD on STI), which agreed to focus on four priority areas: (1) Public Health, (2) Green Transition, (3) Innovation & Technology, and (4) Capacities for Science.

Together, they have designed the AU-EU Innovation Agenda that aims to translate Research & Innovation (R&I) into tangible positive impact on the ground: products, services, businesses and jobs in Africa and Europe. Published as a working document in February 2022, the final version of this Agenda will be presented for adoption at the second AU-EU R&I Ministerial Meeting on 13 June 2023 in Addis Ababa. During 2022, the AU and the EU embarked on an extensive stakeholder dialogue process to ensure that the final version of the Agenda includes diverse and comprehensive feedback and inputs.

"The new paradigm of AU-EU research and innovation cooperation is that of creating tangible impact on the ground from the research jointly invested in".

An Innovation Agenda

After a thorough engagement process, the AU-EU Innovation Agenda formulated four foundational objectives to ensure that creative ideas turn into a better future. Keep scrolling to explore each of these four objectives.

Objective 1: Make it real

The innovation agenda aims to **translate innovative capacities and achievements directly into tangible outputs**. Ideas by AU and EU researchers from the public and private sectors must be converted into real opportunities that support sustainable growth and jobs, especially for young people.

There needs to be **close cooperation between the AU and EU** to jointly deliver on the Sustainable Development Goals (SDG), with special emphasis on:

- Decent Work and Growth (SDG 8)
- Industry, Innovation and Infrastructure (SDG 9)
- Climate Action (SDG 13)

Objective 2: Generate impact by design

The AU-EU Innovation Agenda proposes to **foster new innovation ecosystems** - and strengthens those that already exist - to enhance impact on the ground for people and their livelihoods.

Hard-earned knowledge needs to be shared. Technology, experiences and human resources must be transferred, both within Africa and between Europe and Africa.

Objective 3: Strengthen people, communities, and institutions

People are central to the AU-EU Innovation Agenda, which aims to **develop sustainable, long lasting and mutually beneficial partnerships** between the AU and the EU countries.

This includes partnerships between higher education, and R&I institutions. Such collaborations are the foundation for knowledge economies and societies, making them more resilient to unforeseen crises.

Objective 4: Learn, monitor, and scale up

The AU-EU Innovation Agenda must **nurture and scale-up existing programs and projects** between AU and EU partners.

The knowledge triangle of **education, research and innovation should be strengthened** through public participation, transparency, and inclusion. It is particularly important to include young people to stop the brain-drain from Africa.

Capacity empowerment, advancing knowledge, and promoting entrepreneurship will be central to these goals.

As is always the case with policy, **the success of the AU-EU Innovation Agenda depends on its implementation**. With a view to developing a scalable approach to later be expanded to other priority areas of the AU-EU Cooperation in R&I, the AU and the EU jointly agreed to conduct a pilot mapping focusing on joint AU-EU projects of the **AU-EU R&I partnership on food and nutrition security and sustainable agriculture (FNSSA)**. This forms part of the broader joint priority area of the "Green Transition".

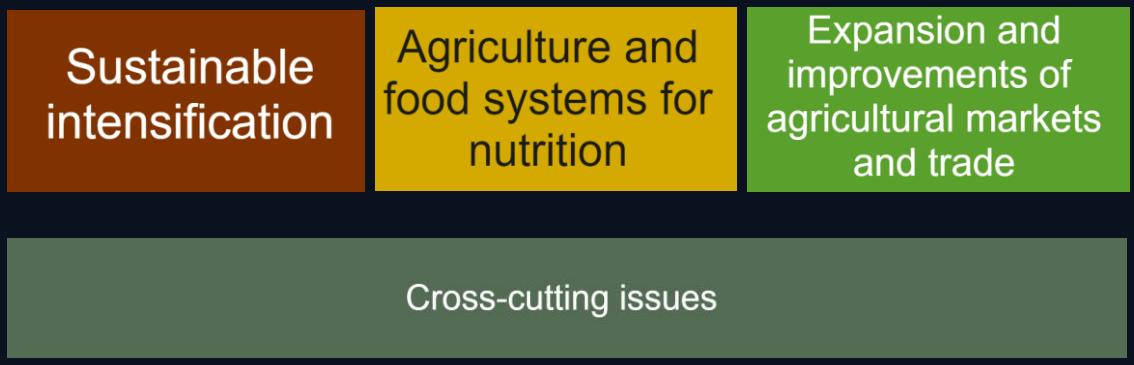
FNSSA represents the **longest and most mature R&I partnership between Europe and Africa**. It was, therefore, the perfect candidate for a pilot on how to implement the AU-EU Innovation Agenda.

For more information about R&I on food and nutrition security, visit the dedicated topic on the Knowledge Centre for Global Food and Nutrition Security **.**

FNSSA

LEAP4FNSSA (Long-term EU-AU research and innovation partnership for FNSSA) is a bi-continental international research consortium that aims to create synergies between R&I programmes, streamline collaboration, and engage in high-level policy dialogue. As a "network of networks", LEAP4FNSSA maintains a database of active and completed FNSSA projects .

Projects in this database are meant to **cover the whole agricultural value chain**. The FNSSA roadmap defines the agricultural value chain across four thematic areas.



Sustainable intensification

The first thematic area is sustainable intensification. Africa and Europe share the challenge of **producing more food without worsening – and preferably reducing – environmental impacts**.
Innovation is needed to produce more crops, livestock and fisheries, while using less water, fertiliser, and chemical pesticides. The pursuit of higher yields should not jeopardise the quality of soil and ecosystem services.

Food systems and nutrition

The second thematic area is food systems and nutrition. Although producing more food is an important first step, it won't improve people's lives on its own.

Many communities in Africa and Europe have diets high in cheap, energy-dense foods. When combined with micronutrient deficiencies, this contributes to a higher prevalence of undernourishment, obesity and non-communicable diseases.
Thus, innovation can ensure that when more food is produced, it is **nutritious, affordable and sensitive to consumer preferences**.

Agricultural markets and trade

The third thematic area relates to agricultural markets and trade. **Nutritious food needs to be** accessible **and affordable to enhance human wellbeing**.
Agriculture remains the main source of economic growth in many parts of Africa. So, innovation can ensure that local growth and enhancement of value chains can plug into global markets, without becoming vulnerable to macroeconomic forces, like inflation and supply chain disruptions.

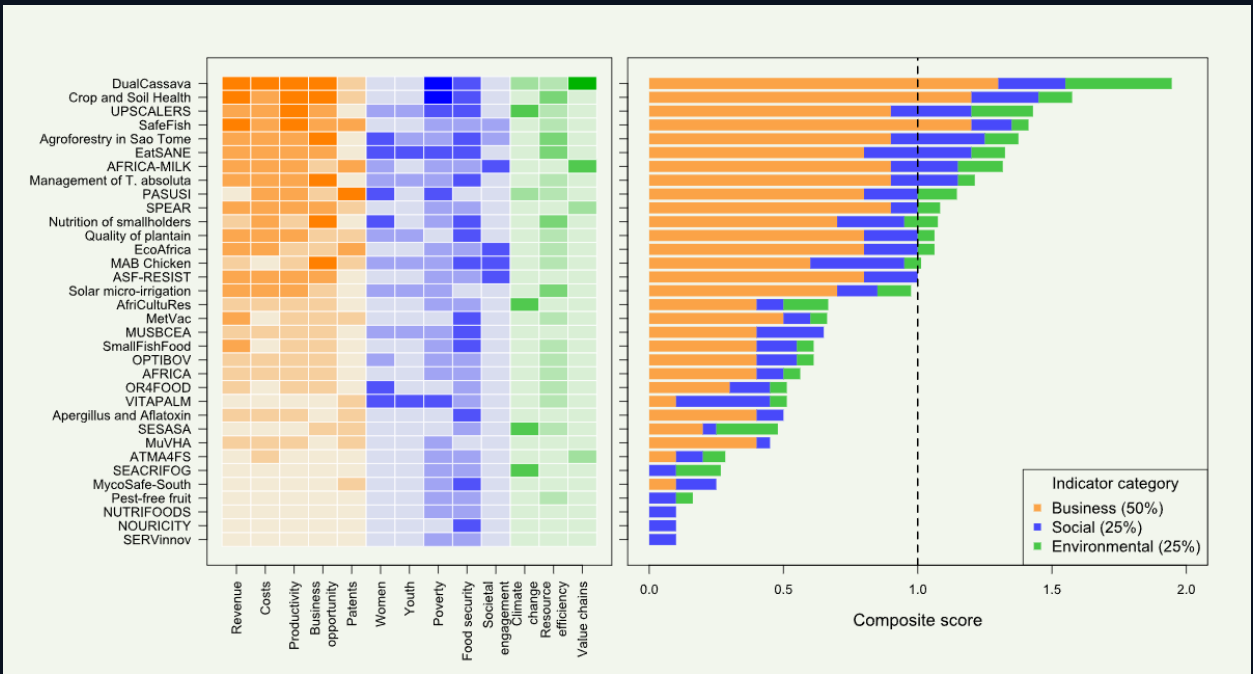
Cross-cutting issues

The last thematic area includes cross-cutting issues that relate to all parts of the agricultural value chain.
This includes **coordination between partners, innovation processes, and collaboration capacities, all while tailoring solutions to local socio-economic and cultural contexts.**

Currently, the LEAP4FNSSA project database contains roughly 450 projects. Each of these projects include unique sets of partner institutions, are at various stages of completion, and have received funding from different sources.
While such variety presents a tremendous opportunity, it also makes it infeasible to guide all the projects to tangible enterprises using a one-size-fits-all approach. Projects need to be prioritised using a systematic approach, so that those with the highest potential to lead to real-world impact can received tailored support.

Ranking FNSSA projects

During 2021, the European Commission Directorate-General for Research and Innovation led a process assessing **the 261 projects included in the FNSSA database** at the time. This list excluded many new projects that were subsequently added to the database, but which are still only in their early stages. These 261 projects were screened according to their business and innovation potential, based on which a subset of **47 projects were further filtered qualitatively based on their project outputs**. From these, 34 projects were identified based on the fact that they had tangible outputs with sufficient detail to be scored using Key Performance Indicators (KPIs) of potential impact on business, society, and the environment. The **34 projects were included in a quantitative assessment**.



Each of the 34 projects were evaluated according to five indicators of business potential. These include indicators for:

- **Revenue change**: does the project have the potential to increase producers' revenue.
- **Cost**: does the project have the potential to reduce production costs.
- **Productivity**: will production increase relative to inputs.

- **Business opportunity**: does the project have the potential to create new commercial opportunities.
- **Patents**: can the Intellectual Property from the project be secured and patented.

Indicators with higher scores are shown by darker shades of orange.

The average of the five business indicators was compiled into a composite score that also included social, and environmental indicators.
The variables of business potential carried a 50% weight in the composite score.

Next were five variables of potential social impact:

- **Women**: will the project improve the status and living conditions for women.
- **Youth**: does the project create economic opportunities for young people.
- **Poverty**: does the project have the potential to alleviate poverty.
- **Food security**: will the project improve the availability, nutrition, and safety of food.
- **Social engagement**: will civil society participate in the project.

Darker shades of blue correspond to high scores for the five social indicators.

Social indicators were also added to the composite score. The average of these five indicators contributed 25% to the final score.

The potential of projects to improve the environment was captured using three indicators:

- **Climate change**: will the project potentially enhance local resilience to climate change.
- **Resource efficiency**: does the project have the potential to use natural resources more efficiently.
- **Value chains**: can the project reduce the environmental footprint across the whole supply chain, from farm to fork.

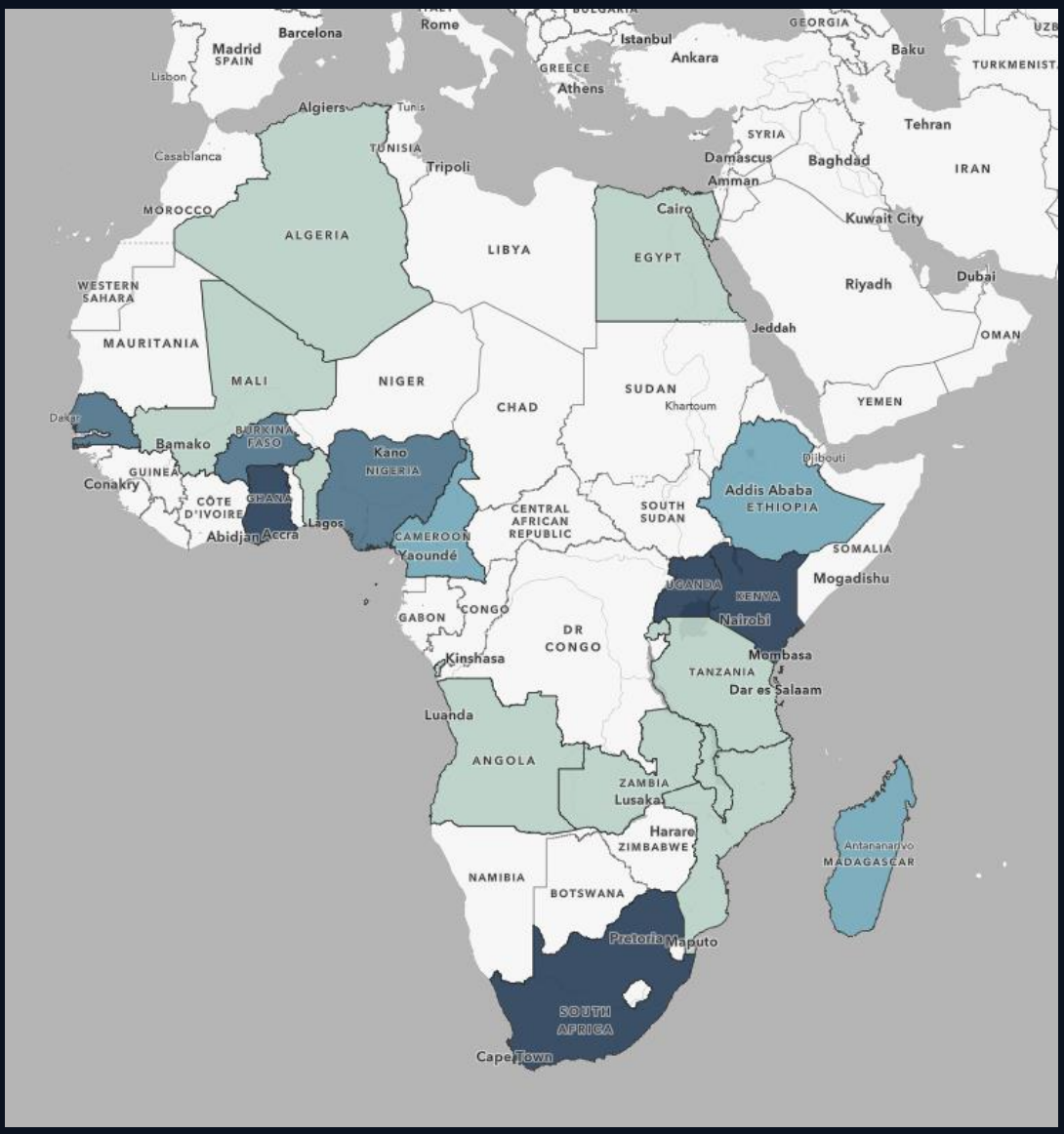
These three indicators are shown to the left, where darker shades of green correspond with higher scores.
The average of the environmental indicator contributed 25% to the final composite score.

The 34 projects were ranked based on their final composite scores.

Only 14 projects scored above 1 and these top-ranked projects were entered into a pipeline to identify their **unmet needs** to propose **practical next steps** to unlocking their potential.

Adding value with geography

Comparing geographical synergies between FNSSA projects may be a way to mobilise resources in a strategic way. The Joint Research Centre's Africa Knowledge Platform mapped the 14 FNSSA priority projects to identify regional patterns to inform localised support strategies.



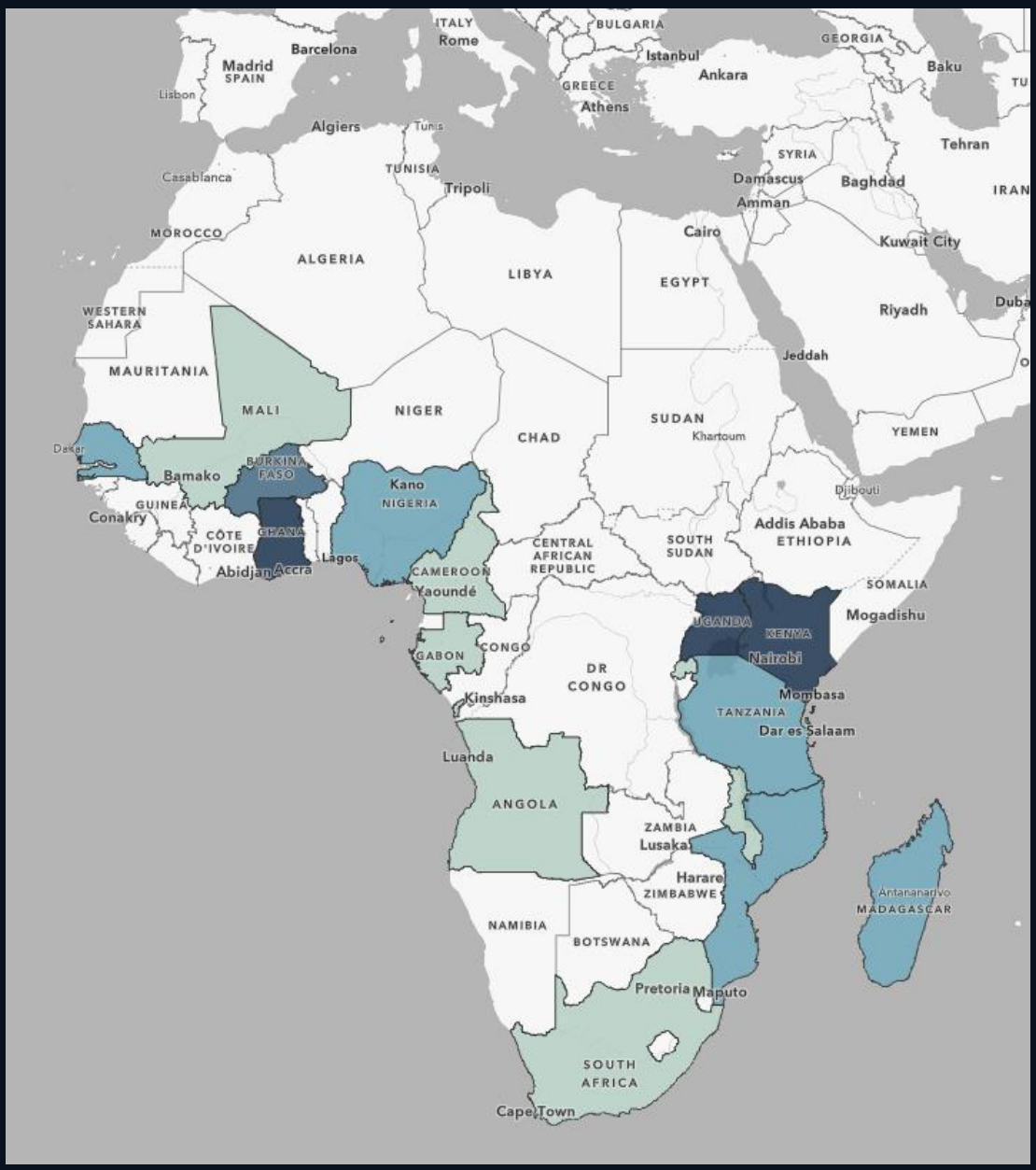
This map shows how the **34 FNSSA projects on the initial ranking list** are distributed across Africa. Darker shades of blue correspond to countries that contain more projects (note: one project can occur in more than one country). Uganda (14), Ghana (11), Kenya (10), and South Africa (9) were the countries with the most projects.

A slightly different pattern emerged when considering only the **14 top-ranked FNSSA projects**.

In total, 17 countries are involved in the 14 top-ranked projects. Uganda (6), Kenya (5), and Ghana (4) are still the countries with the most projects, but Burkina Faso (3) replaces South Africa (1) as the country with the 4th most projects.

Prioritising projects this way identified two regional project-clusters of neighbouring countries: one in East Africa (centred on Uganda & Kenya) and another in West Africa (centred on Ghana & Burkina Faso).

The prioritisation may also have avoided focusing investment in South Africa, which contains many projects, but only few that rank highly in terms of strategic investment.

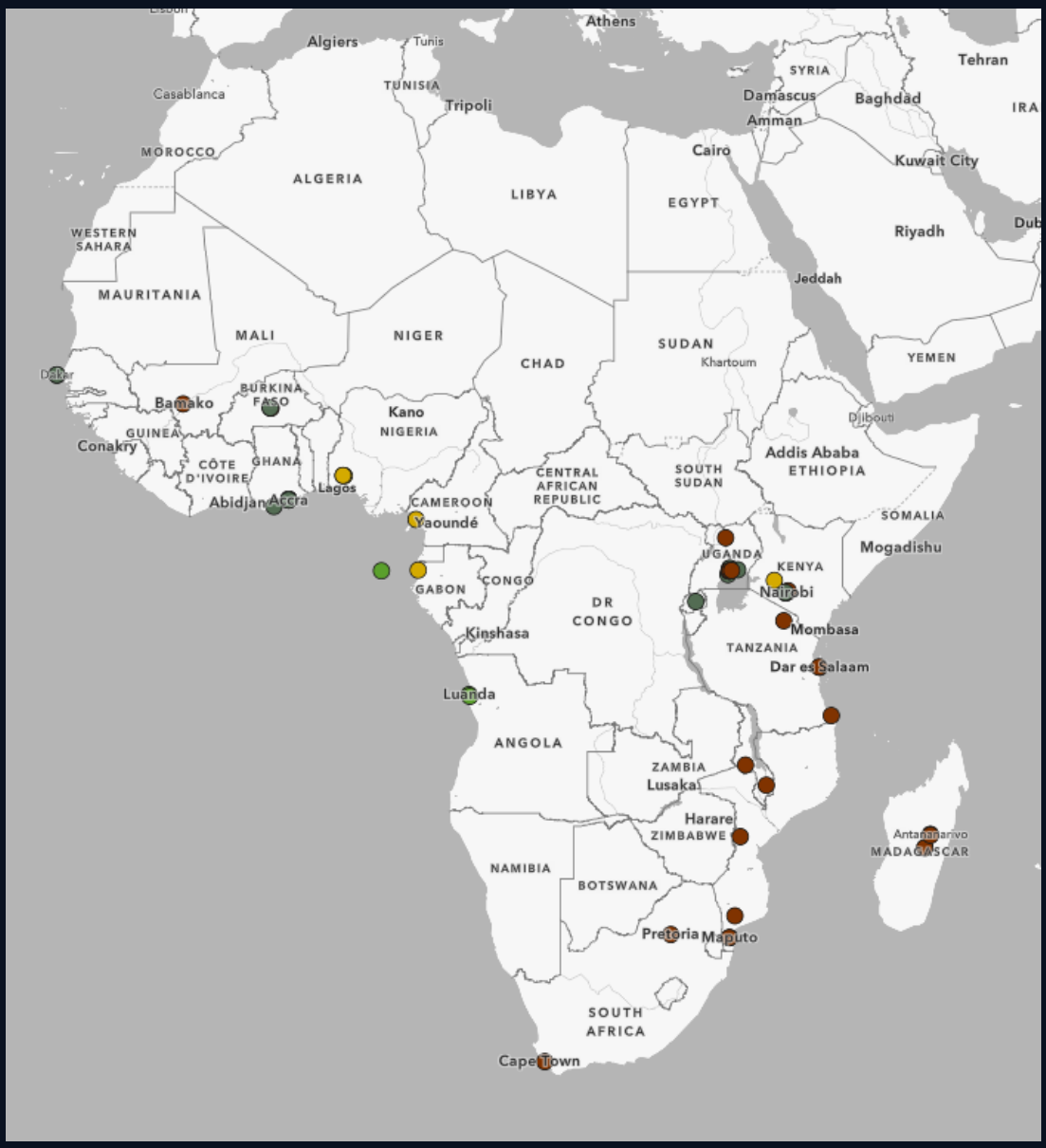


While country-level data are useful, FNSSA projects are carried out by people working within institutions.
This map shows the **50 different institutions involved in each of the 14 prioritised FNSSA projects**. Here, the colours represent different projects.
Go ahead, click on the institutions to find out more about them.

Because we knew which institutions participate in each FNSSA project, we could easily filter these based on where they received their initial project funding:

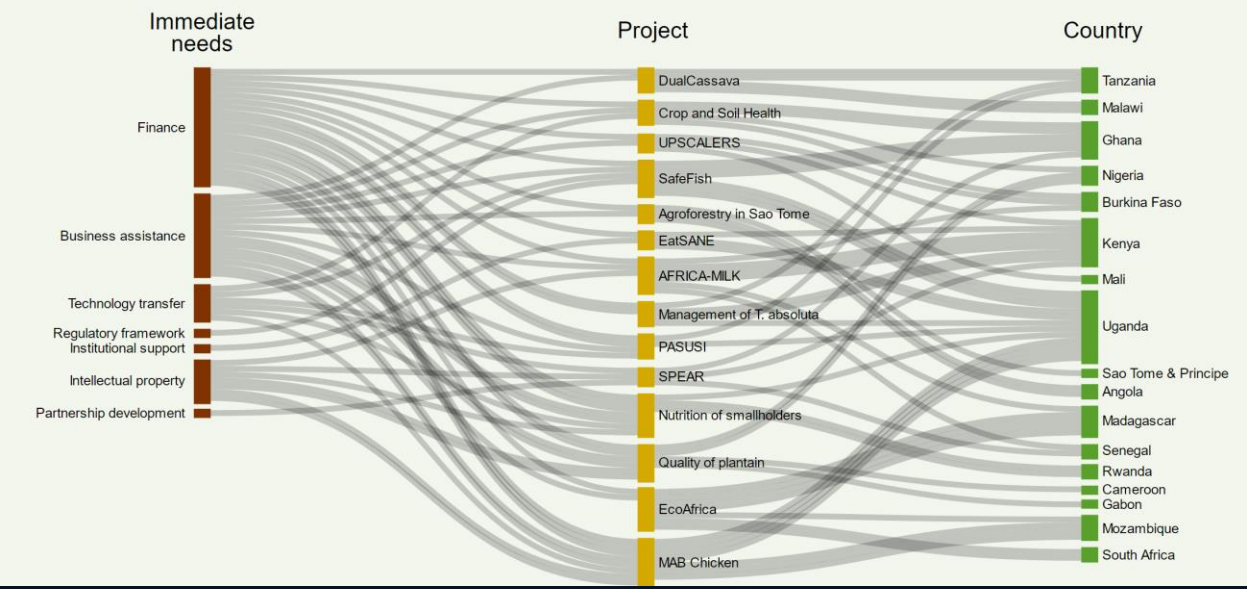
Institutions that were funded by AU Research Grants II (**red**), ERA-NET Cofunding with LEAP-Agri (**blue**) European Commission DG INTPA (**green**).

Similarly, we could identify how institutions contribute to each of the thematic priority areas of the FNSSA value chain:



Identifying synergies

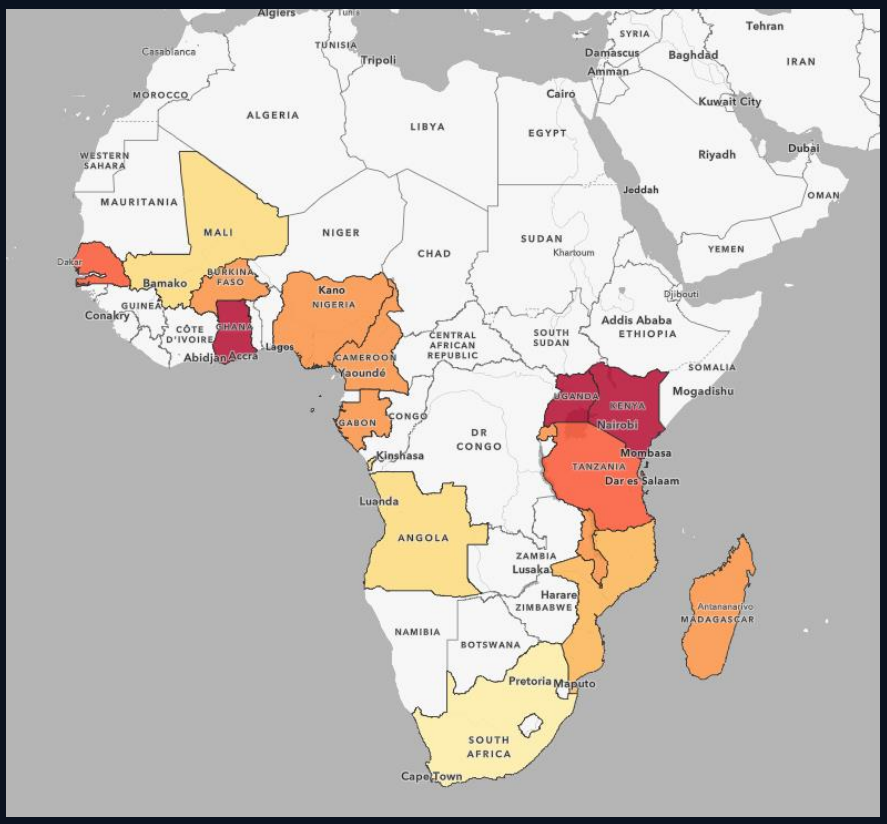
By understanding how projects are carried out by institutions nested within countries, the Africa Knowledge Platform makes it possible to explore synergies that could maximise the impact of strategic investments.
One way to do this is by focusing on the general needs identified by each project in order to meet their full potential.



This graphic shows the **most common needs for each FNSSA project.**

Additional finance is the most frequently cited need, followed closely by business assistance. Technology transfer and Intellectual Property needs were also commonly required by the projects. The need for new regulatory frameworks, institutional support, and partnership development were each identified by only one of the 14 FNSSA projects. Knowing these needs could help tailor strategic investment in the most efficient way. For example, let us imagine that there is an investor or donor that focuses specifically on providing business assistance to new agricultural start-ups. By starting from their unique point of expertise, we can identify FNSSA projects that would benefit from their support. So, for this investor focusing on providing business assistance, we could supply a list of 11 FNSSA projects that would benefit from their support.
In this example of an investor with a specific interest in supplying business assistance expertise, we can also identify which countries (or areas thereof) stand to benefit from their support.

Here, the 11 FNSSA projects that would benefit from business assistance have partners in every one of the 17 priority countries. Thus, a small intervention in a specific area could potentially leave a positive footprint across a large part of Africa. Each project includes indicator data on their potential business, social, and environmental impact, which can be used to tailor an investment strategy to align with the investor's own priorities. This prioritisation process can also be done in reverse. Some investors or donors might **already be active in specific countries**, and would seek out investment opportunities compatible with their existing geographic strategies.
The FNSSA prioritisation process makes it possible to start from an African country and identify how best to help create new opportunities in the agri-food sector.



The FNSSA prioritisation process identified immediate next steps for each of the projects. These are the most urgent interventions needed to send projects on the path of becoming a tangible business ventures.

The map above shows number of next step interventions needed by each African country. Darker shades of red correspond with countries that require more interventions and, understandably, these tend to be the countries with more FNSSA priority projects.

Next steps for AU-EU Innovation

Prioritising FNSSA projects is important to invest strategically and bring life to tangible opportunities in the food- and agri-sectors, but it is also valuable as a pilot for other sectors.

This means that the lessons learnt from FNSSA should be applied to other areas of the AU-EU cooperation in R&I; such as the Climate Change and Sustainable Energy (CCSE) part of the priority area of the Green Transition, or Public Health.

Applying the lessons from FNSSA

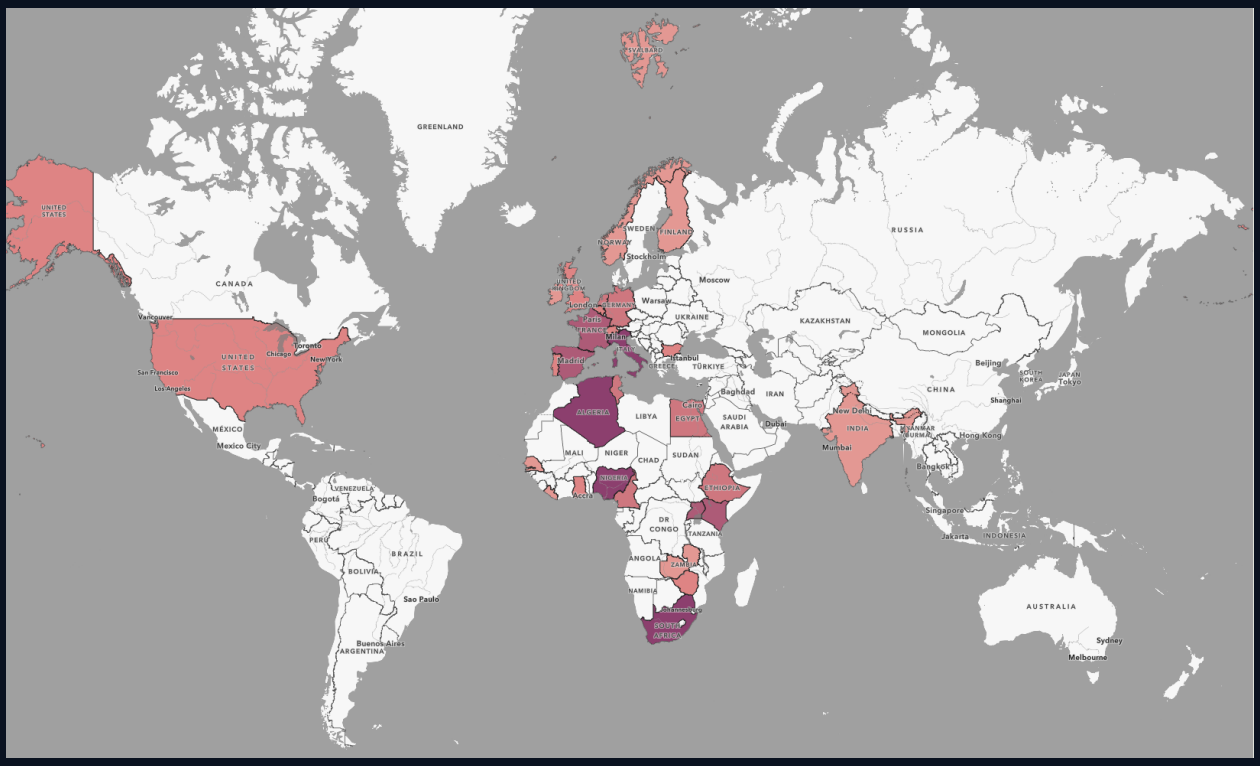
In future, the experience gained from FNSSA pilot will be extended to other immediate priorities areas, such as:

- For the area of Public Health, projects of the partnership of **European and Developing Countries Clinical Trials Partnership (EDCTP**). Established in 2003, this partnership represents the main initiative of the EU-AU cooperation in global health research. It aims to enhance research capacity and accelerate the development of novel or improved tools for the diagnosis, treatment and prevention of poverty-related infectious diseases, including emerging and re-emerging diseases in sub-Saharan Africa.
- For the area of the Green Transition, projects of the **EU-AU R&I Partnership on Climate Change and Sustainable Energy (CCSE).** Launched in 2017, this partnership supports projects on climate services, renewable energy and energy efficiency to bolster adaptation and mitigation efforts in various sectors in Africa. It currently includes collaboration between 20 African and 11 European countries and focuses on two pillars: (1) adapting to and mitigating climate change through an integrated knowledge approach, and (2) renewable energy and energy efficiency.

As the pioneering initiative, the mapping of FNSSA serves as a template on how to support public health and climate action to bring the AU-EU Innovation Agenda to life.

Shared commitment to the AU-EU Innovation Agenda

There is considerable ownership and enthusiasm around the AU-EU Innovation Agenda. We know this because the agenda has been exposed to a thorough consultation process that included the feedback of 303 stakeholders from 41 different countries. The map below shows the global spread of respondents in the consultation process.



You can download the consultation report at:
https://research-and-innovation.ec.europa.eu/system/files/2022-12/2022-10_AU-EU%20Innovation%20Agenda_Public%20Consultation_Report-v2.pdf

The response from stakeholders was positive. More than half of respondents agreed that the **four objectives of the AU-EU Innovation Agenda** (Make it real; Impact by design; Strengthen people, communities and institutions; Learn monitor and scale-up) were "**Highly Important**". Only 1 person felt that the objective to Strengthen People was "Not Important At All" and just 2 people felt the same way about the objective to provide Impact by Design. With the exception

of this tiny minority, all participants were uniquivocal about the importance of the AU-EU Innovation Agenda.

This enthusiasm culminated in a unique event held in Nairobi during November 2022. The AU-EU Innovation Agenda Stakeholder Event brought together everyone interested in turning unique ideas in real opportunities.

The Stakeholder Event included several strategic training and information sessions. The Africa Knowledge Platform was presented during one of these sessions - Open Science & Data Science - which gave participants the chance to familiarise themselves with the platform's features and functionality.

Conclusion

In the past, new scientific ideas had to lead to tangible impacts organically. This process could be slow and unpredictable. By working together, the AU and the EU aim **to close the gap between ideas and opportunities**. Starting in the food and agricultural sector, the AU-EU Innovation Agenda serves a blueprint for how to use research and innovation to tackle the most pressing issues facing people across our two continents.

https://africa-knowledge-platform.ec.europa.eu/

This document has been originated from a StoryMap compiled in the context the European Commission's Africa Knowledge Platform.

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