



Roadmap of the AU-EU Innovation Agenda

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Overview

The present Roadmap is to be considered as a “living document” supplementing the final version of the African Union (AU) – European Union (EU) Innovation Agenda. It consists of five sections illustrating respectively: (i) the governance of the Innovation Agenda; (ii) the Monitoring & Evaluation methodology; (iii) an inventory of relevant past and present AU and EU initiatives on Science, Technology and Innovation (STI) on which the Innovation Agenda will build; (iv) a summary of the outcome of the mapping of joint AU – EU Research and Innovation (R&I) projects in the area of Food and Nutrition Security and Sustainable Agriculture (FNSSA), assessed for their innovation and business potential and unmet needs to be addressed for their potential scale up; and (v) a toolkit for initiatives that will enable the implementation of the short-, medium- and long-term actions of the Innovation Agenda.

I. Governance of the AU-EU Innovation Agenda

The coordination of the implementation of the AU-EU Innovation Agenda will be governed under the aegis of the AU-EU High-Level Policy Dialogue (HLPD) on STI. Adopted during the 3rd AU-EU Summit in Tripoli in 2010 as an important element of the Joint Africa-EU Strategy (JAES), the HLPD represents the forum where regular exchanges on R&I policy take place and long-term priorities to strengthen this cooperation are established. It is co-chaired by the European Commission (EC) Directorate General for Research and Innovation (DG RTD) and the AU Member State holding chair of the Specialised Technical Committee (STC) on Education, Science and Technology of the AU, which generally rotates on a two year-basis. The HLPD Bureau will mandate a dedicated “Ad-hoc Innovation Agenda Working Group”, that will convene regularly (e.g. in between meetings of the HLPD Bureau) to monitor the progress on the implementation of the Innovation Agenda. Co-chaired, like the HLPD Bureau, by an AU and an EU representative, the Ad-hoc Innovation Agenda Working Group will also comprise a dedicated “Task Force” group, managing more operational aspects pertaining to the development and implementation as well as the Monitoring and Evaluation (M&E) of the Agenda. Aiming for a well-balanced representation of AU and EU Member States, Commissions and Institutions (e.g. Implementing Agencies), the Task Force will report to the Ad-hoc Working Group and to the HLPD Bureau. The HLPD Bureau, in turn, reports to the AU-EU Senior Official Meeting (SOM), which represents the ultimate decision-making body at ministerial level.

II. Monitoring & Evaluation (M&E)

Following the adoption of the AU-EU Innovation Agenda, the attainment of its four objectives and the implementation of its actions will be monitored and evaluated on a regular basis. This will allow for the timely review of the implementation of the Agenda while providing opportunities to correct or redirect the implementation on a solid evidence base, according to the lessons learnt. Implementation of the actions will be aligned with the monitoring of the implementation of the policies on both sides, including the ‘Global Approach to Research and

Innovation' and the AU Agenda 2063, and the AU STISA policy. The approach will follow the impact-oriented monitoring (IOM) methodology of R&D projects/programmes¹.

The overall follow-up of the M&E process will be handled by the AU-EU HLPD on STI to allow the EC and the AU Commission to interact with key players to be involved in the tracking of the AU-EU Innovation Agenda's achievements.

More in detail, below follows an overview of Key Performance Indicators (KPIs) to be assessed to monitor each of the 4 objectives of the Innovation Agenda, to periodically measure progress towards achieving them, allowing for learning along the process (thus providing for a "learning" component within the M&E methodology proposed). These KPIs aim to be specific, measurable, achievable, relevant, and time-bound (SMART); they will be quantitative by nature. They will cover various dimensions of the AU-EU Innovation Agenda, including research and development, innovation capacity building, technology transfer, business incubation, investment and job creation. Moreover, they will include technological, socio-economic, entrepreneurial and environmental indexes.

The KPIs will be measured on a yearly basis, starting at the end of the first year of implementation of the AU-EU Innovation Agenda. A "toolkit" mechanism will be developed and deployed to identify and enrol initiatives (e.g. projects, programmes, partnerships, scholarships, etc.), compliant with the objectives of the AU-EU Innovation Agenda, that will enable the implementation of the actions foreseen by the Agenda. This process will also allow access to data for KPIs' measurement. Data gathering will rely, as much as possible, on existing collection and analysis efforts and, when necessary, on ad-hoc surveys performed in collaboration with research performing institutions and other implementation partners.

1. Objective 1: Make it real

[i.e. *"Translate innovative capacities and achievements of AU and EU researchers and innovators across sectors (e.g. public, private, non-profit entities, civil society organisations and individuals), directly into tangible outputs, thereby supporting sustainable growth and jobs, in particular for the youth. In this process, ensure that also local innovation, grassroots' projects and less codified forms of knowledge are taken into consideration"*].

1. Number of initiatives launched to enable the implementation of the actions foreseen by the AU-EU Innovation Agenda for sustainable growth, jobs and capacity building including those focusing particularly on youth, women and persons with disabilities (quantitative).
2. Amount of funding, either public or private, allocated to support initiatives aiming to implement the actions foreseen by the AU-EU Innovation Agenda (quantitative).
3. Number of tangible outputs [e.g. companies (e.g. enterprises, start-ups, incubators and innovation hubs, etc.), products, services, associations, etc.] generated as a result of AU-EU Innovation Agenda initiatives (quantitative), including for example:
 - a. Number of projects with a Technology Readiness Level (TRL) higher than 6 (i.e. "Technology demonstrated in relevant environment") launched.
 - b. Number of new companies, start-ups, incubators and innovation hubs, associations created.

¹ Developed by FP7 funded EVAL-Health project of which AUDA-NEPAD was a consortium member.

- c. Number of patent applications and of patents granted and licensed (in/out).
- d. Number of trademarks deposited.
- e. Number of co-authored AU-EU R&I publications.
- f. Number of commercialised outputs (e.g. products and services).

Objective 2: Generate impact by design

[i.e. *“Foster and/or strengthen innovation ecosystems to enhance socio-economic impact on the ground through the exchange of knowledge, technology, competences, human resources and experience between and within AU and EU countries. To achieve this, openness in science and innovation will be enhanced, while entrepreneurship, joint ventures, private-public partnerships, support to incubation and access to funding for R&I, will be strengthened, aiming for a just digital transition”*].

1. Number of joint AU-EU innovation ecosystems and networks (e.g. connecting innovation hubs and incubators/accelerators) created or strengthened.
2. Number of knowledge exchange and experience-sharing initiatives launched (e.g. mobility programmes, visiting fellowships, scholarships, training courses and workshops, etc.) between and within AU and EU countries.
3. Number of human resources (i.e. scientists, researchers, innovators/entrepreneurs, students) exchanged between and within AU and EU countries.
4. Potential positive socio-economic impact on the ground as a result of AU-EU Innovation Agenda initiatives (quantitative), including for example:
 - a. Number of jobs created.
 - b. Employment rate of trained staff (benefitting from programmes illustrated in KPIs 1-3: from networks to exchange and experience-sharing initiatives).
 - c. Graduation rate among students and professionals trained through the networks and exchange and experience-sharing initiatives illustrated above.
 - d. Percentage of postgraduate degrees among students and professionals trained through the networks and exchange and experience-sharing initiatives illustrated above.
 - e. Change of revenue compared to previous 2 years among students and professionals trained through the networks and exchange and experience-sharing initiatives illustrated above.
 - f. Number of new business opportunities generated.
 - g. Percentage among trained students and professionals trained through the networks and exchange and experience-sharing initiatives illustrated above who, in turn, have engaged, as trainers, in training initiatives, either started from scratch (%) or already existing ones (%).
5. Number of key stakeholders (Civil Society Organisations, African Diaspora Associations, etc.) involved directly or indirectly (e.g. consultations, surveys, etc.) in initiatives contributing to the implementation of the AU-EU Innovation Agenda.

Objective 3: Strengthen people, communities, and institutions

[i.e. *“Develop sustainable, long lasting and mutually beneficial higher education, research and innovation partnerships between AU and EU countries as foundations for resilient knowledge economies and societies, preventing or mitigating, among others, the effects of major crises. In doing so, care will be taken in involving*

also the African Diaspora, and in empowering communities, also through citizen science initiatives, aiming for gender balance. Special care will also be paid to training of researchers and recognition of curricula, as well as to strengthening R&I infrastructures and cooperation therein.”]

1. Number of joint, sustainable, long-lasting higher education, research and innovation partnerships (such as co-funded partnerships and start-ups) established between AU and EU entities, including for example:
 - a. Number of joint projects and programmes born within these partnerships enabling the implementation of the AU-EU Innovation Agenda.
 - b. Number of start-ups created through joint AU-EU initiatives.
 - c. Number of stakeholder consultations and feedback received on the implementation and impact of the agenda.
2. Number of researchers, academics and entrepreneurs trained through joint AU-EU initiatives created under the AU-EU Innovation Agenda.

Objective 4: Learn, monitor, and scale it up

[i.e. “Scale-up instruments that can take forward existing successful bilateral or multilateral programmes and projects between AU and EU partners, enable and/or strengthen the knowledge triangle of education, research, innovation. Special focus will be placed on public participation, transparency, and inclusion mainly through capacity empowerment, particularly for the youth and women, advancing knowledge and fostering entrepreneurship and co-creation, to limit and counteract talent drain. A special effort will be put in ensuring the full involvement in this process of all actors in the innovation ecosystem, spanning science, citizens, industry and policy”].

1. Number of successful joint programmes and projects between EU and AU partners “scaled up”, (e.g. Technology Readiness Level (TRL), higher than 7 (i.e. “System prototype demonstration in operational environment”) and delivering products and/or services and/or business and employment opportunities.
2. Number of capacity building initiatives launched to empower youth, women, persons with disabilities, with training and entrepreneurship, made possible through the scaling up of joint AU-EU initiatives.
3. Number of partnerships established between AU and EU entities with the specific purpose to jointly scale up successful programmes and projects.
4. Number of joint AU-EU initiatives that were monitored and evaluated using an agreed-upon M&E frameworks and tools.

III. Summary overview of STI initiatives at AU and EU level, on which the AU-EU Innovation Agenda will build

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation	
Innovating Education in African Expo 2018	AUC-ESTI EU, GiZ, ADEA, Global e-Schools and Communities Initiative (GeSCI), Ashoka, UNICEF, and UNESCO							Established in 2018 as a flagship program of the Department of ESTI aimed at bringing together various stakeholders on the continent to identify, promote and scale promising Education Innovations in Africa.
African Union Research Grant 2018	AU, EC and co-funded by implementing institutions							Since the 2018 launch on Food Nutrition Security and Sustainable Agriculture, climate change and fisheries.
African Union Kwame Nkrumah Scientific Excellence Awards 2009	AU, EC							To recognize top African researchers for their scientific achievements and discoveries, promoting efforts to transform scientific research into sustainable development in the continent.
African Outer-Space Flagship 2016	AUC, African Space Agency, Germany, China, and France, UNECA, African Association for Remote Sensing for							Guided by the Space Policy and Strategy and promoting stakeholders' engagement and resulted into National Space Agencies committing their efforts to the implementation of the African Space Program.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
	Environment (AARSE), AfricaGIS and African Leadership Conference (ALC)						
GMES & Africa Support Programme 2016	AUC, EC, +120 African regional and national institutions, JRC, EUMETSAT, European Space Agency						
The African Scientific Research and Innovation Council (ASRIC) 2018	AU-STRC						
Mapping national innovation systems (NIS) to strengthen the linkages between actors 2011	AU-AOSTI, AU MS, RECs						

← Strengthening Africa’s Earth observation system through the development of data and infrastructure, outreach and awareness raising.

← Established as a specialized technical advisory body of the Commission to promote scientific research and innovation to address the challenges of Africa’s socio-economic development.

← To measure and provide STI data, statistics, indicators and related policy analyses to the AU member states and STI stakeholders for evidence-based policymaking in Africa.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation	
Developing STI indicators to feed the implementation of Agenda 2063 2011	AU-AOSTI, AU MS, RECs							To provide decision makers and STI stakeholders with the needed data and indicators on government budget allocations for R&D by socioeconomic objectives, % GDP expenditures to knowledge production and aspects of innovation and intellectual property in Africa.
STI indicators to support Monitoring, Evaluation and Learning of STISA 2024 implementation ?	AU-AOSTI, AU MS, RECs							An indicator framework comprising thirty-three indicators divided into five result areas: (1) investment in knowledge, (2) generation of knowledge; (3) innovation; (4) policy environment, and (5) effects and impact of STI was developed.
Coalition for African Research and Innovation (CARI) 2017	AUDA-NEPAD, AAS/AESA, RECs, AU MS, BMGF, Wellcome Trust, NIH/USA							Build a highly coordinated, well-funded and African-led platform to improve systematic collaborations and scale up resources for African Science Technology & Innovation (STI) to achieve outcomes that would help more Citizens lead better lives sooner.
Agricultural Technical Vocational Education and Training (ATVET) for	AUDA-NEPAD, RECs, AU MS							Promote technical vocational education and training in the agriculture sector (ATVET) in support of the Comprehensive Africa Agriculture Development Programme (CAADP).

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
Women (Skills Initiative) 2018							
African Medicines Regulatory harmonization (AMRH) for AMA 2010-2011	AUDA-NEPAD, AUC, WB, BMGF, WHO, RECs & AU-MS						
Tuberculosis and Health Systems Support Project (HIV/AIDS, TB and Malaria), Health Research and Innovations 2016	AUDA-NEPAD, WB, ECSA-HC, RECs & AU-MS						
African Union Smart Safety Surveillance (AU-3S) 2020	AUDA-NEPAD, WB, BMGF, RECs & AU-MS, MHRA/UK						

Ensure that African people have access to essential medical products and contribute to the improved regulation of medicines, medical products and technologies is equally timely and critical.

Strengthening Southern Africa Tuberculosis and Health Systems to support targeting interventions in the mining communities, transport corridors and cross-border areas.

Strengthen the safety surveillance of priority medical products across the African continent to address limited health system and safety surveillance capacity across Africa – through efficiencies like technological innovation, pooling of resources, and work sharing.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
Science, Technology, Engineering, and Mathematics (STEM) Education CPA, 2006							
African Science, Technology and Innovation Indicators (ASTII Initiative) 2007	AUDA-NEPAD, AUC, RECs, AU-MS and related STI institutions, Lund University, UNESCO, Sida, Globalics/Africalics, ACTS, ATPS, AfDB, UNECA & UNU-MERIT, FCDO & ABC Brazil		 43 AU-MS		 12 AU-MS		
Africa Union High-Level Panel on Emerging Technologies (APET-Platform) 2016	AUDA-NEPAD, AUC, RECs, AU-MS, BMGF						

← Accelerate Science, Technology, Engineering, and Mathematics (STEM) Education in Africa.

←

- Develop and adopt indicators of STI internationally compatible;
- Strengthen human capacities and institutional for the indicators of STI and other related studies;
- Enable African countries to participate in international programs STI indicators; and
- inform African countries on the state of STI in Africa.

← Harness both existing and emerging innovations and technologies for the economic development of Africa.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation	
Calestous Juma Executive Dialogue (CJED-Platform) 2016	AUDA-NEPAD, AUC, RECs, AU-MS, BMGF							Provide capacity strengthening for senior policy and decision-makers through the exchange of knowledge and national experiences, networking, experiencing diversity and building mutually beneficial relationships with a focus on harnessing innovation and emerging technologies suitable for the sustainable socio-economic development of African countries in the 21st century.
African Biosafety Network of Expertise (ABNE) 2008	AUDA-NEPAD, AUC, RECs, AU-MS, MSU/USA, BMGF							Fulfil the recommendation of the High-Level African Panel on Modern Biotechnology – Freedom to Innovate (Juma and Serageldin, 2007) as a Continent-wide service network that has buy-in from African governments (Biosafety for Food Systems and Empowerment of Rural areas).
Integrated Vector Management (IVM) 2016	AUDA-NEPAD, AUC, RECs, AU-MS, MSU/USA, BMGF, GVF Open Philanthropy							Establish and operationalize a continental platform enabling the continent to build a strong collaboration between the health sector and others to effectively control vectors. To equip the region in the application of existing approaches & those that are on the horizon for controlling vectors.
AUDA-NEPAD Centre of Excellence in Science, Technology and Innovation	AUDA-NEPAD, Council for Scientific and Industrial Research (CSIR) and							Upscale and commercialise home-grown innovations on the continent.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
<u>(AUDA-NEPAD CoE-STI)</u> 2021	Stellenbosch University (SU)						
AUDA-NEPAD Africa Policy Bridge Tank (APBT) 2022	AUDA-NEPAD, African Think Tanks, OECD, Princeton University, Oxford University, GIZ, FCDO/ABC Brazil and T20/G20 platform						
AUDA-NEPAD ENERGIZE AFRICA's INNOVATION ECOSYSTEM 2022	Afreximbank, African Member States, Ecobank, AUDA-NEPAD (STI Office, Office of the CEO)						
African Girls can code Initiative 2018	African Union CIEFFA, UN Women, ITU, UNECA and the Belgian Government						

Provides a multisectoral STI platform for the voices of Think Tanks, Development Agencies and Researchers / academic institutions for effective and evidence-informed policymaking in Africa.

Strengthening innovation ecosystems for active youth participation in an agile, private and public sector.

Aims to train and empower a minimum of 2000 young girls aged between 17-25, across Africa to become computer programmers, creators and designers, placing them on track to take up studies and careers in the information, communication and technology (ICT), education and coding sectors.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
Promoting African Union CIEFFA Alumni role models in STEAM and TVET 2018-2025	African Union CIEFFA, African Union Member States						
Training workshops on ICT, Digital advocacy, and related fields 2019	African Union CIEFFA VMWare, ImpactHer						
African Union CIEFFA Young Person of the Month Program 2022	African Union CIEFFA, Youth Network, AU CIEFFA Alumni						
Dialogues with women working in STEAM and TVET sector 2020	African Union CIEFFA, CSOs						

Promote visibility of African girls working in STEAM, TVET and ICT fields and produce an in-depth documentation on role models and what they are doing in their communities.

These sessions are geared toward empowering young women in the fields of ICT, giving them more opportunities in ICT related fields, digital advocacy and the chance to use the digital dividend to foster their development.

Encourage and propel young girls and women working in STEAM fields or working as innovators and who are creating tangible impact.

Convene Dialogues with role models of women and girls in the fields of STEAM and female innovators in order to encourage young girls to take up career in STEAM fields.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
Africa-Europe Innovation Partnership (AEIP) 2019-2021	Technopolis group (in its function as part of the Service Facility for International Cooperation of DG RTD of the European Commission)						
ENRICH in Africa 2021-2023	Consortium of 17 Members from 8 African countries and 4 European countries, coordinated by Steinbeis 2I GmbH						
EU Advisory Group 2021 R&I INCO SF24	European Commission						

← A pilot initiative of DG RTD, implemented between 2018 and 2021, to explore, develop and test new collaboration mechanisms in the domain of innovation between Africa and Europe.

← Follow-on of AEIP, aiming for a viable network of EU and AU incubators, accelerators, strengthening their capacities to boost local innovation landscapes as well as providing cutting edge value to entrepreneurs and innovators.

← Expert groups to prepare policy reports, including recommendations for a longer-term vision of an EU-AU innovation policy.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
Horizon Europe, Africa Initiative I 2021							
European and Developing Countries Clinical Trials Partnership (EDCTP) 2014-2027							
Food, Nutrition and Sustainable Agriculture Partnership (FNSSA) 2017-2027							

← 36 topics under Calls for Proposals that are particularly relevant for cooperation with Africa reflecting the joint priorities as agreed at the EU-AU Research & Innovation Ministerial meeting in July 2020.

← EDCTP is a public–public partnership between 14 European and 16 African countries, supported by EU. EDCTP’s vision is to reduce the individual, social and economic burden of poverty-related infectious diseases affecting sub-Saharan Africa by accelerating the development of new or improved medicinal products for the identification, treatment and prevention of infectious diseases.

← The partnership address the challenges set out in UN Sustainable Development Goal 2 by stimulating joint AU-EU R&I activities for an initial period of 10 years.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
Climate Change and Sustainable Energy Partnership (CCSE) 2017-2025							
Partnership for Research and Innovation in the Mediterranean (PRIMA) 2017-2025							
African Research Initiative for Scientific Excellence Pilot Programme (ARISE PP) 2020	African Academy of Sciences (AAS)						

The focus of the CCSE Partnership is on climate action for adaptation & mitigation, renewable energy and energy efficiency. Aim to deliver on internal and global political commitments of both continents and address the SDGs in supporting a transition to low-carbon and climate resilient economies.

The Partnership joins investments from EU Commission and 19 countries from Europe and Africa to fund research and innovation in water management, agri-food value chain, sustainable farming.. .

The aim of the programme is to fund research teams of 40 African Scientists’ from 40 African countries hosted within a University or research institution.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
BIC AFRICA - African Business Incubator Communities 2021-2025	European Business and Innovation Centre Network						
Research and Innovation for Agricultural and Food Systems Transformation in Developing Countries (DESIRA) 2017-2020	Over 30 projects implemented by African-EU consortia						
Value Chain Analysis for Development (VCA4D Project) 2016-2022	AGRINATURA (European Alliance on Agricultural Knowledge for Development)						

← Implemented by the ‘European Business and Innovation Centre Network’.

← Joint designing of innovation with local actors based on science and other source of knowledge to change behaviours, skills and agricultural/managerial practices; strengthening innovation support services including advisory services.

← VCA4D performs value chain analyses (VCAs) across a range of agricultural commodities and countries in order to appraise their contribution to growth and job creation, taking into account the sustainability and inclusiveness of these value chains (VC).

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
Capacity for Nutrition (C4N) 2019-2024	GIZ						
Knowledge and Research for Nutrition (NRF) 2019-2024	AGRINATURA (European Alliance on Agricultural Knowledge for Development)						The Programme aims at creating a Regional Network where incubators will be established/ consolidated in Angola, Ethiopia, Madagascar, and Somalia
#Smart Development Fund (#SDF) 2020-2022	GIZ, EU Member States						

← Under C4N “innovation fund” innovative (research) initiatives are funded.

← Support the design, the monitoring, the evaluation and the learning in relation to policies and programmes for better nutrition outcomes in low- and middle-income countries.

← The overall objective of the #SmartDevelopmentFund is to refine digital solutions to counter COVID-19 challenges in and with the EU partner countries. The expected result of the programme is the development, scale-up and promotion of innovative digital solutions, supporting EU partner countries’ response to COVID-19.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
Digital financial solutions in ACP countries 2020-2024	United Nations Capital Development Fund (UNCDF)						
Marie Skłodowska-Curie Actions (MSCA) Innovative Training Networks (/Doctoral Networks) RISE (/Staff exchanges) Individual Fellowships	European Commission and European Research Executive Agency (REA)						

Managed by the United Nations Capital Development Fund (UNCDF) to unlock the potential of digital finance to benefit more than 600,000 women, youth and entrepreneurs. Support key policy reforms for digital transformation as well as create inclusive financial services tailored to the needs of women and youth, including innovative savings products and credit. The joint action will be implemented in different countries in Africa (Gabon, Niger, Malawi and Ethiopia).

MSCA support researchers in all scientific domains, promote collaboration between the academic, scientific and business communities, boost the careers of scientists at all stages and develop excellent doctoral training in Europe and beyond through inter-sectoral and international mobility.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
(Postdoctoral Fellowships) 2021-2027							
HEInnovate Currently 56 African Higher Education Institutions are using this tool 2021-2027	European Commission in partnership with OECD						

← HEInnovate (HEI) is a self-reflection tool for Higher Education Institutions who wish to explore their innovative potential. It guides you through a process of identification, prioritisation and action planning.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
EIT – In line with the recent Strategic Framework for its Global Outreach activities, Africa is listed among the priorities of the EIT global strategic orientations 2021-2027							

The EIT’s Knowledge and Innovation Communities are partnerships that bring together businesses, research centres and universities. They allow:

- innovative products and services to be developed in every area imaginable, including climate change, healthy living and active ageing;
- new companies to be started;
- a new generation of entrepreneurs to be trained;

Several KICs (EIT-Climate KIC, EIT Raw Materials KIC and EIT Food KIC) are engaging with Africa already and we plan on encouraging the KICs to share practices with Africa in the coming period.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
Digital Education Action Plan (TBD) 2021-2027							
Erasmus+ 2021-2027	European Commission, European Education and Culture Executive Agency (EACEA), Erasmus+ National Agencies						

The Plan supports **the development of a high-performing digital education ecosystem**. This includes infrastructure, connectivity and equipment; planning and development; teachers and staff training; learning content, tools and secure platforms. It also focusses on **enhancing** basic and advanced **digital skills and competences** and literacy; computing; data-intensive technologies, and ensuring that women are equally represented in digital studies and careers.

Erasmus+ aims at enhancing skills, competences and employability of students and staff in Africa, of African higher and vocational education institutions; reinforcing capacities, quality, innovation and relevance for the labour market and society; and increasing cooperation of institutions and exchange of good practices between Europe and Africa.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
<p>HAQAA 2 2019-2022</p> <p>HAQAA 3 2022-2025</p>	<p>European Commission + a consortium consisting of the University of Barcelona AAU, EUA, ENQA and DAAD</p>	○	○				
<p>OACPS Research and Innovation Programme 2020-2025</p>	<p>Organisation of ACP countries</p>	○	○	○		○	

← Aims to improve the quality and harmonisation of African higher education through notably the use of the African Standards and Guidelines for Quality Assurance in higher education (ASG-QA) in universities and by external QA agencies, support to the establishment of the Pan-African Continental Accreditation Agency and building up the capacity for informed and evidence-based policy making for higher education at continental level, linked to regional and national capacity and support to the HE cluster of the Continental Education Strategy for Africa 2016-2025.

← 3 components: Policy support facility, Innovation Fund and R&I Hub. The Innovation fund supports innovation ecosystems, transfer of knowledge and technology, networking and sharing experiences.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
Intra-Africa Mobility Programme 2016-2020	European Education and Culture Executive Agency (EACEA)						
ICT58/Digital Innovation 2021-2024 (4 projects launched in early 2021, including the AEDIB/NET, already closely collaborating with the R&I AEIP project)	GIZ, CIVITTA, EBAN, EBN, Enabel, Expertise France, FundingBox, Steinbeis	African-EU Networking academy between Africa and Europe DIGILOGIC Networking incubators / Logistic industry IDEAD4D-Hub & D4DHUB	AEDIHB project Reinforcement of African Innovation ecosystems	AEDIHB Project	AEDIHB project / matchmaking between innovation actors of Africa and EU to reinforce African innovation ecosystems	HUBiquitous project / Knowledge triangle & Training / Entrepreneurs-IT-synergetic training	AEDIHB project

Organisation and implementation of student mobility in high quality master and doctoral programmes and academic/administrative staff mobility, as well as the provision of education/training and other services to foreign students and teaching/training and research assignments and other services to staff from the countries covered by the project.

Activities comprise Coordination and Support Actions and Innovation Actions under Horizon 2020.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
Diagnostic and benchmarking study of the technology transfer ecosystems of the Southern neighbourhood 2019-2021							
FPCA Food Price Crowdsourcing Africa 2019-2021		With external support of Wageningen and IITA - Nigeria	Support to implementation of the Digital Transformation Strategy	Finalized to have a “turnkey project” able to be transferred/duplicated in different contexts	Finalized to improve makers transparency, fair competitions, better definition of food security policy	Involvement of a large range of stakeholders : from farmer to final consumer, from market operators to policy makers	The project cover a gap in the services market which could be covered by new private/public companies

← It identified strengths and weaknesses of the ecosystems and provided tailored policy recommendations for the countries.

← Provides a complementary methodology to gather real-time and very spatial/temporal detailed food price data along the food chain and for better definition of food security policies.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
Innowwide programme 2019-2021		(between the EU SME and a partner in the target location)					
Boost Africa	European Investment Bank (EIB), African Development Bank (AfDB)						
Strengthening Innovation and Start-up Ecosystems across North Africa (Southern Med)		TBD	TBD	TBD	TBD		TBD

Main aim was to support internationalisation of EU SMEs (only), on the basis of small ‘Viability Assessment Grants’ worth 60,000 EUR each. The second phase of Innowwide is expected to be integrated in the Eurostars programme of Eureka, with a budget of 25 MEUR.

EIB cooperation with African Development Bank. The components of the programme comprise an investment programme, a technical assistance pool, and an entrepreneurship lab.

Based in two pillars: 1) sustaining start-up ecosystems; 2) support clusters’ ecosystems. Work at different levels: 1) by adopting macro-support on policy reforms, 2) supporting business organisations (with training, capacity building, etc.) 3) and through demonstration of results.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
Intra-ACP Climate Services and related Applications Programme (ClimSA) Since 2021	WMO - UN World Meteorological Organisation, European Commission Joint Research Centre, EUMETSAT - European Organisation for the Exploitation of Meteorological Satellites						
The Biodiversity and Protected Areas Management (BIOPAMA) Programme 2017-2024	International Union for Conservation of Nature (IUCN) - EC JRC						

← The programme spans the entire climate services value chain to develop and deliver services in five priority sectors: agriculture and food security, disaster risk reduction, energy, health and water. It provides technical assistance, financial assistance, and infrastructure and capacity building to improve wide access and use of climate information and applications for decision-making processes.

← Improved use and monitoring of information and capacity development on management and governance for conservation and sustainable use of biodiversity and natural resources in protected areas and surrounding communities.

	 Implementing Organ & Partners	 Networking	 Capacity-Building	 Technology Transfer	 Incubation	 Knowledge Triangle	 Financial Support for Business Creation
STI for SDGs Roadmaps in Africa 2022-2023	United Nations agencies, EU Delegations, AUC, EC-JRC, six pilot countries (The Gambia, Malawi, Mauritius, Namibia, Rwanda, and Seychelles)						
Pan African Network for Economic Analysis of Policies Since 2019	AU Commission – Dept. Agriculture, Rural Development, Blue Economy, and Sustainable Environment (ARBE) - EC-JRC						

← The STI for SDGs roadmaps are based on the unique potentials and challenges of each target country and mobilise science, technology and innovation to address key societal, environmental and economic issues in line with the achievement of the SDGs. The roadmaps are operational and include future investments in research and innovation priorities.

← PANAP aims to foster the development of centres of excellence in Africa and to promote both Europe-Africa and intra-Africa scientific collaboration as element to vitalise synergies in Africa and between the two continents.

IV. Results of the pilot mapping of projects of the EU-AU R&I Partnership on Food and Nutrition Security and Sustainable Agriculture (FNSSA)

The **EU-AU R&I Partnership on Food and Nutrition and Sustainable Agriculture Partnership (FNSSA)**, with its more than 300 joint projects, was chosen for the implementation of a **pilot**², aiming to identify the most promising projects with the highest business potential, warranting further investments for their potential to be fully reaped. This analysis was done based on a deeper understanding of (i) **the scale of the business potential** and (ii) **the exact needs of identified projects** that, once addressed (e.g. through ad-hoc investments, technical assistance, etc.), would allow such projects to leap over the next step of innovation and reach the marketplace.

In future, the pilot will be extended to other priorities namely Public Health, including the European and Developing Countries Clinical Trials Partnership³ and the EU-AU R&I Partnership on Climate Change and Sustainable Energy. Secondly, this exercise will take the form of a rolling exercise, becoming a lasting part of the AU-EU Innovation Agenda throughout its implementation period.

The needs identified during this pilot have been integrated in the 5 areas presented in annex II. Below you will find the list of projects that have the **highest business potential** out of an initial selection of 34 projects for each of the four priority areas of the 2016 roadmap⁴ of the EU-AU R&I Partnership on FNSSA, as well as **investment strategies and measures** adequate to their needs.

1) In the priority area (of the FNSSA Partnership) of **sustainable intensification**, seven projects were identified as being top. The assessment of their potential and needs is identified below.

DualCassava: “Dual-resistant cassava for climate resilience, economic development and increased food security of smallholders in eastern and southern Africa” – Score: 1.95. (Funded through “African Union Research Grant II”)

Some of the information below comes from an interview held with the project coordinator, Maruthi Gowda, on December 7, 2021.

a. Potential:

- The project has proven its potential to enhance farmers’ resilience to drought and crop disease, and to increase business opportunities in the poultry feed manufacturing sector and others.
- The project has introduced drought mitigation mixed cropping techniques of maize and cassava, together with a newly developed cassava variety that is both drought- and disease-resistant. The implementation covered local maize farmers in a sample of districts in Malawi and Tanzania. A Randomized Controlled Trial (RCT) carried out by the researchers showed that the introduced technique increases farmers’ resilience to adverse

² Full pilot available at the page: https://research-and-innovation.ec.europa.eu/system/files/2022-02/final_report_fnssa.pdf

³ [Home - EDCTP](#)

⁴ [EU-Africa FNSSA roadmap | European Commission \(europa.eu\)](#)

shocks, their revenue, their investment, and their households' dietary diversity.

- The project has also introduced cassava as a partial substitute for the more expensive maize in the poultry feed manufacturing industry. This has led to 17% increases in profit for feed manufacturers and 27% increases in revenues for cassava farmers. Moreover, the project coordinator believes that cassava could also be introduced as a raw material in the bakery, paper, and starch industries. All of this means new business opportunities for cassava farmers (i.e. development of a novel poultry feed; possibility of using cassava in the bakery, paper and starch transformative value chain industries).
- The project has therefore the potential to produce a durable impact in terms of socioeconomic opportunities for African farmers, feed manufacturers, and other entrepreneurs and workers across agricultural and food systems' value chains. As an evident side-effect, it is also promising in terms of food security and poverty alleviation. Moreover, the project has potential to produce a positive environmental impact, since the substitution of imported maize shortens distribution chains, and the introduction of disease and drought-resistant cassava varieties mitigates the impact of climate change and reduces the need for pesticides.

b. Needs and next steps:

- Additional funding is needed to carry out an array of activities necessary for the scale up. These activities include supplying the new cassava varieties to local entrepreneurs, as well as technical training to local farmers to equip them with mixed cropping methodologies and capacity to multiply the seeds. Some infrastructure is also needed for this to happen, including chipping machines, vehicles and laboratories. This would also allow to enhance seed transformation/processing value chains.
- Awareness among farmers in drought-prone areas, as well as among feed manufacturers, should be generated. Additionally, training for farmers on mixed-cropping techniques, as well as training for feed manufacturers, needs to be provided. Moreover, the improved cassava varieties need to be introduced in the national seed systems. To scale up in the bakery, paper and starch industries, there is a need to mentor and encourage private sector partners to invest in appropriate processing and drying technologies. The widespread commercialisation of cassava residues to be used in poultry feed manufacturing also needs developing better links between farmers and feed manufacturers, and promoting the appearance of intermediaries where these do not exist.

“Crop and Soil Health Improvement for Sustainable Agricultural Intensification towards Economic Transformation in West Africa” – Score: 1.58. (Funded through DeSIRA)

Some of the information below comes from an interview held with the project coordinator, Eric Danquah, on November 29, 2021.

a. Potential:

- The project is promising in terms of sustainably intensifying agricultural output and creating new business and employment opportunities.
- The project has introduced improved varieties of crops (rice, maize and tomato) to local farmers. Moreover, it provides extensive training to value chain actors and farmers through field schools and workshops. This leads to a sustainable increase in local agricultural productivity (between 20% and 80% depending on the crop) and output, as well as an increase of farmers' revenue (30%-40%). Additionally, good agronomic practices and pest management strategies have been taught and implemented.
- New product developments have already started, such as SHITOR, a cowpea-based product that is expected to increase this commodity's demand. This creates new agribusiness opportunities and increases the value-added of this industry. Moreover, the developed maize, tomato and cowpea varieties may be patentable and, therefore, possible to commercialise or license. As part of this project, the West Africa Centre for Crop Improvement (WACCI) has already released 3 maize hybrids and is in the process of getting approval for 3 new tomato varieties. Several companies are already interested in the maize hybrid.
- The project has therefore the potential to create business and employment opportunities for local farmers by increasing productivity and income in an environmentally sustainable manner. Therefore, it is also promising in terms of food security and poverty alleviation. Additionally, the project achieves this economic impact in an environmentally friendly way, since the productivity increases and the associated income rises are a consequence of the introduction of improved varieties and the use of soil health management techniques.

b. Needs and next steps:

- The complete scale up would take 3 to 5 years. This scale-up would directly benefit approx. 40,000 farmers and train 1,000 extension officers, which could eventually translate in up to a million farmers benefitted.
- The Farmers Field School initiated through the project could be expanded to include a much higher number of farmers and further spread good agronomic practices and the introduction of improved varieties. The same is true for the Value Chain Workshops organised during the project, which could be enlarged to include all actors in the value chain and combined with entrepreneurship training. This should include both public and private sector involvement.
- New crop varieties could be released to the market, this will create opportunities for the licensing of intellectual property and their commercialization, translating into business and employment

opportunities. The project is already working with an agribusiness start up (Legacy Crop Improvement Centre, Koforidua, Ghana) to start raising private funds for the large-scale production of certified seeds of the developed maize hybrids. The coordinator expects an uptake of the improved maize varieties by 40% of Ghana's farmers in 5 years-time and the national government has shown interest in exploring the possibility of subsidizing certified seed production. Moreover, WACCI has reached an agreement with a tomato processing company in Ghana to produce the developed tomato varieties at a large scale and the developed variety is expected to be the dominant one in the market in 2 to 3 years-time.

- For this scale up to happen, some specialized assistance and funding is needed. Technical assistance in developing a business plan and support in creating links with partners and investors to facilitate the generation of start-ups would be greatly beneficial. Moreover, funding of between €3million to €5million is deemed necessary during for the next 5 years to expand the impact, create cooperatives and establish support systems for farmers. These new funds would also support the creation of start-ups and businesses (e.g. seed companies, commercial seed producers, farmers' cooperatives, food processing companies, etc.) and the marketing of cowpea-based products. Additionally, the plant varieties created need to be scaled-up to be commercialized.

UPSCALERS: “Upscaling Site-Specific Climate-smart Agriculture and Land use practices to Enhance Regional Production Systems in West-Africa” – Score: 1.43.
(Funded through “African Union Research Grant II”)

Some of the information below comes from an interview held with the project coordinator, Seyni Salack, on December 2, 2021.

a. Potential:

- The project is promising in terms of sustainably intensifying small-scale farming and increasing resilience to climate change.
- The project increases small-scale farmers' yields and revenues. It is estimated that labour productivity is increased by a 100% and land productivity by a 200%. This is thanks to the development of a user-friendly app with customized climatic forecasts for farmers' fields, the construction of several facilities for farmers to use, the identification of sustainable intensification pathways (soil quality improvements, compost production, biogas reuse, etc.), and training to farmers on agroclimatic techniques. The estimated increase of farmers' household income is of 50-52%.
- The project is also promising in its capacity to improve governments' agricultural policy in Burkina Faso, Ghana and Niger. The development of decision-making tools for climate-smart policies and the training of national extension officers on the delivery of agroclimatic information to farmers are expected to further improve agricultural output and resilience to climate change.

- Moreover, the project also increases agricultural production resilience to climate change. By delivering customized climatic information and training farmers on agroclimatic techniques, it has been possible to significantly enhance productivity by between 10% and 20% despite the very adverse conditions of the 2018-2020 crop seasons.
- Therefore, the project is promising in terms of creating economic opportunities for small-scale farmers, and in terms of improving food security. The project can sustainably increase agricultural output and improve climate change resilience at the same time, therefore ensuring a stable future food production.

b. Needs and next steps:

- Firstly, customized climate information services are scalable by the weather services of all countries. Technical assistance for the distribution of these customized climatic information services would be needed. This will take an additional 3 years in order to develop a concept of operations for the agroclimatic services. The team aims to reach at least 500 farmers by the end of 2022.
- Moreover, the intensification pathways can be implemented at larger scale. For example, the production of compost for farmers is a scalable practice. The team aims to distribute at least 20 more biodigesters next year (2022).
- They will need funding to maintain the centralised interconnected app system once the project officially ends. Moreover, the scale up of the project would require additional financing (~450,000€).

“Promote sustainable management of *Tuta absoluta*, an invasive pest of Solanaceous vegetables for food and nutritional security in East Africa” – Score: 1.21. (Funded through “African Union Research Grant II”)

a. Potential:

- The project has potential in the sustainable intensification of agricultural output through the environmentally sensible management of pests.
- The project has developed new Integrated Pest Management (IPM) technologies and has disseminated it to tomato farmers for the sustainable management of *Tuta absoluta* in Kenya, Tanzania and Uganda. This has increased agricultural productivity (and quality) by mitigating the infestations. The increase in productivity has positively impacted farmers’ income, both in amount and stability. Moreover, as the output increases and the cost decreases (order of improvements yet to be quantified), new business and employment opportunities have been created in value chain processes as IPM technologies allowed for more and cheaper primary inputs for tomato processors.

- The project is therefore promising in terms of creating economic opportunities for farmers and in improving food security by increasing agricultural yields. Moreover, IPM technologies have also allowed for a more sustainable agriculture by significantly reducing the use of pesticides and fostering a good equilibrium of the ecosystem, for example by allowing the activities of pollinators.
- b. Needs and next steps:**
- The project needs starter kits for farmers to further disseminate the developed IPM technologies. Moreover, in the medium term, financial assistance would be needed to upscale the IPM dissemination to other regions and countries.

PASUSI: “Participatory Pathways to Sustainable Intensification. Innovation platforms to integrate leguminous crops and inoculants into small-scale agriculture and local value chains” – Score: 1.15. (Funded through “ERA-NET Cofund, LEAP-Agri”)

Some of the information below comes from an interview held with the project coordinator, John Sumelius, on December 20, 2021.

- a. Potential:**
- The project is promising with regards to the sustainable intensification of agricultural output, the increase of resilience to climate change and the improvement of women’s position in society.
 - The project is expected to reduce production costs and increase productivity (order of improvements yet to be quantified) of legume farms. The identification of the most economically viable crops and practices has led to the introduction of inoculated soybean production and land rotation techniques. This has led to cost reductions and increase yields (order of improvements yet to be quantified). Moreover, indirect economic opportunities could be generated if the volume of inoculants is scaled-up and a market is formed. Some strains of rhizobia and soybeans have already been patented in Ghana and Uganda.
 - The project has therefore the potential to reduce legume farmer poverty, improve soil quality and increase resilience to climate change. Moreover, given the fact that women make up most of the workforce in this area, the improved economic opportunities could lead to an increase in the economic independence of local women. Additionally, two women innovation platforms have been created.
- b. Needs and next steps:**
- The project and/or its outputs can be scaled-up by solving information problems within the governance systems that currently block farmers from transforming their systems. For this to happen, additional funds would be needed (order of desirable financial support yet to be quantified).

EcoAfrica: “ECOLOGICAL intensification pathways for the future of crop-livestock integration in AFRICAN agriculture” – Score: 1.06. (Funded through DeSIRA)

a. Potential:

- The project has the potential of increasing crop production in a sustainable manner, as well as improving food security as a result.
- The project uses innovative techniques (e.g. pest-mitigating cropping system, high-quality organic fertilizers, etc.) to sustainably intensify production while protecting soil properties at the same time. This has led to increases in agricultural yields and in farmers’ revenue (order of improvements yet to be quantified). Cost reductions have also been observed (though are yet to be exactly quantified) by using plants with insecticide characteristics that allow for a reduction in the purchase of fertilizers and pesticides. Additionally, several upland rice varieties tested during the project are in the process of being registered.

b. Needs and next steps:

- The project and/or its outputs could be scaled-up through nationwide programmes. For this to happen, technical and logistical assistance would be needed in order to diffuse the techniques developed and to target the most suitable areas for exploitation. To do so, the team would need to work with lots of farmers to collect a large amount of biomass for recycling (biogas, organic fertilizer, etc.). Furthermore, it will also need equipment to generate these products.

MAB Chicken: “Marker-assisted breeding of selected native chickens in Mozambique and Uganda” – Score: 1.01. (Funded through “African Union Research Grant II”)

Some of the information below comes from an interview held with the project coordinator, Filomena dos Anjos, on December 9, 2021.

a. Potential:

- The project is promising in terms of a sustainable intensification of chicken meat and egg production.
- The project has improved native chicken ecotypes and developed feed based on scavengeable resources. This was introduced to farmers in Mozambique and Uganda. These new chicken breeds are more productive and of better quality (meat and eggs), this will improve the economic opportunities of farmers and ameliorate the living conditions of rural communities. The project will create business and employment opportunities in the hatchery sector, day-old brooded chicks’ industry and in mother units and communal incubators. Moreover, it may lead to the development of a scavengeable feed industry. The chicken breeds may be patentable.
- The project is therefore promising in terms of economic development. Additionally, the production increase (yet to be exactly quantified) is

sustainable because semi-intensive production is promoted. Besides, the project can have a positive impact in women's standing in society. Since this activity is mostly carried out by women, an increase in their productivity could increase their economic independence.

b. Needs and next steps:

- Nationwide programmes in Uganda and Mozambique that helped to introduce improved chicken varieties are needed. Some progress has already taken place in Uganda, as the chicken breeds have started to be transferred to farmers. Nonetheless, Mozambique has not begun yet.
- In order to implement these programmes, government commitment and NGO support is needed, as well as additional funding.
- The project would need support to conduct future steps in several fronts: (a) it will need technical assistance to develop a business plan and to be mentored on intellectual property management, (b) it will need support in accessing markets, (c) women groups will need some type of assistance (funds for egg incubators, feed, vaccines and other components).

2) In the priority area (of the FNSSA Partnership) of **agriculture and food systems for nutrition**, two projects were identified as being top. The assessment of their potential and needs is identified below.

EatSANE: “Education and Training for Sustainable Agriculture and Nutrition in East Africa” – Score: 1.33. (Funded through “ERA-NET Cofund, LEAP-Agri”)

a. Potential:

- The project has provided training for farmers on new cropping systems and practices. Moreover, they have established and developed value chains for green leafy vegetables.
- The project is therefore promising in creating new economic and business opportunities. The novel cropping systems has led to important productivity increases and to significant rises in farmers' income (order of improvements yet to be quantified). Moreover, the new market avenues are now reachable to farmers, as these have started marketing dried vegetables and accessing more profitable markets thanks to the improved storage practices (i.e. solar drying).
- Furthermore, the project has a strong potential with respect to food security, as the practices developed lead to more nutritious food, reduces food losses and increases dietary diversity. In terms of sustainability, the project is also promising since the new cropping systems prevent soil erosion and biodiversity losses.

b. Needs and next steps:

- The project's outputs could be scaled up by diffusing the techniques and novel cropping systems at a large scale. This will need permanent institutional support (e.g. extension officers). Disseminating best practices

in an easy and understandable language is therefore key, and should target nutritional experts, rural advisors and extension officers.

- A stakeholders' board would be important to exchange information and diffuse the materials among all interested actors. If the project is to be scaled-up to other countries, value chain and stakeholders' workshops are also key. Youth targeting must also be a priority in order to ensure participation of this vulnerable group into the economic opportunities that the project can provide.
- The scale up of the project would need financing in order to continue developing materials and scaling-up trainings.

“Enhancing nutritional quality of plantain food products through improved access to endophyte primed and high pro vitamin A plantain cultivars under integrated soil fertility management practices in Nigeria, Cameroon and Gabon” – Score: 1.06. (Funded through “African Union Research Grant II”)

Some of the information below comes from an interview held with the project coordinator, Masso Cargele, on November 30, 2021.

c. Potential:

- The project has developed fertilisers and designed rates of fertilisation for plantain cultivation, what increases the crop's productivity and output. More importantly, several plantain-based products and processes have been developed. Among them, plantain flour with high provitamin A content, a new solar drying technology, and a new process for deep-fat frying starchy banana that leads to significant reductions in oil use.
- The project is therefore promising in creating new economic and business opportunities, as well as new markets. The project leads to important productivity increases (order of improvements yet to be quantified) in both plantain production (e.g. fertilisers) and processing (e.g. solar drying, deep-fat frying). Moreover, the new products developed create new market avenues for producers and other value chain actors (e.g. plantain flour).
- Furthermore, the project has a strong potential with respect to food and nutrition security, as the products developed with high provitamin A content easily cover the vitamin A requirements of pre-school children and pregnant women.

d. Needs and next steps:

- The project's outputs could be scaled up by diffusing the techniques at a large scale. The team has already developed a business plan to implement production and processing techniques by the youth. Nonetheless, seed systems are not well organised and this represents an obstacle for large-scale transfer. All value chain actors should be included in the expansion.

- The scale up of the project would need financing to bring the business plan into practice.
- The team believes that some outputs of the project can be patentable. Private involvement is needed for the production of endophytes.

3) In the priority area (of the FNSSA Partnership) of **cross-cutting issues**, four projects were identified as being top. The assessment of their potential and needs is identified below.

SafeFish: “Development of bacteriophage cocktails as disease biocontrol agents for improved aquaculture productivity, food and nutrition safety in Ghana and Uganda” – Score: 1.41. (Funded through “African Union Research Grant II”)

Some of the information below comes from an interview held with the project coordinator, Jesca Nakavuma, on November 29, 2021.

a. Potential:

- The project is promising in terms of increasing food output and improving the environmental footprint of aquaculture.
- The project has developed phage cocktails that act as biocontrol for the management of bacterial pathogens in tilapias. This leads to fish mortality reductions of around 60% and output increases of 20%. Besides, phage cocktails are cheaper than the currently used antibiotics. The project is therefore promising in terms of creating business and economic opportunities for tilapia farmers by increasing productivity.
- The project has also potential with regards to food security and sustainability. The phage cocktail stabilises and increases food supply. Moreover, they do so by introducing ecologically harmless biocontrol technology, therefore reducing the environmental impact of aquaculture.

b. Needs and next steps:

- The project and/or its outputs could be scaled up by transferring the research output to fish feed manufacturers. Moreover, biocontrol technologies for other species could be researched.
- A new regulatory framework is needed to introduce the phage cocktail to the aquaculture sector. Public involvement is therefore needed.
- The team would need assistance in developing a business plan and managing intellectual property, as they have planned to patent the phage cocktail.

- The scale up would need funds in order to make the appropriate investments to develop the productive infrastructure needed.

“AFRICA-MILK: Promote ecological intensification and inclusive value chains for sustainable African milk sourcing” – Score: 1.32. (Funded through “ERA-NET Cofund, LEAP-Agri”)

a. Potential:

- The project has developed agroecological dairy cows feeding practices and efficient dairy collection systems. Moreover, the team has created Dairy Innovation Platforms (DIPs) in each of the dairy processor networks involved. These platforms have directly involved women farmers into the discussion.
- The project is therefore promising in terms of food and nutrition security, as it is expected to increase access to safe dairy products in Kenya and Madagascar thanks to a better management of milk quality all along the dairy value chain.
- The project has also potential with respect to environmental sustainability, as products are produced with local milk and not imported powder milk, therefore shortening the distribution chain.
- Furthermore, the project may create local business and economic opportunities in the dairy industry based on fresh milk produced locally. The project leads to increased productivity and output, and reduced collection costs.

b. Needs and next steps:

- Some of the output of the project (i.e. *Jabnde*, a rationing software for African dairy cows) might be patentable and could be commercialised. Discussions are being held with the legal department of CARD in this respect.
- The project can be scaled-up by expanding the use of *Jabnde* to livestock technicians in charge of monitoring milk production on farms.
- The team would need assistance in implementing the organisational innovations (i.e. dairy collection systems).
- The scale up would need funds to make the appropriate investments to expand the practices and systems developed (~60,000€).

SPEAR: “(Empowering small-scale farmers): towards the SDGs through participative, innovative and sustainable livestock and poultry value chains” – Score: 1.08. (Funded through “ERA-NET Cofund, LEAP-Agri”)

a. Potential:

- The project has developed new ways of preserving milk and meat, protocols for participatory value chain modelling, and training modules.
- The project is promising in terms of economic development. The local cereal-based feed developed in Senegal is more affordable than the current solutions, what gives the possibility to more poultry farmers. Poultry farmers increase productivity and output as a result (order of improvements yet to be quantified).
- The project also improves the environmental footprint by utilising locally grown cereals for feed manufacturing. With respect to food and nutrition security potential, the project improves access to nutritious food in Senegal and Kenya by the preservation of food and the increased nutritional values provided by introducing insect meals as animal feed in Kenya.

b. Needs and next steps:

- For the project’s output to scale up at the national level, a Private-Public Partnership (PPP) will need to be created.

“Enhancing the nutrition and health of smallholder farmers in East Africa through increased productivity of biofortified common bean and improved postharvest handling” – Score: 1.08. (Funded through “African Union Research Grant II”)

Some of the information below comes from an interview held with the project coordinator, Pamela Paparu, on December 1, 2021.

c. Potential:

- The project has the potential of reducing hunger, improving food and nutrition security and fostering responsible food production. The promotion of biofortified beans and pre- and post-harvest handling practices increases output and safety of the beans. This results in safer and more nutritious food.
- The project is also promising in terms of economic development. The bean variety is more productive and increases yields (order of improvements yet to be quantified), therefore generating business opportunities for small-scale farmers. Moreover, row spacing and the use of selective herbicides allows for labour cost reductions (order of improvement yet to be quantified).

- The project also improves the environmental footprint of bean production by promoting the safe use of pesticides thanks to row spacing, which reduces seed amount per acre.

d. Needs and next steps:

- For the project's output to scale up, the bean variety seeds should be diffused to allow for a large-scale multiplication of seed production. One farmer group has already taken over this task; however, they will need enhanced capacity to carry it out successfully. Moreover, they will need training in quality production and marketing. Additionally, farmers should be trained in the safe use of pesticides and on reducing post-harvest losses.
- Accordingly, the project will need technical assistance in planning future steps and developing a plan of action. Additional funding will also be needed.
- Farmers will need training and technical support to set up cooperatives and to establish the bean seeds production facilities.

4) In the priority area (of the FNSSA Partnership) of **expansion and improvement of agricultural markets and trade**, one project was identified as being top. The assessment of its potential and needs is identified below.

“Implementation of Agroforestry Systems in S. Tomé and Príncipe and development of non-wood forest products (NWFP) in Angola and S. Tomé and Príncipe to improve income-generation and food security” – Score: 1.38. (Funded through “African Union Research Grant II”)

Some of the information below comes from an interview held with the project coordinator, Maria do Céu Madureria, on November 30, 2021.

a. Potential:

- The project has the potential of expanding agricultural markets by opening new market avenues for the products created. The project developed three Non-Wood Forest-Products (NWFP) Chains (Foods & Aromatic Plants; Medicinal Plants; Mushrooms). Moreover, the team also developed new lines of healthier food and medicinal natural products.
- Furthermore, the project is promising in terms of environmental outcomes/improvements. The team has implemented agroforestry techniques (AFS), rehabilitated degraded natural areas, and developed a Biological and Fair-Trade certification for all NWFP. These techniques have also been taught to small scale farmers and Ministry of Agriculture technicians of S. Tomé and Príncipe. AFS techniques have allowed for an increase in output and productivity (order of improvements yet to be quantified), while maintaining quality and ensuring sustainability.
- The project therefore creates economic and business opportunities because it increases agricultural productivity through AFS and creates new market

avenues by developing NWFPs and introducing mushrooms into national food markets. All of this while ensuring environmental protection and giving value to sustainable production by creating a Biological and Fair-Trade certification.

b. Needs and next steps:

- The project could be scaled up by expanding AFS to the whole national territory of Angola and S. Tomé and Príncipe, and by developing more lines of NWFP. The original plan was to locally market NWFP to international tourists. Nonetheless, given the situation derived from COVID-19, the team is focusing on commercialising the developed products on international markets. The Biological and Fair-Trade certification should be key part of this strategy.
- The project has already created seven micro-business groups that will implement AFS techniques and market the developed NWFPs in S. Tomé and Príncipe. These groups need technical assistance in order to evolve into long-term sustainable companies. The team has already established contact with two incubators to benefit from their help in this respect.
- The scale up will need financing for these micro-business groups to succeed. Moreover, the team will need to create a network of partnerships to ensure the expansion of AFS to other territories at the national or regional level.

V. Toolkit for initiatives that will implement the Agenda

A checklist of criteria was developed as a “toolkit” to identify initiatives contributing to the implementation of the actions of the AU-EU Innovation Agenda, with a view to enhancing its positive impact on the ground. Two checklists were proposed for two types of initiatives, with some ad-hoc criteria: (i) projects, programmes and partnerships⁵ and (ii) scholarships (of both educational and research nature)⁶. Initiatives fulfilling all the criteria proposed would be recognised as officially contributing to the implementation of the AU-EU Innovation Agenda. Beyond enhanced visibility, initiatives recognised as such would also gain an opportunity to potentially synergise with each other, especially when aligned under the same actions of the AU-EU Innovation Agenda. This, in turn, is hoped to generate a catalyst momentum for future initiatives. As soon as initiatives will be recognised as enabling the implementation of the AU-EU Innovation Agenda, they will be inventoried in a dedicated **dashboard**, showcasing them under each respective action and priority area of the Agenda, providing information on their timeframe and budget allocation (see **Figure 1** for further details). Potentially eligible initiatives will be regularly reviewed (i.e. on a quarterly basis) by the Task Force of the Ad-hoc Innovation Agenda Working Group against the backdrop of the aforementioned criteria. Once they are made aware of this process (e.g. through stakeholder engagement and outreach promoted by the Ad-hoc Innovation Agenda Working Group of the AU-EU HLPD Bureau), R&I stakeholders could submit possibly suitable initiatives to the attention of the dedicated Task Force, for its checklist-based review. The Task Force will be in charge of updating regularly (i.e. on a quarterly basis) the dashboard throughout the implementation timeframe of the AU-EU Innovation Agenda (with a frequency of at least every quarter of year) adding new initiatives as they fulfil the proposed checklists. Outcomes of each quarterly review of initiatives and their potential addition to the dashboard will have to be ultimately approved by the AU-EU HLPD Bureau during the most proximate Bureau meeting (occurring on a month and half-basis). Following each approval, the most recent version of the dashboard will be published online, together with the minutes of the respective HLPD Bureau Meeting on the [web page](#) of AU-EU HLPD Bureau.

V.a) Checklist of criteria for projects, programmes and partnerships

1. Alignment with one or multiple objectives of the AU-EU Innovation Agenda.
2. Fall under one of the actions of the 4 thematic areas of the AU-EU cooperation in R&I (i.e. Public Health, Green Transition, Innovation & Technology and Capacities for Science) or the area of “Cross-cutting issues”, as they are defined in the AU-EU Innovation Agenda.

⁵ “Project” in this context refers to a single, focused effort aiming for one or more specific results within the scope of innovation creation and/or enhancement. “Programme” refers to an initiative encompassing multiple projects. “Partnership” refers to a joint AU-EU funded programme.

⁶ “Scholarship” in this context refers to a funding scheme deployed with the specific objective to support students’ or scientists’ educational and/or research activities at a Research & Innovation performing organisation (e.g. Higher Education Institution, research institute, private firm, Public-Private Partnership entity, etc.).

3. Include an action plan and already one or more secured funding sources (i.e. project/programme/partnership ready to start).
4. Ensure AU-EU co-ownership, whether financial or in-kind, from conceptualisation to implementation and M&E of results.
5. When possible, catalyse synergies with other initiatives, triggering collaboration among multiple funders (e.g. AU, EU and beyond).
6. Provide tangible/measurable socio-economic development, either directly or indirectly, in Africa and/or Europe (with clear economic, social and environmental Key Performance Indicators included in the programming) (see **Table 1** below)⁷.
7. Include a clear sustainability component, with an action plan being foreseen also for the aftermath of the initiative.
8. Aim for active local engagement and uptake of proposed innovative solutions.
9. Empower youth and/or women and/or vulnerable groups [e.g. persons from disadvantaged socio-economic background and/or persons with disabilities and/or refugees and/or stigmatised/discriminated groups of people] and their entrepreneurship.
10. Foresee a clear inclusive communication package (on project/programme/partnership action plan, results and impact) for the general public/civil society, at local level too.

V.b) Checklist of criteria for research and education scholarships

1. Alignment with one or multiple objectives of the AU-EU Innovation Agenda.
2. Fall under one of the actions of the 4 thematic areas (i.e. Public Health, Green Transition, Innovation & Technology and Capacities for Science) or the area of “Cross-cutting issues”, as they are defined in the AU-EU Innovation Agenda.
3. Include one or more secured funding sources (i.e. scholarship programme ready to start).
4. For research scholarships: ensure Africa-Europe co-ownership, whether financial or in-kind, from conceptualisation to implementation and M&E of results.
5. When possible, catalyse synergies with other scholarship schemes (e.g. AU, EU and beyond).

⁷ On the whole, Key Performance Indicators applied to measure results generated by initiatives are expected to be in line with those proposed in the M&E section (section II) for the assessment of the impact of the AU-EU Innovation Agenda.

6. Provide tangible/measurable socio-economic development, either directly or indirectly, in Africa and/or Europe (with clear economic, social and environmental Key Performance Indicators included in the programming) (see **Table 1** below).
7. Include a clear sustainability component, for the aftermath of the scholarship programme (e.g. future training by those who were trained; measures to counteract talent drain).
8. Entail research and/or curricular activities involving at least one African and/or one European institution.
9. Empower youth and/or women and/or vulnerable groups [e.g. persons from disadvantaged socio-economic background and/or persons with disabilities and/or refugees and/or stigmatised/discriminated groups of people] and their entrepreneurship.
10. Foresee a clear inclusive communication package (on scholarship scheme, beneficiaries and results) for the general public/civil society, at local level too.

Table 1 – Qualitative overview of KPIs proposed to measure “socio-economic development” according to criterion #6 in both checklists.

Category	Measurement Goal	Impact	Examples of KPIs
<i>Business & Economic</i>	Measure projects’ business readiness / potential and capacity to generate economic impact	The effect of an initiative’s output on the economy of the targeted sector, as well as its spillover effects in other sectors (e.g. changes in productivity or the creation of new business avenues)	<ul style="list-style-type: none"> • Revenue change • Change in cost • Change in productivity • New business opportunities • Patents/patent applications
<i>Social</i>	Measure projects’ capacity to create a social impact	The effect of an initiative’s output on the livelihoods and social structures of a population (e.g. impact on food security or changes in gender relations)	<ul style="list-style-type: none"> • Impact on women • Impact on youth • Impact on poverty • Impact on food & health security (when applicable) • Opportunities for civil society involvement
<i>Environmental</i>	Measure projects’ impact on the environment	The effect of an initiative’s output on the environment (e.g. changes in resource use efficiency or supply chain shortening)	<ul style="list-style-type: none"> • Impact on climate change resilience • Resource efficiency • Value chain shortening

Figure 1 – Sample of the dashboard of initiatives (i.e. project, programmes and partnerships in this case) aiming to enable the implementation of the AU-EU Innovation Agenda, aligned under their respective short-term action, according to priority areas of intervention.

