



Study on the projects funded to support the FNSSA Partnership

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DISCLAIMER

The analysis and discussion of the partnership in this project is guided by the information on the projects as captured in the LEAP4FNSSA database and in publicly available project descriptions. The conclusions drawn are subject to the limitations of the available information. Views expressed in this report are of the authors, and do not in any way represent official positions of the ARC, SLU or the LEAP4FNSSA project partners. The authors remain responsible for any errors thereof. Every possible effort to ensure compliance with General Data Protection Regulation (GDPR) was made.

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Acronyms

AU	African Union
AURG	African Union Research Grants
CAAST-Net	Network for Coordination and Advancement of Sub-Saharan Africa and Europe Cooperation
CAP	The Common Agricultural Policy
CGIAR	Consortium of International Agricultural Research Centers
CSA	Coordination and Support Action
COVID-19	Coronavirus disease 2019
DeSIRA	Development Smart Innovation through Research in Agriculture
DG DEVCO	Directorate-General for International Cooperation and Development
Edicitnet	Edible Cities Network - Integrating Edible City Solutions for social resilient and sustainably productive cities
ERA-NET	European Research Area Network
EU-AU	European Union-African Union
Europe 2020	The Europe 2020 Strategy
FNSSA	Food and Nutrition Security and Sustainable Agriculture
GAIN	Global Alliance for Improved Nutrition
HLPD	High Level Policy Dialogue
H2020	Horizon 2020 programme
IDRC	International Development Research Centre
ILRI	International Livestock Research Institute
IMWI	International Water Management Institute
JAES	Joint Africa-EU Strategy
KMS	Knowledge Management System
LEAP-Agri	Long term EU-Africa research and innovation Partnership on food and nutrition security and sustainable agriculture
LEAP4FNSSA	Long-term EU-AU research and innovation Partnership on Food and Nutrition Security and Sustainable Agriculture
MADFORWATER	DevelopMent AnD application of integrated technological and management solutions FOR wasteWATER treatment and efficient reuse in agriculture tailored to the needs of Mediterranean African Countries
NEXTFOOD	Educating the next generation of professionals in the agrifood system
NGOs	Non-Governmental Organisations
PAEPARD	Platform for African-European Partnership on Agricultural Research for Development
RECs	Regional Economic Communities
R&I	Research & Innovation
RINEA	Research and Innovation Network for Europe and Africa
SEACRIFOG	Supporting EU-African Cooperation on Research Infrastructures for Food Security and Greenhouse Gas Observations
STI	Science, Technology and Innovation
STISA	AU Science, Technology and Innovation Strategy for Africa
SPSS	Statistical Package for the Social Sciences
SDGs	Sustainable Development Goals
TRIATLAS	South and Tropical Atlantic Climate-Based Marine Ecosystem Prediction for Sustainable Management
UNICEF	United Nations Children's Fund
WPs	Work packages

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EXECUTIVE SUMMARY

The Long-term EU-AU Research and Innovation Partnership for Food and Nutrition Security and Sustainable Agriculture (LEAP4FNSSA) is a Coordination and Support Action (CSA) financed by EU's H2020 work programme. The project's main objective is to provide a tool for European and African institutions to engage in a Sustainable Partnership Platform for research and innovation on Food and Nutrition Security, and Sustainable Agriculture (FNSSA), supporting the implementation of the 10 years FNSSA RoadMap approved by the EU and the AU in 2016. Work Package 1 of the project provides support and information services to the various structures that govern the bi-regional partnership in FNSSA, and facilitates evidence based decision-making. As part of its critical role, WP1 commissioned two studies to contribute towards a report for the sixth EU-AU Summit in 2020. The objective of this study, on projects funded under the FNSSA partnership, is to provide critical insight and stocktaking on the extent to which ongoing and past projects have contributed to the goals of the partnership in implementing the roadmap. The projects are analysed in terms of their thematic focus, geographic scope, actors involved and alignment with broader regional and international policy objectives and the values of the FNSSA partnership and potential impact. Through a consultative process with relevant partners, 105 projects, which fall under the funding schemes LEAP-Agri, Horizon 2020, DeSIRA, and the African Union Grants Phase 1 and 2 were selected for the study. Data on the projects was obtained from the LEAP4FNSSA projects database and analysed using a combination of qualitative and quantitative techniques.

Results of the analysis show that as of August 2020, more than 80% of the projects are ongoing, 6% had just started, and 14% were completed. Most of the projects fit the classification of being Development and Innovation oriented research projects and Applied research projects. By taking a problem solving approach and using scientific knowledge for system improvements and technology transfer, the projects have potential to address challenges for food and nutrition insecurity, climate change and environmental degradation. Analysis of the themes and sub-themes addressed by the projects shows that 79% of the projects address Sustainable Intensification, 34% address Agriculture and Food Systems, whilst only 15% address the Markets and Trade theme. Some of the projects cover research relevant to more than one theme. About 18% of the projects have actions that address cross cutting thematic areas. It is thus concluded that the projects align with the thematic research priority areas laid out in the roadmap. There is a wide range of partners involved in the projects and these include universities, research organisations/agencies, government bodies, private sector partners and expert networks. Participation of these partners varies substantially in the projects, with Universities and Research Agencies having the highest average numbers in projects, and expert networks and the private sector being least involved in terms of numbers. Most of the projects are located in East and West Africa, and Central and North Africa have the least number of projects. In Europe there seems to be a dominance of some countries in terms of the partners participating in the project, raising the possibility of a Partnership that is not sufficiently inclusive. The majority of projects are aligned with and have potential to contribute towards the Sustainable Development Goals. Most of the projects align with SDGs 2, 6, 9, 17 and 12-14.

The study makes several recommendations as follows.

Increase focus on the roadmap theme Trade and markets- Explore alternative interventions to develop trade and markets within and between Africa and Europe such as trade expos at various levels, capacity building for farmer groups and small agri-businesses. The Partnership should also leverage R&I resources to facilitate skills development for market access and explore agricultural enterprise models that improve productivity and value added production, particularly agro-processing.

Increase attention to issues of gender, women and youth as cross cutting themes- Gender is not identified as a research focus area in the FNSSA roadmap, despite the importance of the issue in addressing challenges of FNSSA, poverty and taking agriculture forward in Africa. There's need to examine the role and impact of gender and youth in African agrifood systems, particularly in enabling uptake and scaling up of research innovations.

Promoting farmers' organisations and cooperatives involvement in R&I projects- Recognize the role of farmers' organisations as critical partners in R&I projects. Farmer organisations have potential to accelerate knowledge and technology transfer and adoption of new solutions, which in turn could lead to significant impact in agricultural transformation to achieve the objectives of the roadmap. There is therefore a need for focused attention on projects that promote the roles of farmers' organisations in the partnership.

Address concentration of projects in some countries in both Africa and Europe- Ensure inclusivity of all EU and AU countries and facilitate balanced participation to make the partnership truly bi-regional. There is in recent years an increasing trend towards African-coordinated initiatives, and leading coordination of projects. This should be sustained through ongoing efforts in capacity development, particularly for African organisations that have a long-term track record of R&I collaborative projects, where institutional support is guaranteed.

Harness the potential role of the private sector- More needs to be done to engage the private sector from Europe and from Africa to get them involved as critical actors in the R&I partnership for FNSSA. Effort should be made to explore mechanisms through which research and innovation cooperation with the private sector can be enhanced, and the possible incentives and policy instruments for them to engage in R&I initiatives contributing to the FNSSA Roadmap.

AU and RECs should increase funding for FNSSA partnership projects- To facilitate development of an equal and jointly funded FNSSA partnership, there is need for the AU, Regional Economic Communities (RECs) and African countries to increase investment in R&I and human capacity development and commit some of the R&I investment to the partnership projects.

Explore long-term sustainable models for financing in agriculture to enhance use of knowledge generated by R&I investments- Building on past and recent experience on financing agriculture in Europe, Africa and elsewhere, there is need for exploring mechanisms for sustainable models for financing African agriculture to enhance use of R & I outputs. Furthermore, mechanisms to scale up agricultural innovations, technical assistance for smallholder farmers and agrifood enterprises for development impact are essential.

Address emerging risks to FNSSA- Going forward, it is suggested that the HLPD revisit the FNSSA roadmap thematic areas and funders consider reprioritising the allocation of R&I funds towards emerging threats to FNSSA, in light of emerging risks such as the COVID-19 pandemic and the 2020 locust outbreak on the continent .

1. INTRODUCTION AND BACKGROUND

The study is compiled as part of the LEAP4FNSSA project oversight studies, and will contribute towards a publication for the 6th EU-AU October 2020 summit. Section two of the study outlines the approach taken to select the relevant projects and to analyse the data. Section three presents the results of analysis of the projects in the database, and section four discusses the projects' contribution to broader developmental goals and the potential for impact. The report ends with some concluding remarks and identifies areas that present an opportunity for improvement to enhance creation of a long term, balanced and sustainable R&I FNSSA Partnership.

1.1 The EU-AU FNSSA R&I Partnership

Europe and Africa have a long history of scientific and technological cooperation, which has expressed itself through a growing number of collaborative partnership agreements at various levels over the years. The foundation for this cooperation in the last two decades, is laid by the Joint Africa-EU strategy (JAES) signed by the Heads of State in 2007. The JAES led to the emergence of the AU-EU High Level Policy Dialogue (HLPD) on Science, Technology and Innovation (STI) in 2010, with a priority to work on Food and Nutrition Security and Sustainable Agriculture (FNSSA), amongst other issues. The Heads of State and Government at the 2014 EU-Africa Summit, tasked the EU-Africa Expert Working Group under the guidance of the HLPD, to draft a roadmap towards a long-term, jointly funded and co-owned EU-Africa R&I Partnership on FNSSA (sometimes called the Partnership). The partnership is borne against the backdrop of growing and persistent levels of global hunger, increasing incidences of obesity, undernourishment and diet related non-communicable diseases. Additional challenges of climate change, and environmental degradation, coupled with changing consumer food preferences necessitate agricultural and food systems that are more efficient in resource use and able to deliver a range of goods and services in the economy.

The goals of the FNSSA Partnership are to boost the impact of AU-EU joint research and innovation at local level by addressing the entire value chain, strengthening capacity building and focusing on demonstration projects and pilot actions to bring R&I results to the users. In addition, the Partnership aims to increase production of high quality food with appropriate inputs, enhance income growth and promote rural development, contributing to the Sustainable Development Goals (SDGs) (EC, 2018). The "Roadmap towards a jointly funded EU-Africa Research & Innovation Partnership on FNSSA" (hereafter referred to as the Roadmap), was adopted by the HLPD Senior Officials Meeting in Addis Ababa in April 2016. The Roadmap emphasises a jointly owned and managed partnership, facilitating the involvement of diverse stakeholders in problem solving and linking research to innovation. Recognising past initiatives and existing numerous interventions in the domain of FNSSA, the Roadmap also seeks to enhance coordination of policies, programmes and funding mechanisms.

The Roadmap proposes four priority themes as the basis for a joint research and innovation agenda for the FNSSA Partnership. These are; (i) Sustainable intensification, (ii) Agriculture and food systems for nutrition, (iii) Expansion and improvement of agricultural trade and markets; and (iv) Crosscutting topics. The cross cutting topics include improved coordination between European and African FNSSA R&I projects, supporting innovation processes, strengthening collaborative capacities of R&I

communities, and social and cultural contexts of FNSSA production systems. An AU-EU FNSSA Working Group set up in 2017, oversees the implementation and impact of the partnership in the short, medium and long-term. Since 2018, the Long-Term EU-AU Research and Innovation Partnership for Food and Nutrition Security and Sustainable Agriculture (LEAP4FNSSA) project has been rendering secretariat support services to the FNSSA Working Group.

In the Roadmap, activities for the implementation of the research and innovation partnership on FNSSA are divided into short-term actions (up to 2016), the medium term (up to 2017) and long term actions (2018-2020 and beyond). The short term entailed joint development of a research agenda, and designing the roadmap itself. Well-known projects such as Science, Technology and Innovation Cooperation between Sub-Saharan Africa and Europe (CAAST-Net Plus), Platform for African European Partnership on Agricultural Research for Development (PAEPARD) and ProIntensAfrica supported the partnership in the early phases. Medium term actions stipulated in the Roadmap included 'consolidation, investing in reducing fragmentation in the landscape, in building synergies and clustering, and fostering co-ownership of a range of stakeholders of the value chain and financing mechanism'. This led to the emergence of co-funded initiatives such as ERANET-co fund (H2020 instrument) and the African Union Research Grants Programme. The medium term also led to the further development of a joint research agenda and reflections on long-term models for the R&I partnership. The long-term actions aim at the establishment of a fully operational partnership, with more value chain partners and joint ownership in all aspects including funding. Amongst the projects, exploring options for the long term Partnership is the Long-term EU-AU research and innovation Partnership on food and nutrition security and sustainable agriculture (LEAP4FNSSA) project.

1.2 The LEAP4FNSSA project

The LEAP4FNSSA project contributes towards implementation of the roadmap through strengthening the bi-regional cooperation and aiming to set up a long-term platform to facilitate the coordination and implementation of the AU-EU Research and Innovation Partnership on FNSSA. The project activities are divided into five work packages (WP). WP1 of the project provides support and information services to the various structures that govern the bi-regional partnership in FNSSA, and facilitates evidence based decision-making. WP2 aims at creating sub-regional stakeholders' alliances which will identify, within the framework of the Roadmap, the major regional stakes in the domain of FNSSA, translate these into more regional specific research agendas, and put in place a 'sorting house' mechanism for technologies and FNSSA systems improvement. WP3 provides the core information system for the Platform. Major outputs from the WP include the establishment of a database of past and current projects, and the development of a Knowledge Management System (KMS) tool to aid decision-making. WP4 handles external communication of the project, and creates tools to broaden the communication. WP5 involves activities to coordinate the implementation of LEAP4FNSSA of the project and liaison with the European Union. As part of its critical role, WP1 has commissioned two studies, one of which focusses on analysis of the projects funded to support the Partnership, to contribute towards a report for the sixth EU-AU Summit in 2020.

In WP3, LEAP4FNSSA has developed a database of projects funded under the Partnership and of other projects relevant to the FNSSA Partnership's scientific themes. The database contains several details for each project including, among others: general description of the projects, links to their websites, categorisations related to the Roadmap themes and subthemes, geographical coverage and partners

involved. The database has the possibility to do simple and advanced searches listing projects based on common keywords. As of August 2020 the database included 208 projects. Based on a range of criteria outlined in section 2.1 of this report, 105 projects were selected for this study.

1.3 Objectives of the study

The objective of the study is to provide critical insight and stocktaking on the extent to which ongoing and past projects have contributed to the goals of the partnership in implementing the roadmap. Specifically the study seeks to;

- Analyse the projects in terms of how they contribute to the FNSSA Roadmap and the thematic priority areas, geographic scope of the projects, actors involved and the funding instruments and arrangements.
- Analyse the extent to which the projects relate with broader regional and international policy objectives including the SDGs.
- Discuss the projects' alignment with the FNSSA partnership 'values' and potential for policy influence, innovations and societal impact.

2.0 APPROACH TO THE STUDY

2.1 Projects selected

To determine the projects to include in the analysis, we engaged in a consultative process with some partners within the LEAP4FNSSA project, and email exchange with project partners. The database currently has 53 so-called “Partnership projects” which include the LEAP-Agri projects (27), the African Union Grants Phase 2 Projects (17) and H2020 projects. Based on discussions with stakeholders, African Union Grants Phase 1 projects were included since they are part of the broader partnership although they were not designed to directly give answers to the roadmap themes and subthemes (since these were identified at a later stage). The DG DEVCO (Development Smart Innovation through Research in Agriculture) DeSIRA Pillar 1 projects were also included for the same reasons.

The final projects included in the study, align with the terms of reference for the study, which stipulates ‘*projects funded under the umbrella of the R&I FNSSA Partnership or aligned with the priorities and values of the HLPD FNSSA Roadmap*’. Table 1 shows the categories of projects and how to find them in the database. For the purpose of this study we call the five project categories in the first column of the table, Programmes, and the individual projects analysed ‘projects’. The full project list is in Appendix 1.

Table 1: Projects included in the study

Project category/Programme	Number in database as at 15 July	Location in database
LEAP-Agri projects	27	Search “leap-agri” in the “Partnership” projects - also in https://www.leap-agri.com/?page_id=51
Other H2020 projects	27	As per appendix 1
African Union Grants Phase 2 2016 & 2018	17	Search “AURG 2” in the “Partnership” projects
African Union Grants Phase 1	15	Search “AURG 1” in “All projects”
DeSIRA Projects	19	Search DeSIRA in “All projects”
TOTAL	105	

LEAP-Agri is a joint Europe Africa Research and Innovation initiative related to FNSSA funded under H2020. Under LEAP-Agri, 27 projects covering a range of food systems topics were funded. The projects involve more than 160 African and European partners from 20 countries, and contribute towards the knowledge base to support the HLPD for implementing the FNSSA roadmap (LEAP-Agri, 2018).

The category “Other H2020” projects, has different kinds of H2020 funded projects. These include projects funded under the umbrella of another ERA-NET Cofund project, namely FOSC (Assessing the impact of climate change on food and nutrition security and designing more sustainable and resilient food systems in Europe and beyond), and projects funded within H2020 “regular” calls such as Food systems Africa, Sustainable intensification in Africa, Diversifying farmers’ income through small bio-based concepts. The list of the H2020 projects related to FNSSA and Africa included in this study are

listed in Annex 1. H2020 projects are usually of a large magnitude and include Research and Innovation action (RIA) projects such as the South and Tropical Atlantic Climate-Based Marine Ecosystem Prediction for Sustainable Management (Triatlas), Innovation Actions (IA) such as Edible Cities Network Integrating Edible City Solutions for social resilient and sustainably productive cities (Edicitinet), and Coordination and Support Action (CSA) projects such as the LEAP4FNSSA project.

The African Union Research Grants (AURG) Programme was initiated to support Pan African research and development through grants and direct funding. The programme advances goals of sustainable development and building and strengthening Africa's S&T capacities through research and innovation. Supported by the EU Pan-African programme, and managed directly by the African Union Commission, the programme has so far implemented Phase 1 and Phase 2 projects. Phase 1 calls were launched in 2011 and 2012, and focussed on; (i) Post Harvest and Agriculture, (ii) Renewable and Sustainable Energy (iii) Water and Sanitation in Africa. Phase 2 calls were launched in 2016 and 2018 focussing on Sustainable Intensification and Agriculture & Food Systems for Nutrition respectively.

The objective of the DeSIRA initiative is to contribute to climate-relevant, productive and sustainable transformation of agriculture and food systems in low and middle-incomes countries, with special focus on Africa. Under pillar 1 of DeSIRA called "Research and innovation in agricultural and food systems", a first set of 19 projects in specific fields such as agroecological intensification, agroforestry, livestock, carbon sequestration, etc. has been launched. The projects follow pillar 1's objective to support climate-resilient and development-smart innovations in agriculture for sustainable rural transformation through the use, access, and generation of scientific knowledge. The research and innovation projects are identified either by the EU delegations in the countries based on national or regional priorities or by the European Member States within a co-funding framework. Research organisations and other actors (NGO, Farmers' organisations, private sector) interact with EU delegations and European Member State to propose and elaborate projects. The funding of DeSIRA comes from the European Commission (Development Cooperation Instruments) under the Global Public Goods and Challenges Thematic Programme.

2.2 Funding instruments overview

There is a variety of different mechanisms, projects and initiatives implemented with the final aim to fulfil the goals of the AU-EU Research and Innovation Partnership on FNSSA. Figure 1 is an illustration of funded projects under the umbrella of the R&I FNSSA Partnership or aligned with the priorities of the HLPD FNSSA Roadmap (with reference to their respective funding instruments) in chronological order (modified from the FNSSA partnership infographic produced 2018, <https://ec.europa.eu/research/iscp/index.cfm?pg=africa>).

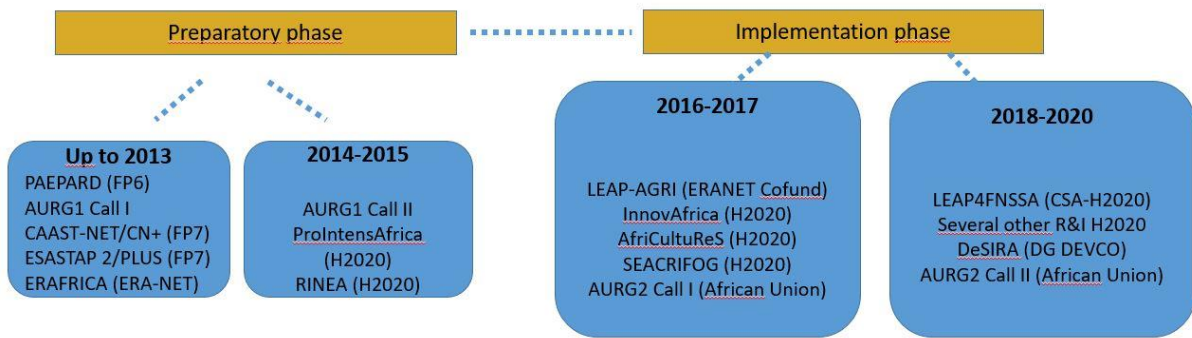


Figure 1: Projects under the umbrella of the R&I FNSSA Partnership

An illustration of different types of FNSSA-related projects (research, innovation, policy dialogue, multistakeholder partnerships, institutional partnerships etc.) that have been initiated by the EU and/or AU can be found in Figure 2. Note that in this figure several other funding mechanisms are listed, and respective projects can be found in the LEAP4FNSSA database. However, as previously explained, this study only includes 105 projects from the database which fall under the LEAP-AGRI, other H2020, AURG1 and 2 and DeSIRA programmes.

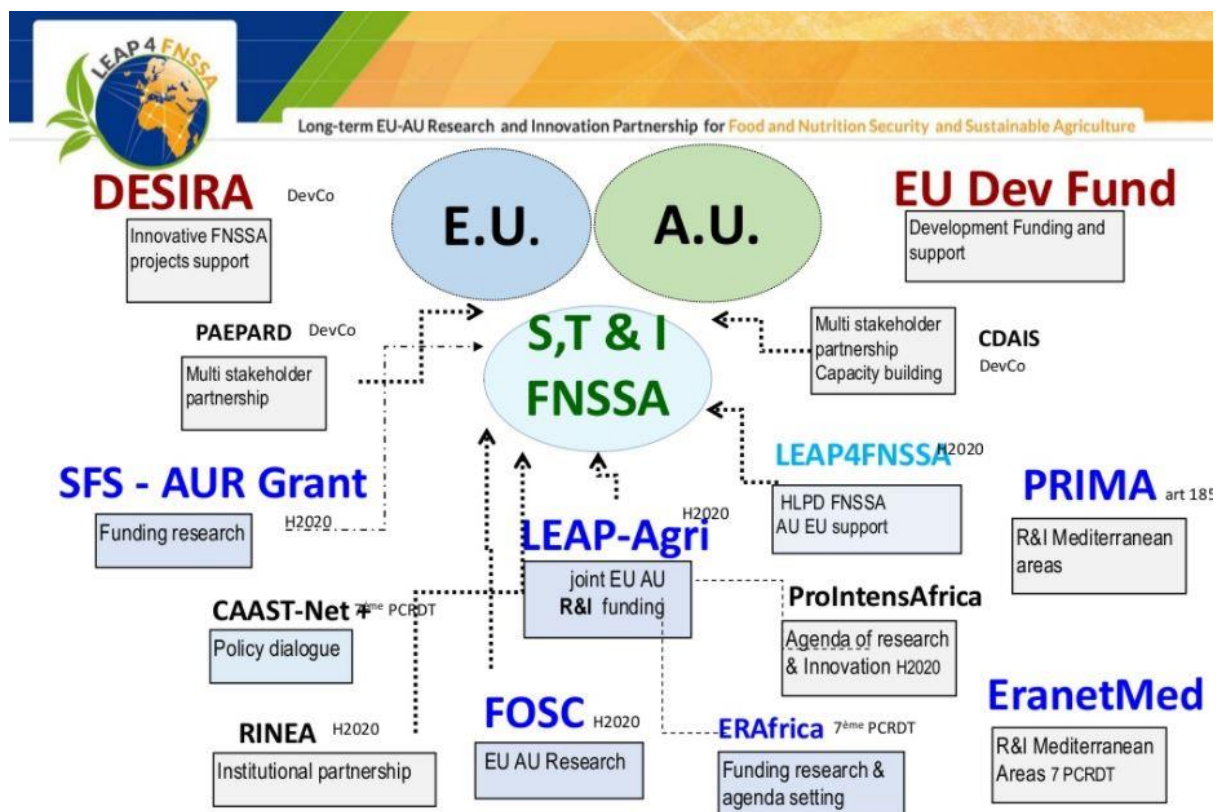


Figure 2: EU-AU FNSSA related initiatives

2.3 Information sources considered

This study and the analyses are guided by the terms of reference developed by WP1 of the LEAP4FNSSA project and draws on information that was publicly available. The main sources of information used for the report is the LEAP4FNSSA project database, the websites for the FNSSA related projects in Africa as recorded in the database, and some of the project information reviewed. Due to the short time frame and also because there was no real need based on analysis of the information we had, we did not interview any key informants. We however, contacted some LEAP4FNSSA project members and HLPD FNSSA working group members to assist with the delineation of the projects to include in the study. The results of this study, and the related conclusions, are thus subject to limitations of the information used. The database provides for each project the information listed in Table 2.

Table 2: List of variables in the LEAP4FNSSA database and used in the study

Variable	Classification in database	Treatment for analysis in study
Identifier		Captured as per database
Project Name		Captured as per database
Acronym		Captured as per database
Project start date	Exact dates	Only year captured
Project end date	Exact dates	Only year captured
Project status	Ongoing or completed	Coded
Type of project	Development and innovation oriented research, Applied research, Institutional capacity building, Strengthening partnerships and alignment, Personal capacity building, Fundamental research project	Can have more than one classification in database, coded
Roadmap theme-broad	Sustainable intensification, Agric & food systems Trade and markets, Cross cutting	More than one category possible
Roadmap theme-detailed	Projects classified in sub-themes	More than one category possible - We expanded the sub-themes based on descriptions on pages 9-12 of the road map for all four thematic areas
Programme	LEAP-AGRI, Other H2020, AURG1, AURG2, DeSIRA	Captured as per database, coded
Keywords		Captured as per database
Location	Country	Captured as per database
	Region	Captured as per database, coded
Budget	Given in Euros	Values missing for some projects
Main Funder		Captured as per database
Co-Funder		Captured as per database
Coordinator	Given as name of organisation	Reclassified into European or African, coded

Partners	Research organisations, Universities, Government Agency, Private sector, Expert network, Other	Classified and captured as numbers under each category
Project description	Includes objectives, background and main objectives	Copied from the project database and/or website
Outputs - Not in database	No. of documents on the project website	Counted based on downloads for task 3.2, elaborated further in Section 3.6
Alignment with SDGs	Not in database	As described in section 2.4

Although most of the information in Table 2 is already in the LEAP4FNSSA database, it was not possible to export it directly into Microsoft excel in a format suitable for analysis. For the study, we re-entered information for all variables into Excel.

2.4 Data analysis method

The data was analysed using a combination of qualitative and quantitative methods. The data recaptured from the LEAP4FNSSA database website into excel was exported to SPSS. In SPSS we then coded the data and labeled the different values. For binary and multiple categorical variables, we computed frequencies. These variables included thematic priority areas, project status, the programme under which the project is funded, and the type of project as coded in the database. To classify the projects into themes and sub-themes elaborated in the roadmap (pages 9-12), during development of the database, all the project titles, abstracts, descriptions and objectives were considered. Keyword search combinations were used to determine the extent to which specific themes and sub-themes were addressed in each project. Together with understanding obtained from reading the text, and validation by three persons, this enabled a standardised way of abstracting appropriate information from each of sources, for analysing the content. We captured for each project the relevant themes and sub-themes in an excel spreadsheet before also exporting them to SPSS for computing frequencies. The analysed categorical data is presented in the form of frequency tables, and figures. Quantitative variables included the project budgets, the number of partners under each project category and the number of documents on the websites emanating from each project. For the partners, we considered each of the partners listed on a project website, and with the aid of their websites, we were able to classify them under the different categories. Thus for each project we were able to count and record the number of partners under each category to derive a continuous variable. For all the continuous variables, we computed the mean, standard deviation, maximum and minimum values in SPSS. We also performed correlation analysis between the budget and the number of project partner variables.

To analyse the extent to which the projects address the SDGs, we did a word search in the project description and objectives using a combination of key words from each of the 17 SDGs as they are articulated in the Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators (UN Economic and Social Council, 2016). We counted the number of projects whose

descriptions included a combination of key words for each SDG, and also recorded the number of times the keywords appeared in all the project descriptions and objectives.

3.0 RESULTS

3.1 Overview of the projects financed

The LEAP4FNSSA database includes data on ongoing and completed projects for the different programmes. About 80% of the projects are classified as still ongoing, 14% have been completed and 6% of the projects have just started. The completed projects are for AURG1, whilst projects scheduled to start in August 2020 are part of 'other' H2020 projects. The project start years range from 2012-2020, whilst the completion years range from 2015-2025. Almost 50% of the projects have completion dates of either 2020 or 2021. Due to disruptions caused by the COVID-19 pandemic, it is likely that most of these projects will not be completed on schedule, thereby affecting the long-term goals in implementation of the roadmap.

Figure 3 shows the classification of the projects in the LEAP4FNSSA database according to their type, and the share of the budget for different project types. More than one classification is possible per project. The explanation of the classification of the projects used in the database is as follows;

Fundamental research project- Project dominated PhD- and Postdoc level research activities. It is science/curiosity driven.

Applied research project- Research on real world problems, coming up with solutions by generating knowledge, more demand driven research. More focusing on reports, technologies, than on scientific publications. Research in multi-actor partnerships (private sector, NGO's, end users).

Development and innovation oriented research project- There is clear focus on development, not so much on scientific knowledge generation. But use specific knowledge for system improvements, technology transfer, etc. Very much demand driven, working with stakeholders. Puts scientific knowledge in practice. Research uptake is embedded, and there is capitalization of scientific knowledge.

Institutional capacity building project- Strengthening research and training institutions by developing better educational programmes at Universities, Strengthening research infrastructure, including staff capacity and management. These kinds of projects can have a 'personal capacity building' component as well, and include tailor made training at institutional level.

Personal capacity building projects- Focus on training of individuals and groups and student exchange projects. Delivered in the form of regular studies, short training or tailor made training.

Strengthening partnerships and alignment projects- These are not research and capacity building projects, but enhance capacity for project management and agenda setting. Examples are the Coordination and Support Action (CSA) project funded by EU.

Analysis of the data shows that only a few of the projects (11,4%) are classified as fundamental research projects, whilst the majority are classified as development and innovation oriented research, implying that they are more of a problem solving nature than pure science as an end. Only a small percentage of the projects are classified as having a focus on strengthening partnerships and alignment. Such projects include LEAP4FNSSA, TRIATLAS and Supporting EU-African Cooperation on Research Infrastructures for Food Security and Greenhouse Gas Observations (SEACRIFOG).

Up to 69% of the projects are classified under one category. About 31% of the projects fall into two categories, for example an applied research project can have both components of institutional capacity building and personal capacity building. None of the projects have more than two project type classifications.

Figure 3 also gives an indication of the distribution of funding for different types of projects. It shows that projects for strengthening partnerships and alignment have a relatively larger budget share than their prevalence, whilst fundamental research projects have a much smaller budget share compared to their prevalence. The greatest share of the budget was allocated to projects classified as Applied Research and Development and innovation oriented research projects.

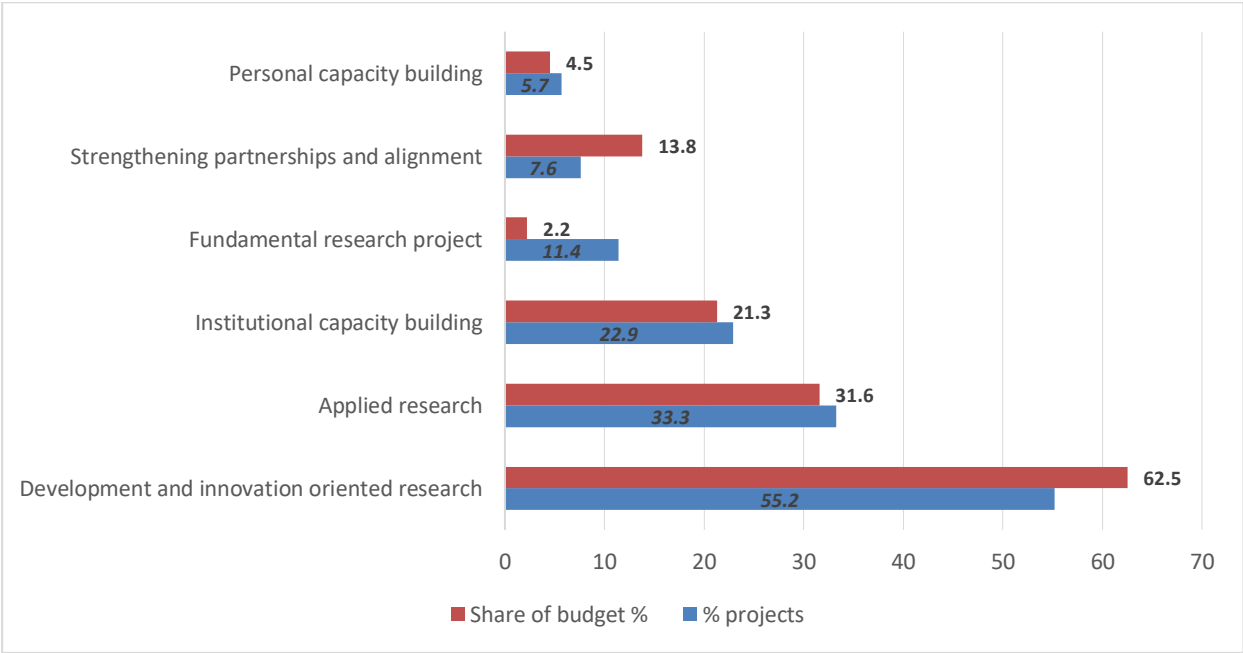


Figure 3: Type of projects as classified in database and % frequency and share of total budget spend¹

When analysed according to funding scheme it appears as though LEAP-Agri has projects that are most versatile in project type, whilst all the AURG2 projects are classified into one project type category (see Figure 4), most predominant of which is development and innovation oriented research.

¹ Projects can be classified under more than one category so both % add up to more than 100%

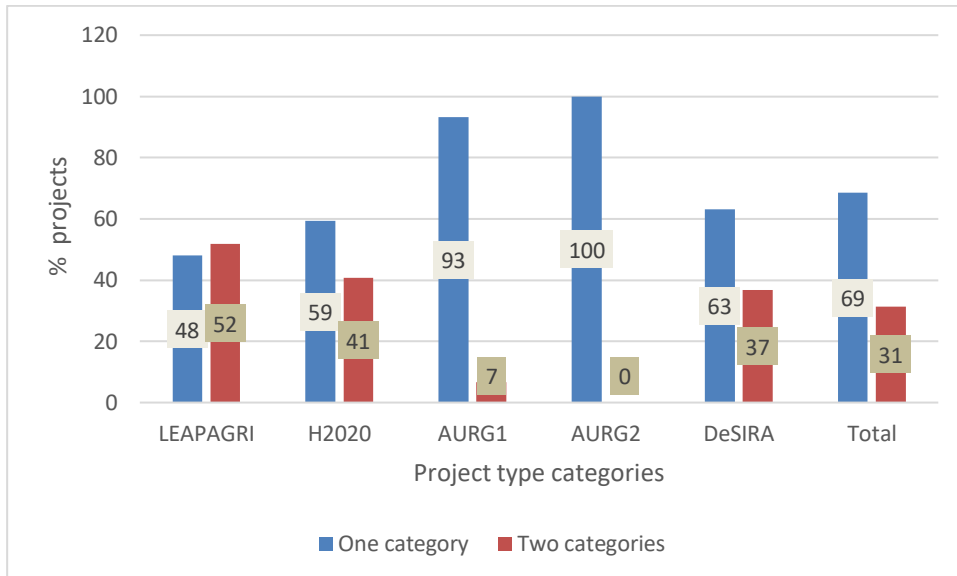


Figure 4 : Number of project type categories by Programme

3.2 Thematic focus

The roadmap proposes Sustainable intensification; Agriculture and food systems for nutrition; Expansion and improvement of agricultural trade and markets; and Crosscutting topics as the four priority themes for a joint research agenda for the EU-Africa R&I partnership on FNSSA. Figure 5 shows that most of the projects are predominantly addressing the theme of sustainable intensification. Note that one project can fall into more than one themes. There is least focus on trade and markets. Cross cutting issues as laid out in the roadmap are addressed in only 18% of the projects. Despite most of the projects being of a multi-disciplinary nature, up to 56% of these projects address issues relevant to only one theme. Only 8% of the projects have focus that straddles up to three thematic areas of the roadmap (see Fig 6), and none of the projects were classified as addressing all the four thematic priority areas.

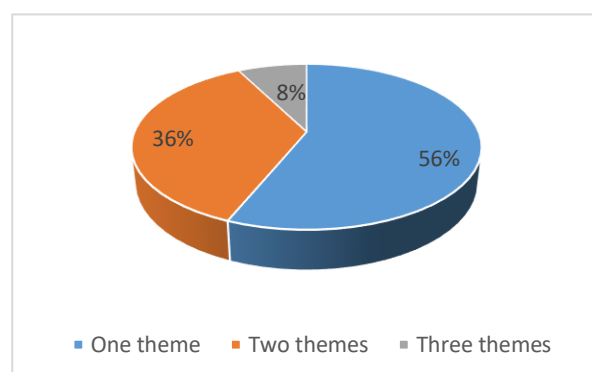
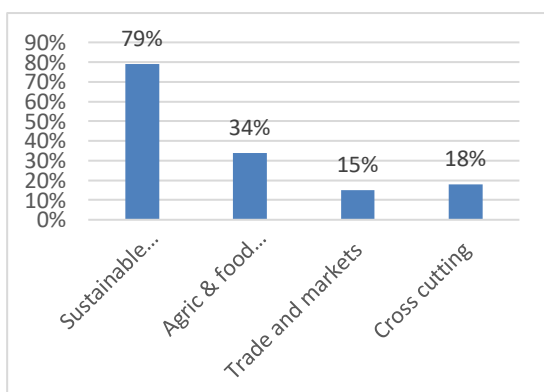


Figure 5: Thematic focus (%)²

Figure 6: Number of themes covered (%)

Figure 7 shows the programmes related to the projects that contribute to each theme. This analysis should however be considered bearing in mind that the programmes themselves have different budgetary allocations, and sizes of the projects under different programmes vary. In addition, programmes that have more projects are also likely to straddle more thematic areas, whilst some programmes were also designed with specific focus on some roadmap themes e.g. AURG 2. All programmes have some projects that fall within the sustainable intensification theme. LEAP-Agri and other H2020 projects account for a greater proportion of the sustainable intensification theme. In the agriculture and food systems theme, LEAP-Agri projects accounts for almost 39% of the projects classified under the theme. The AURG1 programme has the least proportion under the theme.

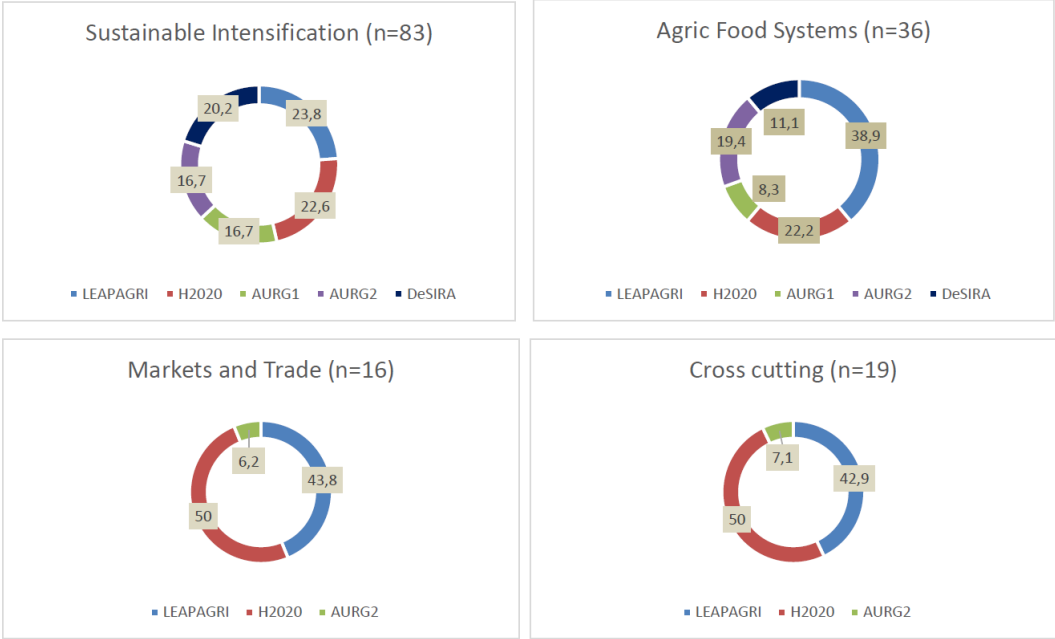


Figure 7: Distribution of projects by programmes within different themes

For the markets and trade theme, about half of the projects are under the “other H2020” category and almost 44% are from the LEAP-Agri. No projects from DeSIRA and AURG1 fall under the markets and trade and cross cutting themes classifications. This is expected for the AURG1 projects as the call for proposals invited projects under the theme Sustainable Intensification. Similarly, DeSIRA projects include specific fields such as agroecological intensification, agroforestry, livestock and carbon sequestration.

We did further analysis for the sub-themes within each thematic area. Table 3 shows an analysis of the projects’ coverage of different subthemes, considering the percentage of projects as a proportion of all the 105 projects analysed. The results confirm the dominance of the sustainable intensification theme in terms of the focus of funded projects. Within the theme itself, there is a larger focus on

² Some projects cover more than one thematic area so figures add up to more than 100%

research for the sub-themes land, soil and water management and crop and livestock breeding. The fact that most of the sub-themes are covered shows the interconnectedness of different aspects of the environment and food production.

Under agriculture and food systems for nutrition, more than a quarter of the projects address issues of the value chain, also reflecting the focus towards holistic thinking in food and agricultural systems. More than 11% of the projects focus on the sub-theme improving nutritional value of food, and noticeably none of the projects are classified as addressing the sub-theme physiological basis of nutrition. Public-Private Partnerships (PPP) on improved nutritional quality are prevalent in less than 5% of the projects.

Of particular note is that few of the research projects address issues pertinent to the theme of markets and trade. A possible cause for this could be the limited involvement of private sector partners in projects, an issue that is further discussed in section 3.4. Development of markets and intra and inter regional trade, however, plays an important role in economic growth and increasing farmer incomes and employment creation in the agricultural sector for poverty alleviation. The roadmap suggests that Europe's experience in developing intra-regional trade could offer some valuable lessons for Africa, but this could require more deliberate efforts to ensure that the matter is addressed through research and innovation actions.

Although the cross cutting themes are not classified as being the major focus of the projects as reflected in Figure 5, analysis of specific areas within the theme shows that integration of research and innovation activities and engagement between R&I communities in the two continents dominate the theme activities. Considering the importance of gender in agriculture, and of technology uptake and scale up, we added them as sub-themes for analysis in Table 3 although they are not articulated as sub-themes in the roadmap.

Gender is mentioned in the roadmap under cross cutting issues as part of efforts to strengthen collaborative capacities of R&I communities. Gender inequality is one of the major constraints to development of agriculture and household food and nutrition security on the African continent. Despite this, our analysis of the project text showed that less than 8% of the projects address gender as research focus and mention it in the objectives and project description. However, in most of the project proposals, researchers are required to state how they will ensure gender mainstreaming in the research, so had we extended this search to whole project documents, we would probably have found more mention of gender.

The AURG calls mention gender under relevance as follows, "A score of 5 (very good) will only be allocated if the proposal contains specific added-value elements, such as promotion of gender equality and equal opportunities".

In the LEAP-Agri call, it is stated as follows, "*The projects are expected to integrate a **gender approach** in their research and to pay special attention to **gender mainstreaming**. This entails recognising the different roles of women and men and acknowledging the complementarity of both, in order to obtain full gender equality*".

Similarly, calls for projects also encourage engagement of youths as part of the project activities.

Table 3: Projects by detailed sub-thematic areas

Theme	Sub-thematic areas	% total projects (n=105)
Sustainable Intensification (83 projects)	Ecological intensification approaches	16,2
	Identification and breeding of animals and crops to maintain/increase productivity	22,9
	Animal and crop health	13,3
	Soil, water, land and input management	28,6
	Marine ecosystems and aquaculture technologies	3,8
	Organizational innovations	12,4
Agriculture and food systems (36 projects)	Improved food value chains	25,7
	Improved nutritional value	11,4
	Consumer behaviour and education	7,6
	PPP on improved nutritional quality	4,8
	Physiological basis of nutrition	0,0
Markets and Trade (16 projects)	Evidence-based decisions on non-tariff barriers to trade	1,0
	Methodologies for food safety issues	1,0
	Bio-economic strategies	8,6
	Global value chains and markets	5,7
Cross cutting themes (19 projects)	Coordination between European and African FNSSA R&I projects	2,9
	Integration of research and innovation activities	7,6
	Engagement between African and European R&I communities	6,7
	Social and cultural features of food production systems	4,8
	Gender	7,6
	Technology uptake and scale up	64,8

We also analysed the extent to which projects make reference to Technology uptake and scale up in the description and objectives. It is noteworthy that almost 65% of all the projects have aspects of technology uptake and scaling up according to project objectives and descriptions. This enables research-driven problem solving and increases the potential for impacts of the projects in the long-run. It is also important to highlight that most of the projects have a budget for knowledge dissemination and uptake activities.

Considering that all the projects qualified for classification into at least one thematic area, and about 44% of the projects cover more than one theme, it can be concluded that all the funded projects are aligned with the thematic priority research areas identified in the roadmap. Furthermore, most of the

cross cutting themes are addressed within the projects, although the extent varies. Multi-disciplinary projects of a developmental research and innovation nature have more potential to address multiple thematic areas of the roadmap and also have greater potential for innovation. Embedding innovation processes into research projects will enhance the prospects for scaling up and uptake of technologies for addressing societal challenges in FNSSA. The collective efforts in capacity building at both institutional and individual level will, in the long-term contribute towards a strong, balanced and mutually beneficial FNSSA R&I partnership.

3.3 Geographical scope

In total, the projects considered in this study involve collaboration between partners in 45 African countries and 21 European countries. Analysis of the location of the projects in Africa shows that most of the projects are covering more than one location (Figure 7). This is expected because the way the different calls for proposals were designed required collaboration between at least three partners. The AURG2 required a minimum of two African countries and one European partner, whilst LEAP-Agri required collaboration amongst at least two African and two European countries. East and West Africa are the predominant locations for most of the projects, whilst less than 10% of the projects cover North and Central Africa. This observation contrasts with the distribution of past projects where there was a dominance of East and Southern Africa, with West Africa being under represented (Albergel et al., 2018), suggesting an improvement in recent years.

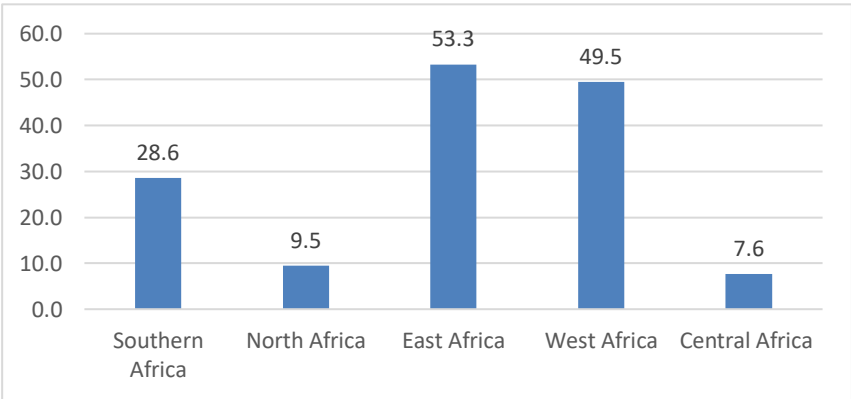


Figure 7: Location of funded projects in Africa (n=105)³

In line with the high regional concentration of projects in East and West Africa, further analysis of the information (Figure 8) shows that partners from Kenya and Uganda participate in the highest number of projects in Africa followed by South Africa and Ghana. The majority of the projects are located in both former Francophone and Anglophone countries. Notably, despite Portugal being involved in up to 13 projects, there are only five projects in Mozambique and two in Angola. Mozambique and Angola both did not participate in LEAP-Agri although Portugal was amongst European countries that participated. Of the 45 African countries, 14 participate in only one project each, whilst five participate

³ Most projects are implemented in more than one African region

in two projects each. This reflects a high level of concentration of the projects amongst certain African countries.

On the European side, France is involved in the highest number of projects followed by the Netherlands and Germany (Figure 9). Seven of the 21 European countries have five or less projects each, also reflecting a high level of concentration of projects in some countries. The distribution of projects amongst European countries confirms a dominance previously noted by Albergel et al. (2018) amongst Western European countries, and limited participation of Eastern European countries. For example, there are no projects where partners from countries such as Bulgaria, Poland and Latvia participated, whilst Croatia has one project and Czech Republic has two.

Although this project did not explore the reasons for concentration of projects in certain countries, it is possible that it could be caused by regional and sub-regional disparities in volume or level of agricultural investment, the size of actors in the sector with focus on R&I and levels of regional support to the sector, and agri-financing. From a bi-continental perspective, however, there seems to be a balance between the number of projects the top European and African countries participate in. The top 10 countries have almost the same number of projects for both continents, although the projects are not necessarily the same. The top-most country in Africa, Kenya has 38 projects, whilst in Europe France has 36 projects.

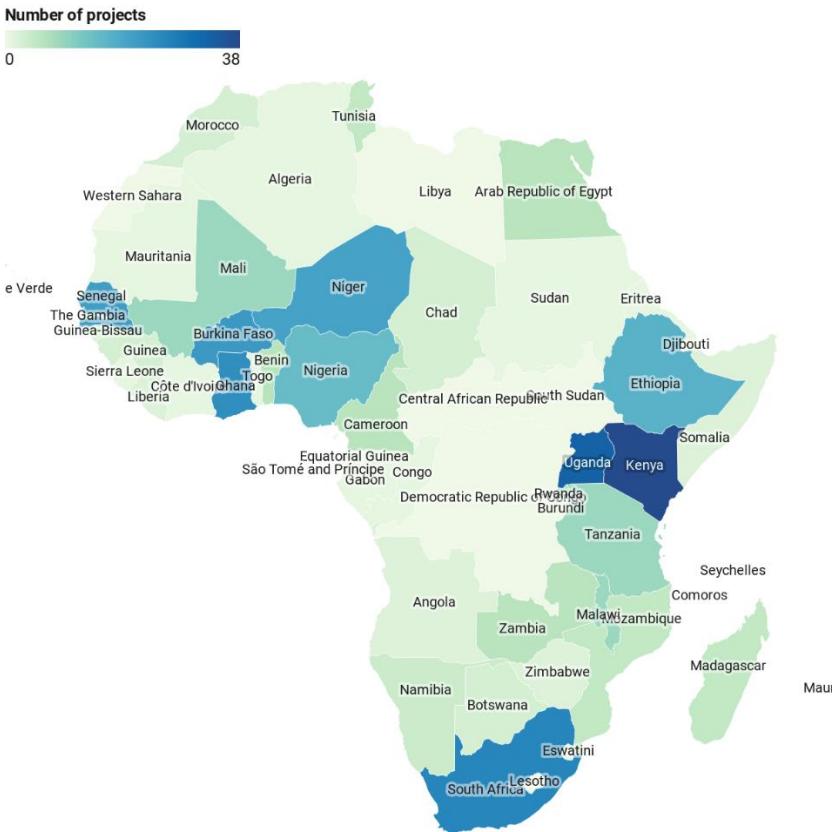


Figure 8: Distribution of analysed projects in African countries

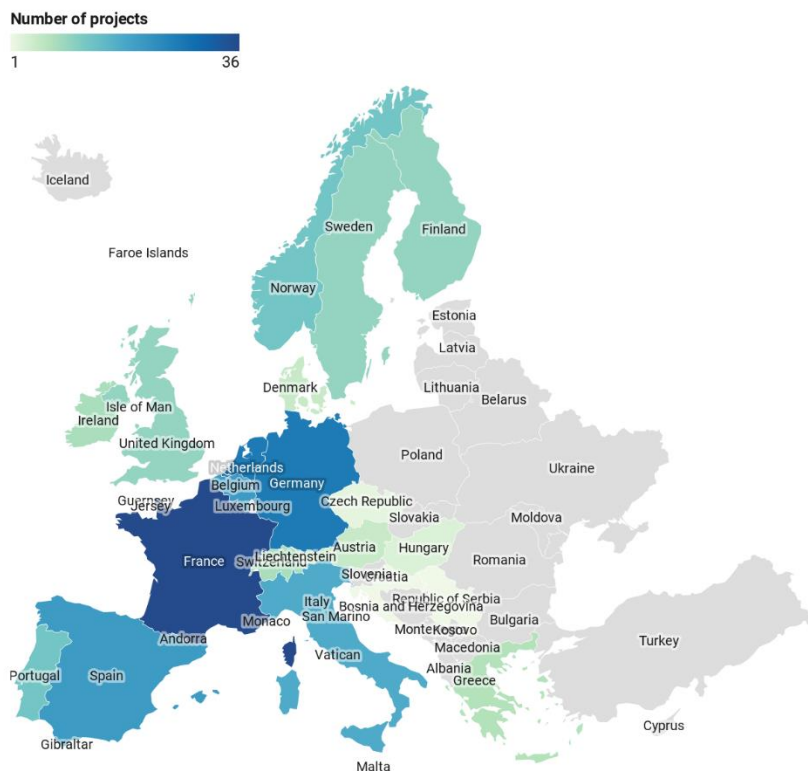


Figure 9: Distribution of analysed projects in Europe

3.4 Partners/Actors involved

The Roadmap emphasises the importance of multi-sectoral actors and representation of the full value chain actors for a successful R&I partnership. Public and public-private partnerships are explicitly stated as important to propel innovation processes and facilitate financing of the partnership in the long term. In the LEAP4FNSSA database, the partners are classified into different categories as shown in Table 5. Analysis of the actors shows that there is a wide range of partners involved in the projects. On average, a project has up to 9 partners, and the number of partners range from two to 34. It is noteworthy that some of the programmes recommended minimum and maximum number of partners. AURG2 required a minimum of three partners, and recommended that partners not exceed five. This may have reduced the participation of private sector and civil society organisations. Furthermore, proposals where African partners came from two Regional Economic Communities (RECs) had an added advantage in the selection process.

The most common actors in the projects are universities and research organisations, respectively making up about 34% and 32% of the total partners in the projects. It is noteworthy that the private sector partners make only about 9% of the total, confirming low participation, previously noted by other studies (Kraemer-Mbula et al., 2018; Mugabe et al., 2018). The low participation of the private sector is despite the fact that programmes such as LEAP-Agri allowed private sector partners as applicants or part of the consortium, particularly for ensuring the uptake of research outputs and scaling up of technologies. The AURG calls on the other hand did not make mention of the private sector, but recommended a maximum of five partners. FNSSA expert networks such as Regional

Universities Forum for Capacity Building in Agriculture (RUFORUM) and African Forum for Agricultural Advisory Services (AFAAS) make up just 4% of the total partners in projects.

The category “Other” in Table 4 includes organisations CGIAR centres such as International Water Management Institute (IWMI), International Livestock Research Institute (ILRI), funding agencies from outside the two continents e.g. the Canadian International Development Research Centre (IDRC), and NGOs and community organisations.

Table 4: Type of partners and numbers per project

	Average/ project partners	Maximum partners	% per project
Research organisations	2,8	15	31,7
Universities	2,9	16	33,6
Government Agency	1,0	18	11,7
Private sector	0,8	13	9,4
Expert network	0,4	5	4,3
Other	0,8	8	9,4
All partners	8,7	34	100

Analysis of the partner composition by programme (Table 5) shows that the “Other H2020” projects have the highest number of average partners. This is to be expected given that coordination and support action projects such as SEACRIFOG and LEAP4FNSSA involve more than 20 partners. The AURG programmes are the ones with the least number of partners. As previously indicated the calls stipulated a minimum of three partners and recommended less than five maximum.

Table 5: Partner composition by programme

Programme	Average/programme	Max	Private sector partners average
LEAP-Agri	5,6	16	0,48
Other H2020	19,1	34	2,3
AURG1	4,3	8	0,27
AURG2	4,7	11	0,24
DeSIRA	5,3	13	0,16
All projects	8,7	34	0,8

Analysis of the coordination arrangements for the projects reflects a dominance of European partners in LEAP-Agri, Other H2020 and DeSIRA (Figure 10). Overall, European coordinators lead two thirds of the projects, whilst African partners are only lead coordinators in a third of the projects.

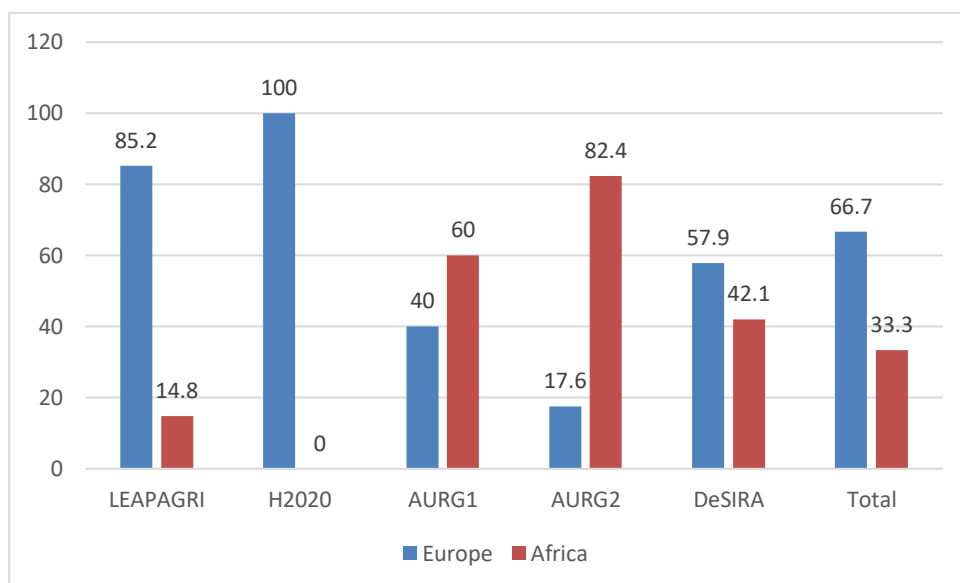


Figure 10: Lead coordinator per programme and overall

3.5 Project budgets and funding

The size of the budgets are delineated according to the different programmes, and will vary according to the scope of the project and the nature of the funding. For example, African Union Grants Projects are designed as small projects, whereas H2020 projects are usually larger projects. Consequently, there is wide variation in the budget for the different projects analysed. The LEAP4FNSSA database has budget information for most of the projects but not for all. Table 6 shows that the budgets for the projects analysed ranged from a minimum of 581 000 euros to a maximum of more than 15 million Euros. The Other H2020 projects had on average the highest budget amounts, whilst the AURG1 had the least budget per project.

Table 6: Budget by programmes (n = 75)

Programme	Average budget Euros	Max	Min
LEAP-AGRI	926 158	1 214 000	738 733
Other H2020	6 547 323	15 151 515	1 870 925
AURG1	943 603	1 109 100	635 401
AURG2	698 918	994 000	833 876
DeSIRA	4 258 481	9 000 000	581 000
All projects	3 466 288	15 151 515	581 000

There is a strong positive correlation between the number of partners and the project budget (Pearson $R = 0.729$). However, this is based only on the 75 projects for which the budget figures were available for inclusion in the study.

About 60% of the projects do not have any co-funders listed in the database, suggesting that most, if not all, of the monetary funding is coming from the main funder. In the case of LEAP-AGRI projects,

the core funders were from 9 African and 10 European countries, and the Directorate-General for Research and Innovation (DG RTD) (H2020) is listed as co-funder. In other projects, where co-funders are listed these include CGIAR centres such as International Livestock Research Institute (ILRI), International Potato Centre, Global Alliance for Improved Nutrition (GAIN) and United Nations Children's Fund (UNICEF). It is important to note that not all information on co-funders is captured in the database, and that some non-monetary/in-kind contributions to projects are not reflected in the database records. For example, DeSIRA projects normally require co-funding, often around 10% but could be from 5 to 20%.

3.6 Project outputs and outcomes

Initially, we intended to analyse some of the outputs and outcomes from the projects. In the implementation of the study we realised that this would not be feasible as most of the projects were still ongoing, and the LEAP4FNSSA database, due to Protection of Personal Data (POPD) regulations does not include publications as they contain author details. In a few cases, it was possible to obtain documents as project outputs from the websites of the projects, but for most of the projects there is no website that exists, and where the websites exists, the projects have not sufficiently produced such outputs that are deposited on the websites.

Based on parallel work being done by LEAP4FNSSA project in task 3.2 to establish an inventory of resources to aid development of a Knowledge Management System, we analysed the number of documents that have come out of some of the projects where applicable. The highest number of documents we found per project was 18 from the Educating the next generation of professionals in the agrifood system (NEXTFOOD) project and 10 from the Development and application of integrated technological and management solutions for wastewater treatment and efficient reuse in agriculture tailored to the needs of Mediterranean African Countries (MADFORWATER) projects. Both projects are still ongoing and are funded under H2020. It is not easy to draw safe conclusions concerning the outputs of the projects and if these reached their initial targets judging only by the number of outputs presented in the respective websites of the projects. This requires a detailed analyses of the obtained results and such kind of work is foreseen to occur in other parts of the LEAP4FNSSA, e.g. in Task 1.4, and when the projects have been completed.

4.0 FROM PROJECTS TO PARTNERSHIP TO IMPACT

For policy alignment, the development of the Roadmap took into cognisance a number of policy initiatives. These include the AU Science, Technology and Innovation Strategy for 2024 (STISA-2024), The Science Agenda for African Agriculture, The EU’s growth Strategy (Europe 2020), the Common Agricultural Policy and the EU’s development Strategy -An Agenda for Change. These initiatives link with the broader global development agenda as laid out in the SDGs. Taking note of a parallel study commissioned by LEAP4FNSSA to analyse the alignment of the roadmap with the various AU and EU policy initiatives, in this study we analyse the extent to which the funded studies are relevant to the 17 SDGs based on the project description and objectives.

4.1 Alignment with the Sustainable Development Goals

Figure 11 shows the number of projects that based on their descriptions align with the different SDGs, whilst appendix 2 show in detail the specific ‘words’ and ‘phrases’ aligning with the SDGs which were counted in the projects.

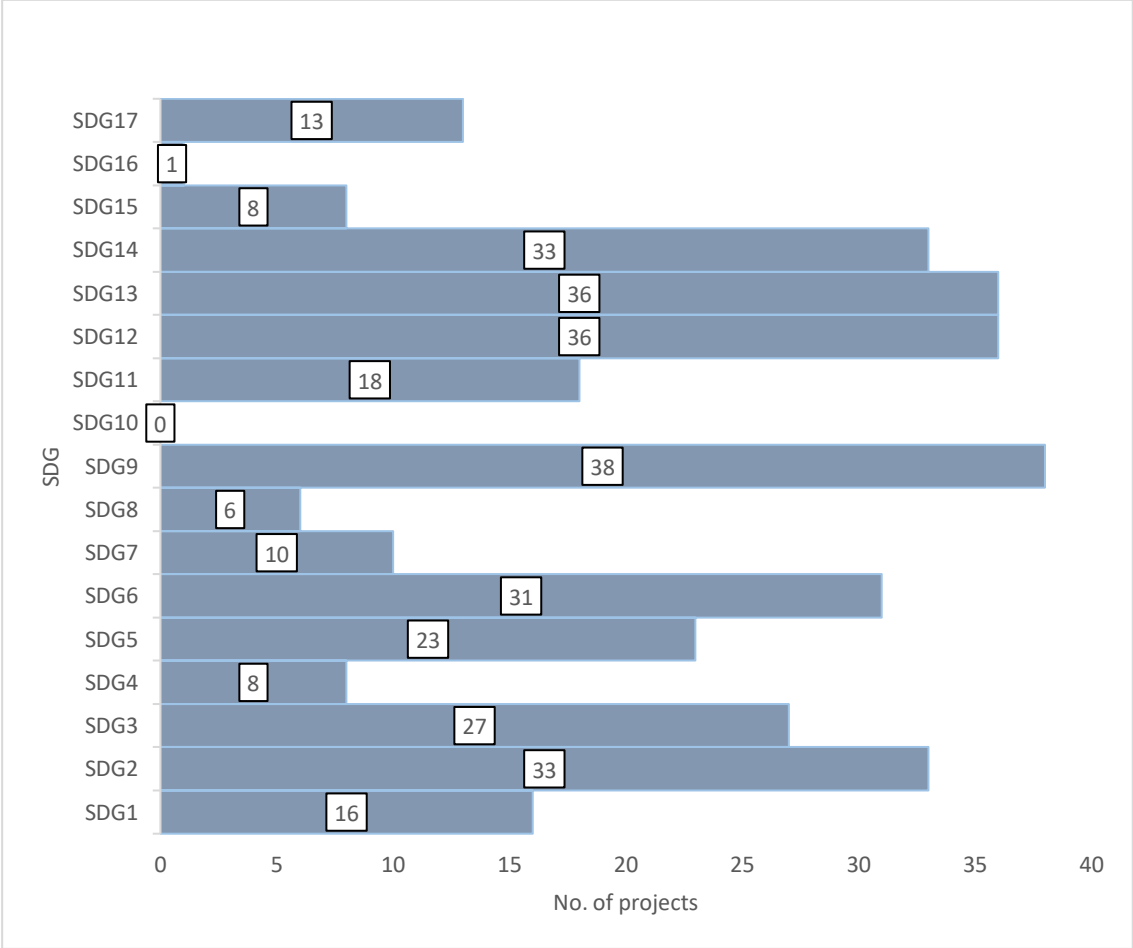


Figure 11: Number of projects aligning with different SDG areas

The projects as a collection address issues that are relevant to 15 of the 17 SDGs, with more than 30 projects aligning with the following SDGs;

- SDG2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- SDG6: Ensure availability and sustainable management of water and sanitation for all
- SDG9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- SDG12: Ensure sustainable consumption and production patterns
- SDG13: Take urgent action to combat climate change and its impacts
- SDG14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

All the projects, and the partnership in its totality and the principles of joint interest, co-governance and co-financing are also an expression of SDG 17, which focusses on partnerships for sustainable development. Although based on the keywords we used, the analysis reveals 13 projects focussing specifically on building partnerships, it can be argued that all the projects within the partnership contribute towards SDG17. Lastly, the relevance of the projects to the different SDGs shows that the partnership priorities align with larger global development goals and contemporary priorities. This alignment has potential to facilitate harnessing of resources for the R&I partnership from global research funding agencies and the private sector in the medium to long term.

4.2 Partnership 'values' expressed

The EU-AU FNSSA partnership is underpinned by some shared values, which are stipulated in the FNSSA Roadmap as key or core features of the partnership. The funded initiatives and the interaction between the partners are thus expected to reflect these features or 'values'. In this section, we discuss these 'values' and how they are expressed in the projects funded.

The roadmap identifies joint interest, co-governance and co-financing as important for activities to be selected in the R&I partnership. Several studies (EC, 2014; Mugabe et al., 2018; Kraemer-Mbula et al., 2018) have highlighted the challenges that arise where R&I partnerships are not balanced. At programme level, the LEAP-Agri and AURG are funded through co-financing mechanisms. Although it is not possible to know the level of involvement of all partners in the design of the projects, it can be assumed that for a good project proposal to be written, both the African and European partners have to be reasonably involved. African partners are often more knowledgeable about the social, cultural and economic context of the study, and this knowledge is critical in the design of the projects. Mugabe et al., (2018) found that African partners in past FNSSA partnerships had concerns that their in-kind contributions to some projects were not adequately valued, and lack of own resources incapacitated them in terms of full participation and decision-making in projects. The establishment of an equal partnership in the long term will come about through ongoing dialogue, increased commitment and continuous learning from past experiences.

The partnership is expected to operate in a food systems approach and across the entire value chain. In literature, the food system is considered as a chain of activities interlinked from production to consumption point, connecting all value chain role players or as a socio-ecological system linking for

example food production with biodiversity conservation, employment creation and the related climate change effects. A functional and efficient food system provides accessible, nutritious and adequate food for all, whilst decently rewarding farmers and farm workers, and supports human health with minimal environmental impacts (Hospes and Brons, 2016). Analysis of the project description and objectives shows that 14% of the projects explicitly mention the phrase 'food system', and 57% mention the phrase 'value chains'. This reflects an awareness of the importance of these approaches for research and innovation. Whilst the involvement of the farmers (who are part of the private sector) is not clear from the analysis we did in this study, it is clear that the participation in projects of other representatives of the private sector is very limited. This suggests that the R&I partnership needs to make more concerted effort to involve all stakeholders in the food system and value chains.

The R&I partnership endeavours for enhanced coordination of research and innovation policies, programmes and funding mechanisms and to build on past experiences to create synergies, identify gaps and optimise investments. Although only 7,6% of the projects in this study were classified as focussing on strengthening the partnership and alignment, there are ongoing efforts at various levels amongst the programmes and projects herewith to enhance coordination. The LEAP4FNSSA project is engaged in an exercise on clustering of projects to enable cross learning, whilst programmes such as the LEAP-Agri have activities embedded in them that will allow partners from different projects to come together and share knowledge and experiences. It is thus expected that through different efforts of stakeholders and the FNSSA Working Group, there can be improved coordination of initiatives.

Another key feature of the partnership is the integrated approach, which is reflected through cross cutting nature of research and innovation capacity building actions. Most of the research projects analysed in the study are of a multi-disciplinary nature and make mention of innovation processes. It is however not clear to what extent these projects will be able to effectively stimulate local innovation processes, as they are still ongoing or in early phases.

Regarding the diversity of initiatives, this includes duration of initiatives supported, selection process for projects, public-private engagement, diversity of collaborative arrangements and financing mechanisms and the nature of research innovation and capacity development initiatives supported. The projects funded by the five different funding schemes analysed in this study had different financing mechanisms and collaborative arrangements. There is also a wide variation in the types of research projects including focus on animals, plants, soils, water, marine systems and aquaculture. There seems to be sufficient coverage of the sustainable intensification and food systems themes, although there is need to increase support for projects and initiatives that focus on markets and trades and other pertinent issues such as gender research and public-private partnerships. Regarding the selection process for projects, this varied across the programmes. For instance DeSIRA adopted a bottom-up approach, giving more decision power to local EU delegations which are in close contact with local authorities and know their thematic priorities.

The general conclusion reached at this stage is that there is evidence of expression of partnership values through the projects funded, the way the funding programmes are structured and through some project specific actions. This area will however require a more detailed analysis which includes engagement of the critical stakeholders on both continents to gain better understanding of how the Partnership is experienced or perceived. An interim evaluation of the Partnership conducted by the

Research and Innovation Network for Europe and Africa (RINEA) in 2017 indicated that some of the project leaders had a vague understanding of the partnership. This was also confirmed by the monitoring and evaluation results of the partnership presented by the LEAP4FNSSA project at the HLPD senior officials meeting in November 2019 in Addis Ababa. The same report however, also notes that the studies analysed at that time were contributing to the four thematic priorities.

4.3 Projects' potential for impact and policy influence

Impacts of research, innovation and capacity building are often only recognisable in the long term, but in the short and medium term can be measured through creation of new technologies, services and products. As previously explained, most of the projects in this study are still ongoing and have not yet produced records of specific outputs. Given that most of the projects are targeted at addressing challenges within a local context, if successfully implemented, they have potential to contribute towards increased local knowledge, and to stimulate local innovation processes. Considering, in addition that the projects align with contemporary global developmental challenges such as addressing poverty, hunger and malnutrition, combating the effects of climate change and conserving marine resources, it can be argued that the projects have potential for generating technologies and solutions with relevance and potential for uptake. There's need to facilitate adoption and use of outputs from research and innovation initiatives in the partnership. This should be complemented with appropriate resource support, particularly for the adoption and use of the solutions, technologies and knowledge towards improvements in agricultural productivity, enterprise development and the agri-food chain.

5.0 CONCLUDING REMARKS

This study analysed 105 projects funded through five broad funding mechanisms or Programmes, which contribute towards the EU-AU FNSSA research and innovation partnership. The projects were analysed in terms of their contribution to the thematic areas of the FNSSA Roadmap, geographic location of the projects, composition of partners and the financing of the projects. We also discussed the relevance of the projects to the broader FNSSA partnership values or key features, and their alignment with the SDGs.

Broadly speaking, FNSSA research and innovation projects funded under different Programmes contribute towards fulfilment of the Roadmap goals and are in line with the FNSSA partnership values. The study found that most of the projects are classified as development and innovation oriented research or applied research. By taking a problem solving approach, and using scientific knowledge for system improvements and technology transfer, the projects have potential to contribute towards addressing challenges pertaining to food and nutrition insecurity, climate change and environmental degradation. Based on analysis of the themes and sub-themes addressed by the projects, it can be concluded that the projects align with the thematic research priority areas laid out in the roadmap. This confirms findings from a 2017 light evaluation of the Partnership (Cherry et al. 2017). Some of the projects straddle more than one thematic area and within the themes, cover more than one sub-theme. Most of the projects are addressing the theme Sustainable intensification, whilst the theme Trade and markets has the least number of projects.

There is a wide range of partners involved in the projects and these include universities, research organisations/agencies, government bodies, private sector partners and expert networks. Participation of these partners varies substantially in the projects. There is also evidence of a number of co-funders that include global funding agencies, and funders from African agencies, although the information in the database was not sufficient to establish the scope of the funding. Due to limited information and the fact that projects are still ongoing, the study was not able to do a substantive analysis of project outputs. However, the projects show good alignment with Agenda 2030's SDGs, and hence the Partnership has value for developmental goals beyond the interests of the two continents.

From the analysis in this study, we identified a number of issues that need some attention as part of ongoing efforts to implement the Roadmap and develop a sustainable partnership that addresses the joint needs and priorities of both the AU and EU. In these concluding remarks, we discuss these pertinent issues and make some suggestions on how to take these matters forward.

Increase focus on the roadmap theme Trade and markets.

The Roadmap suggests that Europe's experience in developing intra-regional trade could offer some valuable lessons for Africa, but this could require more deliberate efforts. To ensure that there is more emphasis on this thematic focus area requires targeted efforts to invite research on the specific thematic area, as has happened with the themes of sustainable intensification and agriculture and food security. Furthermore, it is also possible that efforts to develop trade and markets within and between Africa and Europe are best addressed through other interventions complimentary to R&I

projects. These include trade expos at various levels, market access training at local levels with farmer groups and supporting small businesses that have a value chain focus. The Partnership should also leverage R&I investments resources to facilitate skills development for market access, and explore farming enterprise models that improve productivity and development of agricultural value chains.

Increase attention to issues of gender, women and youth as cross cutting themes.

Gender is not identified as a research focus area, despite the importance of the issue in addressing challenges of FNSSA, poverty and taking agriculture forward in Africa. It is thus not surprising that only a few projects mention the issue of gender in their project description or as part of their research objectives. It can be expected that no funding will be made available for gender specific research in FNSSA unless the topic is explicitly stated as a sub-theme like other socio-economic research areas. There's need to examine the role and impact of gender in African agrifood systems, particularly in enabling household food and nutrition security.

Promoting farmers' organisations and cooperatives.

To achieve the objectives of the Roadmap it is important to recognize the role/s and contributions of farmers' organisations in for example, reducing the risks associated with input supply and marketing of products, thereby improving returns to farmers as a result of their bargaining power and economies of scale (emanating from aggregation). Further farmers' organisations could accelerate knowledge transfer, adoption of new solutions and technology transfer; which in turn could lead to significant impact in agricultural transformation to achieve the objectives of the roadmap. There is therefore a need for focused attention on projects that promote the role/s of farmers' organisations in the partnership. It is important to note that Europe has a large experience in this domain, since European Farmers organisations have played an important role in the transformation of agriculture (and, to a lesser extent, food systems) in Europe.

Address concentration of projects in some countries in both Africa and Europe.

There seems to be a concentration of projects in certain regions and specific countries on both continents. This issue was noted previously by Albergel, et al (2018). Although this could be an indication that the partnership is not growing in a manner that is inclusive of all countries on both continents, there are several benefits that could come out of the concentration of projects in certain countries. For Africa, intensive capacity development efforts can grow a critical mass of research capacity that is able to have higher impact on a country's agricultural research systems and training of students in Universities. Long-term partnerships and established alliances in research and innovation can yield better results than collaborations between new partners. Despite the potential benefits, it is however important to encourage inclusivity of all countries and facilitate balanced participation by all countries to make the partnership truly bi-regional. Possible ways in which this could be achieved is to target the less active countries or regions of Africa and Europe, or to make their inclusion a compulsory criteria in calls. Alternatively, selected projects which are starting can be allocated additional funding to include partners from the priority regions or countries.

Improve balance in lead coordination of projects.

The study found that there is a dominance of European partners as lead coordinators in the projects. A possible explanation for this dominance could be the requirement by the funder for the projects to be coordinated by a European partner. The coordination role often comes with project management roles that require support services and in some cases additional resources in terms of time and institutional support. According to the EC (2014), there is in recent years an increasing trend towards African-coordinated initiatives. Sustaining this will require ongoing efforts in capacity development and will likely come from organisations that have a long-term track record of R&I collaborative projects, where institutional support is guaranteed.

AU and RECs should increase funding for R&I FNSSA partnership projects

One of the causes of dominance of European partners in lead roles of projects is because most of the funding for the projects comes from Europe. To facilitate development of an equal and jointly funded FNSSA partnership, there is need for the AU, its Regional Economic Communities (RECs) and African member states to increase investment in R&I and human capacity development. This recommendation aligns with the objectives of Agenda 2063 and the Malabo Declaration. An increase in funding for R&I on the continent will enhance the ability to commit some of the R&I investment to partnership projects.

Harness the potential role of the private sector in Africa and Europe.

Mugabe and Manyuchi, (forthcoming) discuss some reasons why there is limited involvement of the African private sector (companies upstream and downstream from farmers in the food value chain) in R&I partnerships. They highlight the lack of institutional measures and incentives such as strong protection of intellectual property to encourage the private sector to invest in R&I and the low financial and technical abilities that the private sector has to procure R&I services in Africa. In addition, the administrative complexity of the R&I funding schemes, and the lengthy processes for proposal preparation and selection can also serve as a deterrent for private sector involvement. Kraemer-Mbula et al. (2018), highlight the important role of the private sector as a vehicle on innovation and technology diffusion, and also as a source of co-funding. Thus more needs to be done to engage the private sector, from Europe and from Africa, and to get them involved as critical actors in the R& I partnership for FNSSA. Although private sector involvement was encouraged in LEAP-Agri, the conditions for the grant were that they could not be in the consortium as beneficiaries from the funding. Such conditions would exclude small-scale private enterprises in favour of large multinational private sector companies that are established and able to fund their own participation. More work needs to be done to explore mechanisms through which innovation cooperation with the private sector can be enhanced (Kraemer-Mbula et al. 2018).

Explore long-term sustainable models for financing in agriculture to promote the use of knowledge generated by R&I investments.

Translation of R&I outputs to impact on African agriculture, and contribution towards attainment of SDG's will require increased uptake of agricultural technologies, and investment into the sector. Building on past and recent experience on financing agriculture in Europe, Africa and elsewhere, there is need for exploring mechanisms and generating new knowledge on sustainable models for financing

African agriculture. In addition, mechanisms to scale up technical assistance to support smallholder farmers and agrifood enterprises to increase uptake and usage of new innovations, for development impact, are essential. This is particularly important for consideration by the HLPD as part of exploring mechanisms for a sustainable long term EU-AU FNSSA R&I Partnership.

Address emerging risks affecting FNSSA.

Going forward, there might be need for the HLPD to revisit the FNSSA roadmap thematic areas and for funders to reprioritise the allocation of R&I funds towards emerging threats to FNSSA, in light of emerging risks such as the locust outbreak on the continent and impacts of the COVID-19 pandemic.

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Appendices

Appendix 1: List of projects analysed

LEAP-AGRI projects

1.	Co-innovations across scales to enhance sustainable intensification, resilience, and food and nutritional security in water-managed agricultural systems in West Africa	WAGRINNOVA
2.	Participatory Pathways to Sustainable Intensification. Innovation platforms to integrate leguminous crops and inoculants into small-scale agriculture and local value chains	PASUSI
3.	On-site air-to-fertilizer mini-plants relegated by sensor-based ICT technology to foster African agriculture	AFRICA
4.	Sustainable intensification of fruit production systems through innovative pest bio-control technologies	PEST-FREE FRUIT
5.	Promote ecological intensification and inclusive value chains for sustainable African milk sourcing	AFRICA-MILK
6.	Roles of Agroforestry in sustainable intensification of small farMs and food SEcurity for Socletles in West Africa	RAMSES II
7.	Phenotyping the banana biodiversity to identify climate smart varieties with optimal market potential in Africa and Europe	CLISMABAN
8.	Genetic characterization of cattle populations for optimized performance in African ecosystems	OPTIBOV
9.	A Social -Ecological System Approach towards a Sustainable Intensification of Agricultural Production in Sub-Saharan Africa	SESASA
10.	Education and Training for Sustainable Agriculture and Nutrition in East Africa	EATSANE
11.	Improving nutritional quality and stability of palm oil produced by African smallholders to fulfil African consumers' needs	VITAPALM
12.	Ecosmart Alternative Control Strategies against T. annulata and its Tick Vectors	MetVAC
13.	University-based Community Action Research for increasing viability of cereal-legume value chains towards improved nutrition and livelihoods in sub-Sahara Africa	UniCARSSA
14.	Strengthening innovation support SERVICES to enhance INNOVations for sustainable food production, ensuring the wellbeing of rural populations, and reducing environmental degradation and resource depletion	SERVInnov
15.	CASsava Sustainable Advancement & Nurturing by discovery of Disease Resistance Alleles	CASSANDRA
16.	Enhancing food and nutrition security through promotion of edible insects value chain in Eastern Africa	Ento-Economy
17.	The European–African partnership for safe and efficient use of mycotoxin-mitigation strategies in sub-Saharan Africa	MycoSafe-South
18.	Empowering small-scale farmers (SPEAR): towards the SDGs through participative, innovative and sustainable livestock and poultry value chains (LPVC)	SPEAR
19.	Sustainable Transition to Entrepreneurial Production in Agriculture trough Upgrading	STEP-UP
20.	Partnerships For Healthy Diets And Nutrition In Urban African Food Systems – Evidence And Strategies	NOURICITY
21.	Exploring food system transformations in rapidly changing African cities	Food4Cities
22.	Innovative approaches to value addition and commercialization of climate smart crops for enhanced food security and nutrition in Africa and beyond	NUTRIFOODS

23.	Multivalent inactivated Vaccine against Heartwater in Africa	MuVHA
24.	Long-term Europe-Africa Research Network	LEARN
25.	Multi -sectoral strategy for brucellosis control in Eastern Africa	MUSBCEA
26.	Agricultural Trade and Market Access for Food Security: Micro- and Macro-level Insights for Africa	ATMA4FS
27.	Small Fish and Food Security: Towards innovative integration of fish in African food systems to improve nutrition	SmallFishFood

Other H2020 projects

28.	Innovations in Technology, Institutional and Extension Approaches towards Sustainable Agriculture and enhanced Food and Nutritional Security in Africa	InnovAfrica
29.	Enhancing Food Security in AFRICan AgriCULTUral Systems with the Support of REmote Sensing	AFRICULTURES
30.	A long term EU-Africa research and innovation partnership on food and nutrition security and sustainable agriculture	LEAP-AGRI
31.	Locally-driven co-development of plant-based value chains towards more sustainable African food system with healthier diets and export potential	InnoFoodAfrica
32.	FOOD and Local, Agricultural, and Nutritional Diversity	FOODLAND
33.	Supporting EU-African Cooperation on Research Infrastructures for Food Security and Greenhouse Gas Observations	SEACRIFOG
34.	Support to the implementation of the Long-term EU-AU Research and Innovation Partnership for Food and Nutrition Security and Sustainable Agriculture	LEAP4FNSSA
35.	Nurturing Africa Digital Revolution for Agriculture	NADiRA
36.	Use of a Decision-Analytic Framework to explore the water-energy-food NEXus in complex and trans-boundary water resources systems of fast growing developing countries	DAFNE
37.	Coordination of International Research Cooperation on soil CARbon Sequestration in Agriculture	CIRCASA
38.	Tropical and South Atlantic climate-based marine ecosystem predictions for sustainable management	TRIATLAS
39.	New species, processes and products contributing to increased production and improved sustainability in emerging low trophic, and existing low and high trophic aquaculture value chains in the Atlantic	AquaVitae
40.	DevelopMent AnD application of integrated technological and management solutions FOR wasteWATER treatment and efficient reuse in agriculture tailored to the needs of Mediterranean African Countries	MADFORWATER
41.	Educating the next generation of professionals in the agrifood system	NEXTFOOD
42.	nsect-borne prokaryote-associated diseases in tropical and subtropical perennial crops	TROPICSAFE
43.	Edible Cities Network Integrating Edible City Solutions for social resilient and sustainably productive cities	EdiCitiNet
44.	Microbial Uptakes for Sustainable management of major bananA pests and diseases	MUSA
45.	Understanding pathogen, livestock, environment interactions involving bluetongue virus	PALE-blu
46.	Fruit fly in silico prevention and management	FF-IPM
47.	Translation of climate information into multilevel decision support for social adaptation, policy development, and resilience to water scarcity in the Horn of Africa Drylands	DOWN2EARTH

48.	Assessing the impact of climate change on food and nutrition security and designing more sustainable and resilient food systems in Europe and beyond	FOSC
49.	Improving nutrition in Africa by strengthening the diversity, sustainability, resilience and connectivity of food systems	HealthyFoodAfrica
50.	Soil Information System for Africa	Soils4Africa
51.	Synergistic use and protection of natural resources for rural livelihoods through systematic integration of crops, shrubs and livestock in the Sahel	SustainSAHEL
52.	Linking East and West African farming systems experience into a BELT of sustainable intensification	EWA-BELT
53.	Upscaling the benefits of push-pull technology for sustainable agricultural intensification in East Africa	UPSCALE
54.	Sustainable intensification of food production through resilient farming systems in West & North Africa	SustInAfrica

AURG2

55.	Organic Residual Products for Biofortified Food for Africa	OR4FOOD
56.	Improved Orange Fleshed Sweet Potato value chains for food and nutrition security in Benin, Niger and Nigeria	NO-ACRONYM
57.	Marker-assisted breeding of selected native chickens in Mozambique and Uganda	MAB Chicken
58.	Development of bacteriophage cocktails as disease biocontrol agents for improved aquaculture productivity, food and nutrition safety in Ghana and Uganda	SafeFish
59.	Diversity of Aspergillus Species and Aflatoxin Contamination along Maize and Groundnut Value Chains in Eastern and Southern Africa	NO-ACRONYM
60.	Enhancing the nutrition and health of smallholder farmers in East Africa through increased productivity of biofortified common bean and improved postharvest handling	NO-ACRONYM
61.	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	NO-ACRONYM
62.	Promote sustainable management of Tuta absoluta, an invasive pest of Solanaceous vegetables for food and nutritional security in East Africa	NO-ACRONYM
63.	Development and deployment of iron dense mungbean genotypes for nutrition security in the drought prone areas of East Africa	Mung4-Fe
64.	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	NO-ACRONYM
65.	Improving the water and energy efficiency for food production through solar-powered Micro-irrigation	NO-ACRONYM
66.	ECOLOGICAL intensification pathways for the future of crop-livestock integration in AFRICAn agriculture	ECOAFRICA
67.	Developing innovative and sustainable approaches to prevent the spread of African swine fever in Africa	ASF-RESIST
68.	Crop and Soil Health Improvement for Sustainable Agricultural Intensification towards Economic Transformation in West Africa	NO-ACRONYM
69.	Upscaling Site-Specific Climate-smart Agriculture and Land use practices to Enhance Regional Production Systems in West-Africa	UPSCALERS
70.	Dual-resistant cassava for climate resilience, economic development and increased food security of smallholders in eastern and southern Africa	DualCassava
71.	Ecologically Based Rodent Management for Sustainable Agriculture and Food Security in Africa	EcoRodMan

AURG1

72.	ICT tools for the enhancement of irrigation efficiency in West	IRRIWEST
73.	Using IWRM best practices to develop Appropriate Capacity and Training for the benefit of Sub-Saharan Africa Water Security	ACT4SSAWS
74.	Improvement of Crop-Livestock Integrated Farming Productivity and Market Access through Smallholder Lead Farmer Concept	NO-ACRONYM
75.	Mapping of Water Conflicts and Best Management Practices in Pastoralist Areas in the Sahel	NO-ACRONYM
76.	Groundwater Resources in Basement Rocks of Africa	GRIBA
77.	Recycling of plant and animal biomasses in crop-livestock system	BIOVA
78.	Improved management and technological innovation in African tilapia farms and hatcheries	ITACA
79.	Improvement of post-harvest and enhancement of fonio in Africa	Aval Fonio
80.	Limiting the Impact of Cassava Brown Streak Disease on Smallholders, Women and the Cassava Value Chain	LimitCBSD
81.	Development of sustainable production and utilization technologies of <i>Jatropha curcas</i> biofuel for reducing rural poverty in West Africa	NO-ACRONYM
82.	Developing Agricultural Production Decision Support Simulation Tools for Increasing Agricultural Production and Food Security in Africa	NO-ACRONYM
83.	Contribution à la reliance de la productivité agricole en zone post conflit et alentours (Sénégal, Gambie et Guinée Bissau)	NO-ACRONYM
84.	Improving Indigenous Chicken Productivity for Enhanced Livelihood and Food Security in Sub-Saharan Africa	INCIP
85.	Validation and dissemination of bio intensive eco-friendly management strategies for thrips - a critical constraint to cowpea production in Africa	Thrips IPM
86.	Agroforestry for food security	AFS4Food

DeSIRA

87.	Enhancing crop productivity and climate resilience for Food and Nutrition Security in Mali	APSAN
88.	Anticipating and managing biological risks to strengthen farmers' resilience to climate change in West and Central Africa	Biohazards
89.	Climate Smart Agriculture Research and Innovation Support for Dairy Value Chains in Eritrea	CSARIDE
90.	West African Breeding Networks and Extension Empowerment	ABEE
91.	Climate-smart innovations to improve productivity, profitability, and sustainability of agriculture and food systems in Malawi through multidisciplinary research	CLIMAT SMART
92.	Improving resilience of farmers' livelihoods to climate change through innovative, research proven climate-smart agroforestry and efficient use of tree resources in the Eastern Province and peri-urban areas of Kigali city	Agroforestry Rwanda
93.	Sustainability of production systems and new dynamics in the cocoa sector	Cocoa4Future
94.	Fostering an Agroecological Intensification to improve farmers' resilience in Sahel	FAIR Sahel
95.	Innovations for the sustainable intensification of resilient irrigated agricultural systems in the face of climate change in Niger	INV-NIGER
96.	Integrated Rice-fish Farming: A Research and Extension Development Based Initiative to Improve Food Security and Nutrition in Liberia	IRFFS
97.	Mangrove, mangrove rice and mangrove people - sustainably improving rice production, ecosystems and livelihood	Mangrove Guinea Bissau

98.	Agro-Ecological Transition through Agricultural Research	TAERA
99.	Adapting access to agro-pastoral resources in the context of mobility and climate change for pastoral farming in Chad	ACCEPT
100.	Carbon Sequestration and greenhouse gas emissions in (agro) Sylvopastoral Ecosystems in the Sahelian CILSS States	CaSSECS
101.	Enhancing climate resilience in agriculture for improved food and nutrition security through research, innovation and training in the Republic of Mauritius	DeSIRA UOM
102.	Supporting Sustainable Agriculture for Improved Food Security and Safety in the Republic of Mauritius - Enhancing FAREI's R&D Capacity for a Sustainable and Modern Agriculture	FAREI DeSIRA
103.	Developing Affordable and innovative food Resources to increase quality of nutritious foods for young children, adolescent girls, pregnant and lactating women in Ethiopia	DARE
104.	Livestock Production Systems in Zimbabwe	LIPS-Zim
105.	Livestock Disease Surveillance Knowledge Integration	LIDISKI

Appendix 2: Projects alignment with SDGs results

Goal	Search words	Count in project documents	No. of projects
SDG1: End poverty in all its forms everywhere	Poverty	18	16
SDG2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Hunger	10	9
	Food security	56	33
	Nutrition	103	37
	Sustainable agriculture	13	11
SDG3: Ensure healthy lives and promote well-being for all at all ages	Health	46	27
	Wellbeing / well-being	5 / 4	4 / 3
SDG4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Education	8	5
	Learning	11	8
SDG5: Achieve gender equality and empower all women and girls	Gender equality / gender	1 / 8	1 / 8
	Women / girls / youth	36 / 1 / 13	23 / 1 / 11
SDG6: Ensure availability and sustainable management of water and sanitation for all	Water management / water	7 / 162	5 / 31
	Sanitation	3	2
SDG7: Ensure access to affordable, reliable, sustainable and modern energy for all	Access to energy / energy	1 / 19	1 / 10
	Affordable energy	0	0
	Reliable energy	1	1
SDG8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Economic growth	7	6
	Employment / productive employment / employment creation / unemployment	5 / 0 / 0 / 1	5 / 0 / 0 / 1
	Decent work	0	0
SDG9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Resilient infrastructure / infrastructure	0 / 6	0 / 6
	Industrialisation	0	0
	Innovation	112	38
SDG10: Reduce inequality within and among countries	Reduce Inequality / inequality	0 / 0	0 / 0
SDG11: Make cities and human settlements	Inclusive cities / cities	0 / 22	0 / 18

inclusive, safe, resilient and sustainable	Inclusive human settlements / human settlements / settlements	0 / 1 / 2	0 / 1 / 2
SDG12: Ensure sustainable consumption and production patterns	Sustainable consumption patterns / consumption patterns	0 / 0	0 / 0
	Sustainable production patterns / production patterns	0 / 0	0 / 0
SDG13: Take urgent action to combat climate change and its impacts	Combat climate change / climate change	0 / 59	0 / 36
	Climate change impacts	1	1
SDG14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development	Oceans, seas and marine / oceans / seas	0 / 0 / 111	0 / 0 / 33
	Marine resources / marine	0 / 11	0 / 2
SDG15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Terrestrial ecosystems / ecosystems	0 / 10	0 / 8
	Forests resources / forests	0 / 1	0 / 1
	Combat desertification / desertification	0 / 2	0 / 2
	Degradation	8	7
	Biodiversity loss / biodiversity	1 / 6	1 / 4
SDG16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	Inclusive societies / societies	0 / 1	0 / 1
	Access to justice	0	0
	Effective institutions	0	0
SDG17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	Global partnerships implementation / global partnerships / global / partnerships	0 / 0 / 22 / 28	0 / 0 / 18 / 13
	Revitalise global partnerships / collaboration	0 / 30	0 / 21