European Commission

Research and Innovation

The AU-EU Innovation Agenda

First Year Assessment of the 10-Year Agenda

The AU-EU Innovation Agenda. First Year Assessment of the 10-Year Agenda

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The AU-EU Innovation Agenda

First Year Assessment of the 10-Year Agenda

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of the AU-EU High-Level Policy Dialogue on Science, Technology and Innovation

2025 Directorate-General for Research and Innovation

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Glossary of terms and acronyms

Short-form	Long-form
ACP	*African, Caribbean, and Pacific States*
AIO	African Innovation Outlook
ARIPO	African Regional Intellectual Property Organization
ARISE-PPP	African Research Initiative for Scientific Excellence Pilot Programme
ASTII	African Science Technology and Innovation Indicators
AU	African Union
AU-EU Innovation Agenda	The cornerstone cooperation strategy on science, technology and innovation between Africa and Europe between 2023-2033
AUC	African Union Commission
BB	Briter Bridges
CCSE	Climate Change and Sustainable Energy. This is a partnership and roadmap established under the AU-EU HLPD to support renewable energy and energy efficiency initiatives.
CoRE	Centres of Regional Excellence
CPC	Cooperative Patent Classification
CSIR	Council for Scientific and Industrial Research
Dashboard	The online platform/repository of all the (approved) initiatives implementing the AU-EU Innovation Agenda
DG RTD	The European Commission's Directorate-General for Research and Innovation
DN	Doctoral Networks (MSCA programme)
EC	European Commission
EDCTP	European and Developing Countries Clinical Trials Partnership
EiAC	ENRICH in Africa Centre, an innovation outcome of the EU funded ENRICH in Africa project
EPO	European Patent Organisation
ERC	European Research Council
ESO	Entrepreneurship support organisation
EU	European Union
FNSSA	Food and Nutrition Security and Sustainable Agriculture. This is a partnership and roadmap established under the AU-EU HLPD to foster joint research and strengthen capacity building on issues of food security, improved nutrition and sustainable agriculture.
FP	Framework Programme
FTE	Full-Time Equivalent
GAVI	Global Alliance for Vaccines and Immunisation

GDP	Gross domestic product
GEP	Gender Equality Plan
GERD	Gross domestic expenditure on R&D
GII	Global Innovation Index (produced by WIPO)
GSF	Global Service Facility, a sproject funded by the European Commission
HEI	Higher education institutions
HLPD	High level policy dialogue
ICT	Information, Communications and Technology
Initiative	Projects that meet the criteria listed in the Agenda's Roadmap and are therefore seen as implementing the Agenda. They are catalogued on the Dashboard.
ILO	International Labour Organisation
IP	Intellectual Property
IPC	International Patent Classification
IPR	Intellectual Property Rights
MEL	Monitoring, evaluation, and learning
MOU	Memorandum of Understanding
MSCA	Marie Skłodowska-Curie Actions
NMFI	Non-malarial febrile illnesses
OAPI	Organisation Africaine de la Propriété Intellectuelle
OAU	Organisation of African Unity
OECD	Organisation for Economic Co-operation and Development
PF	Postdoctoral Fellowship (MSCA programme)
PPP	Public-private partnership
PPP	Purchasing power parity
R&D	Research and Development
R&I	Research & innovation
RCoE	Regional Centres of Excellence
Roadmap of the AU-EU Innovation Agenda	A guiding document on the governance and coordination of the Agenda and its implementing initiatives
SADC	Southern African Development Community
SE	Staff Exchanges (MSCA programme)
STI	Science, technology, and innovation
STISA	Science, Technology and Innovation Strategy for Africa
STYIP	Second Yen-Year Implementation Plan

TRL	Technology Readiness Level
TVET	Technical and Vocational Education and Training
UIS	UNESCO Institute for Statistics
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNGA	United Nations General Assembly
VC	Venture Capital
WHO	World Health Organisation
WIPO	World Intellectual Property Organisation

Global Gateway

KEY FINDINGS

FROM THE YEAR 1 ASSESSMENT

OF THE IMPLEMENTATION OF THE AU-EU INNOVATION AGENDA

Objectives

1. **Make it real**
Focusing on tangible innovation outputs

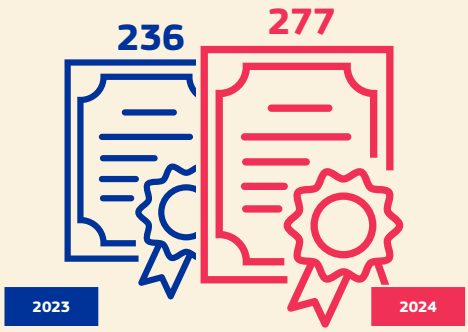
2. **Generate impact by design**
Strengthening innovation ecosystems

3. **Strengthening people, communities and institutions**
Support capacity building and partnerships

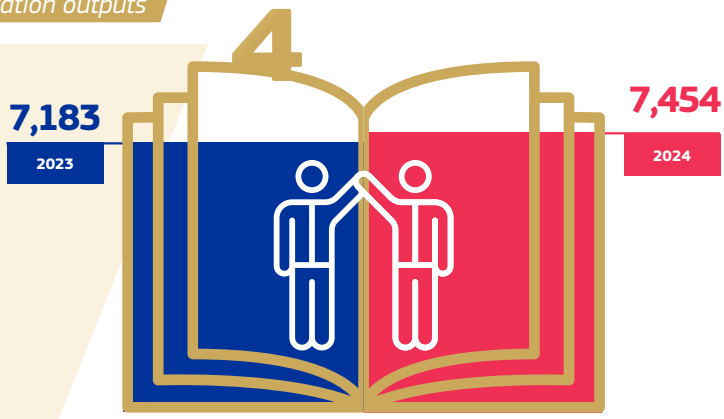
4. **Learn, monitor and scale it up**
Enhancing co-financing and knowledge-sharing mechanims

#1 MAKE IT REAL

Focussing on tangible innovation outputs



Joint **African-European granted** patents



Co-authored publications
between African and European researchers

#2 GENERATE IMPACT BY DESIGN

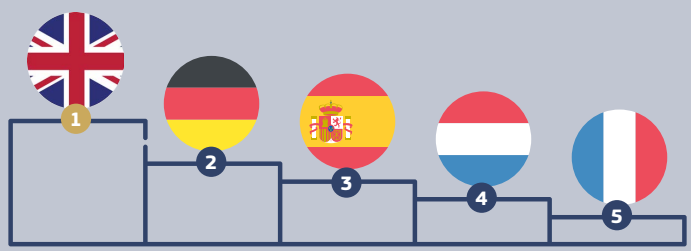
Strengthening innovation ecosystems

Number of Public-Private Partnerships
on the Dashboard of Initiatives of the AU-EU Innovation Agenda in Year 1 (2024)

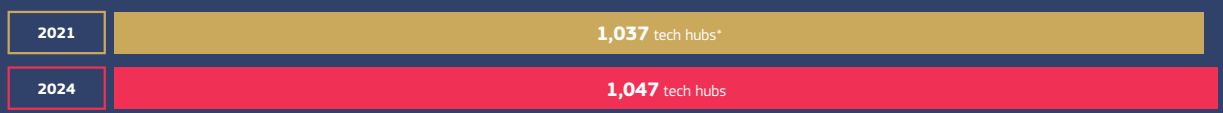
Public Health
2 initiatives

Capacities for Science
1 initiative

European countries with best tech hubs
Based on Startup Heatmap Europe for 2023
and Financial Times Incubator Ranking for 2024



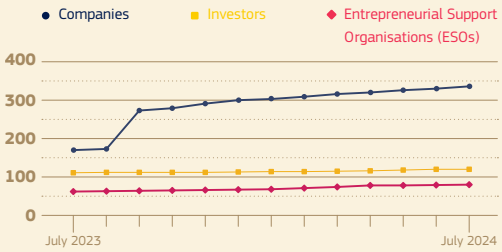
Total number of African tech hubs



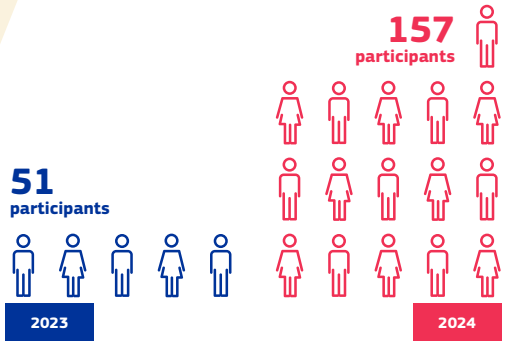
* Due to the lack of data for 2023, data from 2021 was used instead.

#3 STRENGTHEN PEOPLE, COMMUNITIES, AND INSTITUTIONS

Support capacity building and partnerships



Euroquity ENRICH in Africa Virtual Community Platform memberships trends

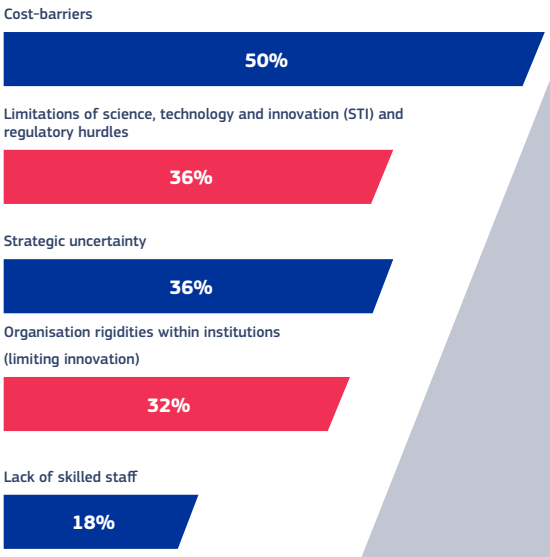


African Marie Skłodowska-Curie Actions (MSCA) particpants
(by mobility start date)

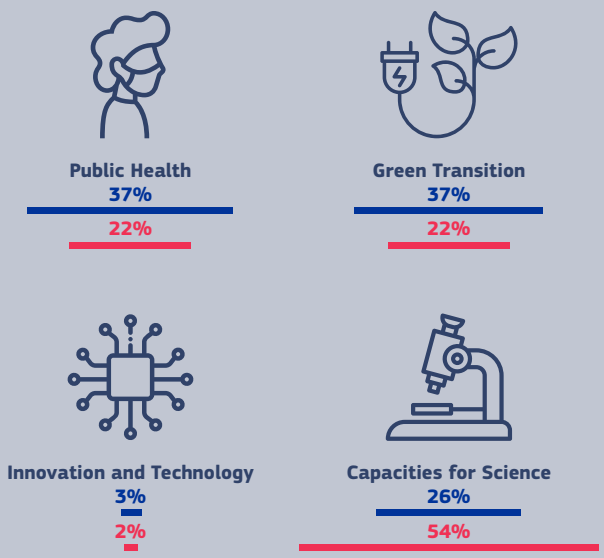
#4 LEARN, MONITOR, AND SCALE IT UP

Enhancing co-financing and knowledge-sharing mechanisms

Top 5 barriers in the coordination of bilateral R&I activities



Outcome of Horizon Europe Africa Initiative I



CHECK OUT THE FULL REPORT

FOR MORE INFORMATION!

Executive summary

This Monitoring, Evaluation, and Learning (MEL) Report provides the first-year assessment of the implementation of the African Union (AU) – European Union (EU) Innovation Agenda (2023-2033). Officially adopted in July 2023 further to the mandate given at the first AU-EU Ministerial on Science, Technology and Innovation, this Agenda aims to foster the translation of Research and Innovation (R&I) into tangible impact, namely products, services, business and jobs, in Africa and Europe. Its implementation is supported by a continuously increasing number of initiatives and projects of Africa-Europe R&I cooperation that are listed on a Dashboard, hosted on the AU-EU Innovation Interface.

This report provides a snapshot of the ongoing implementation of the AU-EU Innovation Agenda by the end of the first full year of its implementation (end-July 2024). To do so, this report gathered and compared, whenever possible, information on AU-EU R&I collaborations and their outputs right before (August 2022-July 2023 defined as "Year 0") and after the adoption of the AU-EU Innovation Agenda (August 2023-July 2024 defined as "Year 1"). Hence, this report establishes a baseline and captures emerging trends, setting the foundation for the continued MEL work that will accompany the implementation of the Agenda over its implementation period (2023-2033).

Monitoring, Evaluation, and Learning scope and methodology

The MEL framework follows a Theory of Change approach, linking objectives to inputs, and defining indicators for outputs and outcomes. A combination of secondary data (retrieved from both publicly available and proprietary sources, which a majority of the indicators rely on), and primary data (collected through a survey and follow-up interviews with coordinators of dedicated initiatives recognised as contributing to the implementation of the Agenda) inform the assessment. At present, the implementation of the Agenda relies on several initiatives listed in the so-called Dashboard of the AU-EU Innovation Agenda.

Findings are presented according to indicators, which in turn are structured along the Agenda's four key Objectives: **(i) Make it real:** Focusing on tangible innovation outputs; **(ii) Generate impact by design:** Strengthening innovation ecosystems; **(iii) Strengthen people, communities, and institutions:** Supporting capacity-building and partnerships; and **(iv) Learn, monitor, and scale it up:** Enhancing co-financing and knowledge-sharing mechanisms. In addition, the report presents contextual information on the backdrop of R&I performance in Africa and in Europe.

Key findings by Objective

For **Objective 1 ("Make it real")** of the Agenda, the potential for translation of Africa-Europe collaborative research into tangible outputs was measured primarily by looking at co-registered patents and co-authored academic publications. On the whole, the number

of joint AU-EU granted patents remained rather low throughout the first year of implementation of the AU-EU Innovation Agenda (Year 0 = 236; Year 1 = 277), indicating a need for greater awareness of the importance of intellectual property rights (IPR), particularly in African countries. Moreover, considering IPR only captures part of the innovation output, especially in Africa where much innovation occurs outside of formal patent systems, a more tailored approach may be needed in future iterations of this MEL exercise to provide an adequate picture. The dissemination of knowledge, in terms of numbers of co-authored peer-reviewed publications between African and European researchers, remained essentially unchanged between before (1 August 2022 to 31 July 2023) and after the adoption of the Agenda (1 August 2023 to 31 July 2024), with South Africa and France leading in contributions. The most frequent thematic focus of joint publications were Public Health and the Green Transition, being suggestive of shared research priorities in these areas across both continents.

Efforts to **"Generate impact by design" (Objective 2)** through robust innovation ecosystems have seen some success in strengthening knowledge exchange, technology transfer, and entrepreneurship. In the first year of implementation of the Agenda, several AU-EU partnerships facilitated the creation of new businesses, with public-private partnerships (PPPs) showing potential as important vehicles for innovation funding. However, the number of PPPs among the initiatives officially recognised as contributing to the implementation of the Agenda (and thus included in the Dashboard) is still rather low. Private sector involvement in initiatives on the Dashboard remains limited, which suggests an opportunity for future engagements. The Assessment also identified tech hubs as key stakeholders for bringing innovation to the market, supporting start-ups and entrepreneurs with workspace, services, and finance. The number of such hubs in Africa remained rather stable between before and after the adoption of the Agenda (1,031 tech hubs in 2021 compared to 1,047 tech hubs in 2024). The same applies to the top European countries with tech hubs. A concentration of tech hubs in certain countries was recorded in both continents. In Africa; Nigeria, South Africa, Kenya, Egypt and Tunisia dominate the tech hub landscape, whereas in Europe; the UK, Germany, France, the Netherlands, Sweden and Switzerland display the strongest technology entrepreneurship ecosystems.

Efforts to **"Strengthen people, communities, and institutions" (Objective 3)** were visible through the expansion of knowledge exchange and experience-sharing initiatives. Platforms such as the Euroquity ENRICH in Africa Virtual Community Platform have facilitated collaboration among AU and EU innovation stakeholders, with notable increases in registered participants during Year 1. With regard to researchers' and students' mobility programmes, a notable increase in the number of African participations were recorded for Marie Skłodowska-Curie Actions (MSCA), namely 157 in Year 1 against 51 in Year 0. For the Erasmus+ programmes, the only available data here reported refers to pre-adoption time (between in the calendar year of 2021 and 2022) as data from the 2023-2024 period

are yet to be published (and will therefore be considered in the next MEL assessment). Regulatory constraints and funding disparities continue to hamper the mobility landscape in Africa. Capacity building efforts have also made strides in considering gender balance within R&I collaboration, with several initiatives included in the Dashboard incorporating explicit gender equality strategies as part of their activities. However, broader social inclusion efforts remain underdeveloped, particularly in addressing the needs of underrepresented communities (e.g. youth, people with disabilities, refugees).

Measuring progress towards the realisation of **Objective 4 "Learning, monitoring and scaling-up"** showed the potential of multilateral programmes to co-finance and thus help scale up R&I partnerships. Projects funded under the Horizon Europe Africa Initiatives I and II address all priority areas of the Innovation Agenda. Projects funded under the Global Health European and Developing Countries Clinical Trials Partnership 3 Joint Undertaking (GH EDCTP3 JU) and the Global Gateway Team Europe Initiative on "Manufacturing and Access to Vaccines, Medicines and Health Technologies in Africa" (MAV+) mainly support the actions foreseen by the Agenda in the area of Public Health. Importantly, most initiatives listed in the Dashboard contributed to the creation of new businesses and enterprises. 14 initiatives (56% of the ones surveyed) created either 1-49, 50-99, or 100+ jobs. Remaining challenges include limited access to funding, insufficient regulatory flexibility, general uncertainty, and institutional rigidity.

Conclusions and implications for the future

The first year MEL exercise portrays a real-time picture of the status of innovation-focussed collaborations between Africa and Europe one year after the adoption of the AU-EU Innovation Agenda. Due to the limited timeframe, findings reported may be indicative of a somewhat transitional situation, in which trends may not be noticeable yet or just emerging. The assessment serves nonetheless as **foundation for the long-term assessment of the implementation of the AU-EU Innovation Agenda.**

The Dashboard of initiatives is an important step in bringing together initiatives aligned with the objectives and actions of this Agenda. Looking forward, linking further EU and AU funding opportunities more closely to the Dashboard, and therefore to the Agenda's objectives and actions, could contribute to even stronger strategic alignment of the multitude of AU-EU R&I collaborative efforts, hence generating more impact. The **MEL assessment will be performed in the future**, on a yearly basis, to measure the impact of the implementation of the Agenda and trace trends over time. While doing so, and learning from this first-year experience, it may be opportune to expand the methodological scope of the assessment, in order to capture as many outcome-related data as possible (e.g. development and expansion of R&I value chains, start-ups' creations, scale ups and acquisitions, patents' valuations, etc.). To do so, **better quality data are needed** to enable the precise measuring of multiple indicators (e.g. country-level data as well as data from

initiatives on the Dashboard), particularly for African countries. Accordingly, AU regional and continental institutions, as well as international organisations (e.g. World Intellectual Property Organisation and European Commission through Global Gateway initiatives), are expected to play a key role in this endeavour.

As **realising equal partnerships** is essential in the context of Africa-Europe cooperation, increasing the number of AU-funded and AU-EU co-funded initiatives to officially contribute to the implementation of the Agenda could foster shared commitment, responsibility, and accountability. Inclusive development on innovation should also take into consideration existing differences among AU Member States in terms of their R&I ecosystems, with gaps to be addressed accordingly throughout the implementation of the Agenda. Overall, the findings underscore the need for continued investment, reinforced policy alignment, and enhanced collaboration among stakeholder organisations along the Africa-Europe R&I value chain, to achieve the Agenda's objectives over the next nine years.

1. Introduction

This report has been prepared by the African Union (AU) – European Union (EU) Innovation Agenda Working Group (hereafter Working Group) and the Global Service Facility (GSF), a project funded by the European Commission.

Following the first anniversary of the political adoption (July 2023 – July 2024) of the AU-EU Innovation Agenda (hereafter the Agenda), this Monitoring, Evaluation and Learning (MEL) report serves the following purposes:

To provide an overview of the state of play of the AU-EU Research and Innovation (R&I) cooperation landscape before the adoption of the Agenda as a baseline for future MEL activities;

To provide a snapshot of the ongoing implementation of the Agenda one year after its adoption, to pinpoint any emerging trends and patterns and to draw lessons from this exercise for further implementation of the Agenda;

As part of the above, to provide contextual information on where the AU and EU stand with regards to key R&I metrics;

To establish the foundations of a MEL system to accompany the Agenda's implementation in the future, based on the MEL framework to assess the impact of the Agenda published in August 2024.

This MEL report is the first iteration of its kind, following the Agenda's first year of implementation. It is intended for this MEL exercise to be repeated on an annual basis throughout the remaining nine years of implementation of the Agenda (2024-2033). Given the early stage, of the Agenda's implementation, this report mainly focuses on presenting the MEL framework put in place to measure outcomes and impacts of the Agenda in future MEL rounds. This first MEL round does not aim to directly attribute outcomes of R&I to the Agenda's implementation yet.

The report is structured as follows, building on this introductory chapter 1:

- Chapter 2 presents the Theory of Change guiding the MEL work, the indicators defined, and the methodological approach used for data collection.
- Chapter 3 presents the data and findings on indicators related to the Agenda's four Objectives and the individual components of the Theory of Change. For each indicator, a description is provided of what it is intended to measure, what data was used to measure it and any indicator-specific methodology, what the data shows and whether any lessons can be drawn for the continued implementation of the Agenda.

- Chapter 4 covers contextual indicators on R&I in Africa and in Europe. Wherever available, data is provided for the period of 2019 and 2023, the year of the adoption of the Agenda.
- Chapter 5 summarises the conclusions and implications of this MEL exercise for the continued implementation of the Agenda.

Supplementary information, including a bibliography, are provided as annexes.

Depending on the reader's background and predilection, this report's sections can be read as stand-alone, should users wish to 'zoom in' on certain aspects of Africa-Europe R&I collaboration.

2. Monitoring, Evaluation and Learning Scope and Methodology

2.1. Introduction to the AU-EU Innovation Agenda and the Mandate for its Monitoring, Evaluation and Learning Framework

The AU-EU Innovation Agenda is an unprecedented 10-year policy initiative that aims to foster the translation of R&I collaboration between both continents into tangible positive socio-economic impact on the ground: products, services, businesses and jobs, in Africa and in Europe. It was adopted by AU and EU countries' ministers of R&I on 19 July 2023. The Agenda has four Objectives: 1. Make it real; 2. Generate impact by design; 3. Strengthen people, communities, and institutions; 4. Learn, monitor and scale it up. These Objectives are accompanied by a series of short-term (2023-2026), medium-term (2023-2030) and long-term (2023-2033) actions in five priority areas: Public Health, Green Transition, Innovation and Technology, Capacities for Science, and Cross-cutting issues.

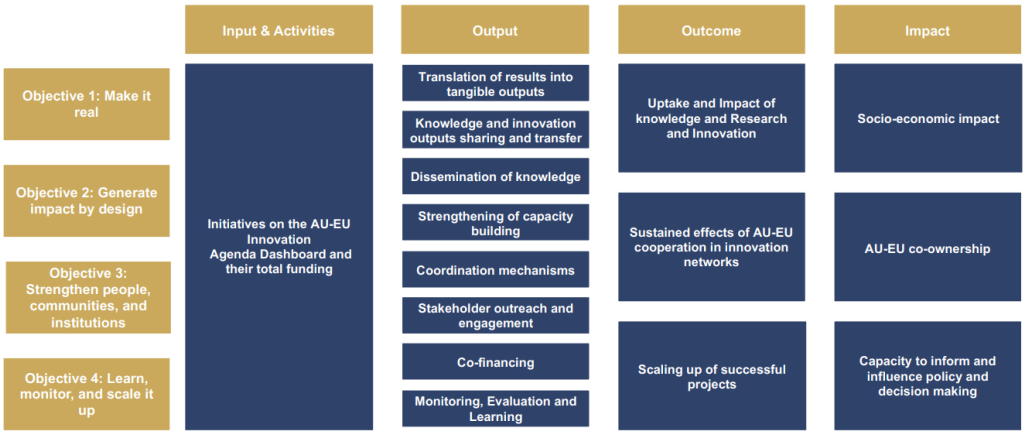
R&I activities involving partners from both continents that actively contribute to the implementation of the Agenda´s Objectives (specific criteria, see annex 6.1) are included in a Dashboard of initiatives that is updated on a quarterly basis by a dedicated Dashboard Task Force within the Working Group. Top-down (outreach) and bottom-up (application) approaches are both put in place to progressively enlarge the list of programmes and projects it contains.

The attainment of the Agenda´s four objectives and the implementation of its actions is monitored and evaluated on a regular basis by a dedicated MEL Task Force within the Working Group. In coordination with the two other Working Groups of the AU-EU HLPD, namely on Climate Change and Sustainable Energy (CCSE) and on Food and Nutrition Security and Sustainable Agriculture (FNSSA), a dedicated MEL framework was developed. The overview of the MEL methodology to be used to measure the impact of the implementation of the Agenda was published in August 2024 and is applied in this first MEL report.

2.2. Development of a Theory of Change and Set of Indicators

As part of the MEL framework developed by the MEL Task Force, a Theory of Change (ToC) was developed linking the Agenda's Objectives to a set of input, output, outcome, and impact indicators.

Figure 1: Theory of Change of the AU-EU Innovation Agenda



GSF and the AU-EU Innovation Agenda Working Group, 2024 (publication accessible here)

Building on this ToC, a set of indicators was developed linked to each of the four Objectives, while another set of indicators was defined to provide contextual information. A different mix of secondary, proprietary data, quantitative survey and qualitative interview data were collected and used depending on the indicator, as summarised in the table on the following page.

For most of the indicators linked to one of the Agenda's Objectives, the data were collected for 2023 or the 12 months running up until July 2023, or in case of limited data availability for the latest year available before then ("Year 0", meaning before or on the adoption of the Agenda), and for 2024 or the 12 months from August 2023 until 2024 ("Year 1", meaning following the adoption of the Agenda). The contextual indicators aim to capture the development of trends leading up to the adoption of the Agenda, and therefore present data from 2019-2023.

This report will also be followed by an overarching MEL framework report on the work supervised by the HLPD as a whole, foreseen to be published in the second quarter of 2025. The separate MEL framework report integrates the respective Theories of Change of the Working Groups on FNSSA, CCSE and the Innovation Agenda. Next to outlining the MEL methodology in detail, the overarching MEL framework report provides spotlight results from the data collection in 2024 taken from the present report and from the Working Group on CCSE and gathers methodological and content-wise lessons learned regarding the development of the MEL framework and the first round of data collection.

Table 1: Indicators to monitor the AU-EU Innovation Agenda

	Objective 1: Make it real	Data Source
1	**Number of patent applications filed in AU and EU and number of patent applications filed jointly by African and European organisations**	PATSTAT Autumn edition 2024
2	**Number of patents granted in AU and EU countries and number of granted patents involving joint African and European organisations**	PATSTAT Autumn edition 2024
3	**Total number of peer-reviewed publications co-authored by AU and EU authors**	Lens.org
4	**Number of university or higher education institution partnerships launched between AU and EU**	Survey to initiatives
5	**Number of and related budget to AU-EU Public-Private Partnerships (PPP)**	Dashboard of Initiatives
6	**Number of tech hubs in Africa and in Europe**	Mixed secondary data sources
7	**Number of knowledge exchange and experience-sharing initiatives launched between and within AU and EU countries**	Survey to initiatives
8	**Number of registered participants on the EuroQuity ENRICH in Africa Virtual Community Platform**	EuroQuity
9	**Number of capacity building initiatives launched to empower youth, women, persons with disabilities, with training and entrepreneurship**	Survey to initiatives
10	**Number of Africans or African entities participating in Marie Skłodowska-Curie Actions (MSCA)**	Cordis
11	**Number of Africans or African entities participating Erasmus+ programmes**	Erasmus+ Annual Reports
12	**Amount of funding allocated to support initiatives aiming to implement the actions foreseen by the Agenda**	Dashboard of initiatives
13	**Number of projects in Africa approved under the Global Gateway Africa-Europe Investment Package as part of the Agenda**	Dashboard of Initiatives, Global Gateway
14	**Number of projects granted in the Africa Initiative of Horizon Europe Work Programme 2021-2022; number of African and European institutions involved**	DG RTD
15	**Number of initiatives launched to enable the implementation of the actions foreseen by the Agenda**	Dashboard of Initiatives
16	**Number of new businesses generated from initiatives included in the Dashboard**	Survey to initiatives
17	**Research and development (R&D) expenditure as proportion of gross domestic product (GDP)**	UNESCO, OECD, Eurostat
18	**Estimate of university–industry R&D collaborations launched and running in AU and EU in 2023**	WIPO GII
19	**Venture Capital (VC) recipients, deals/bn PPP$ GDP**	WIPO GII
20	**VC received, value, % GDP (full year 2023)**	WIPO GII
21	**Patent families/bn PPP$ GDP (full year 2023)**	WIPO GII
22	**High-technology exports, % of total trade**	WIPO GII
23	**Knowledge-intensive employment, %**	WIPO GII
24	**Female researchers as a % of total researchers**	UNESCO

GSF and the AU-EU Innovation Agenda Working Group, 2024

2.3. Secondary data collection

Secondary, publicly available data were consulted for most of the indicators, also supplementing the analysis of the data. The identified indicators were defined by the MEL Task Force in such as they were mostly reliant on secondary data. Careful attention was paid to use reliable data sources, such as from the United Nations Educational, Scientific and Cultural Organisation (UNESCO), the Organisation for Economic Co-operation and Development (OECD), and the World Intellectual Property Organization (WIPO). Any secondary data used are cited for each indicator in the methodology box and are also included in the Bibliography.

2.4. Primary data collection

For some of the Agenda's indicators as defined by the MEL Task Force, information on initiatives included in the Agenda's Dashboard was used to collect primary data (for other indicators, secondary and/or proprietary data was sufficient). For these indicators reliant on primary data, a survey was conducted targeting coordinators of initiatives included in the Dashboard. At the time of the survey's dissemination in October 2024, there were 42 initiatives listed in the Dashboard. Out of these, coordinators of 25 initiatives responded to the survey representing a response rate of 60% (sample size n=25). In a few cases, some survey respondents were only able to provide estimates (instead of exact figures) in response to certain survey questions. Additionally, in many cases, respondents chose not to answer specific questions, resulting in a low "n" (the number of valid responses) for several questions (this will be specified for all cases to which it applies).

Further to the survey, interviews were also organised with coordinators of initiatives and projects featured in the Agenda's Dashboard, to capture additional qualitative insights. Data from the interviews is summarised in pink boxes for relevant indicators.

The full set of survey and interview questionnaires are provided in the annex (Survey Questions on page 135, Interview Questions on page 138).

3. Indicators relevant for the AU-EU Innovation Agenda

3.1. Objective 1 – Make it real

This section covers Objective 1 of the Agenda which aims to translate the R&I capabilities AU- and EU-based researchers and innovators into tangible outputs, such as products, services, businesses, and job opportunities, especially for the youth, both in Africa and in Europe. This Objective emphasises inclusivity by recognising local innovation, grassroots projects, and diverse forms of knowledge, including the humanities and social sciences, as essential for sustainable growth.

Data presented here is on indicators related to the translation of results into tangible outputs (e.g., via patents), the sharing of knowledge and innovation outputs and the dissemination of knowledge (e.g. via publications).

3.1.1. Translation of results into tangible outputs

1. Number of patent applications filed jointly by African and European organisations, between July 2023 and July 2024

About the indicator: The indicator presents the number of patent applications filed jointly by African and European organisations. It aims to capture information about AU-EU research collaboration resulting in innovation ready to be exploited commercially.

Methodology: The data extracted is from PATSTAT, a database drawing on the European Patent Organisation's (EPO) World Patent Statistical Database that contains bibliographical and legal event patent data from more than 80 industrialised and developing countries. As **Baseline (Year 0)** the period of August 2022 - July 2023 is considered. However, given that patent applications may take up to 18 months before they are published, the data may not fully capture Year 0, and it was not yet possible to collect data for Year 1. Further updates will be provided in later MEL reports.

For each priority area of the Agenda, IPC (International Patent Classification) or CPC (Cooperative Patent Classification) codes that regroup all relevant patents were identified (see Annex 0). For the Public Health and Green Transition priority areas, specific patent groups were identified. For the Innovation and Technology priority area, it was decided to include *all* patent applications in Year 0, based on the assumption that an invention is by definition always the result of innovation. For the priority area of Capacities for Science, all patents were included where at least one of the applicants or inventors is affiliated to a university since this demonstrates a link to science.

Provenance of the inventors and applicants is analysed separately in Figures 5 and 6. In fact, a patent can be filed by several applicants and several inventors. The two roles are often different in an application. The applying organisation(s) will be owners of the patent once it is granted.

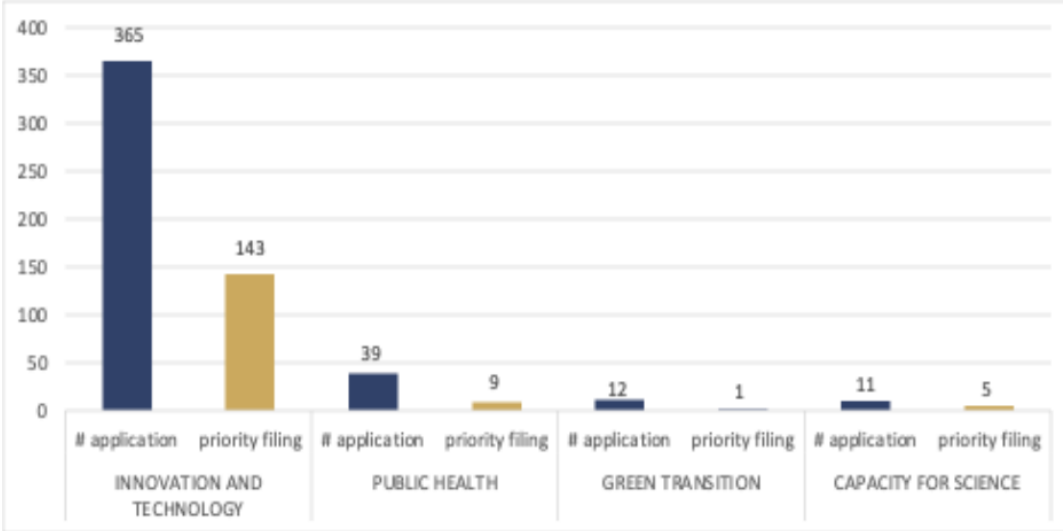
The total number of filings may not provide a precise measurement of invention, given that duplications might occur for parallel filing in different countries. Therefore, also priority filings (Figure 4 golden columns) are indicated, which correspond to the first patent application filed in any country for a specific invention.

It is also important to note that such metrics only partially capture the full extent of innovation taking place in a country, and this is the case in particular in an African context (see, for instance, Reeb & Zhao, 2021). In future MEL rounds, copyrighted software but also outputs in terms of open science and open innovation could be captured to complement the picture, building on initiatives such as the Africa Open Science Open Hardware Community.

A contextual analysis on patents filed either by AU or by EU applicants (as opposed to jointly) is provided in Annex 0.

Limitations: This analysis does not include patent applications for the Agenda's priority area of "Cross-cutting issues", in light of the overarching sectoral nature of this priority area, encompassing topics pertaining to the other four priority areas [of (i) Public Health, (ii) Green Transition, (iii) Innovation and Technology and (iv) Capacities for Science].

Figure 2: Joint patent applications (by AU and EU organisations jointly)



GSF, 2024, PATSTAT Autumn edition 2024

Figure 3 Top 6 countries of origin for applicants in joint AU-EU applications in Year 0

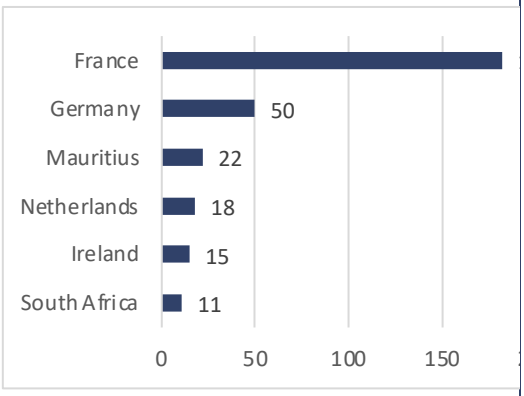


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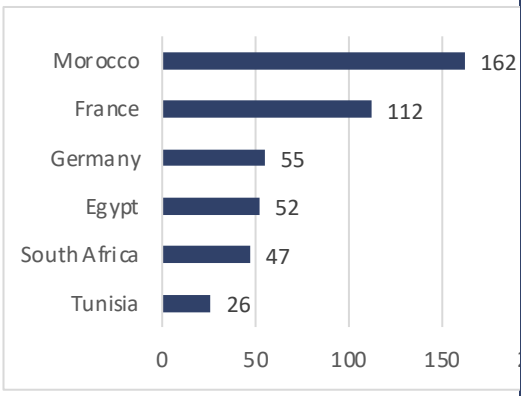
Figure 4 Top 6 countries of origin for inventors in joint AU-EU applications in Year 0



GSFGSF, 2024, PATSTAT Autumn edition 2024

Analysis: On the whole, the number of joint AU-EU applications is considerably lower than the number of applications in either AU or EU countries (see annex 0). This is linked to the fact, that, generally, single patent applications are more common than joint applications.

Figure 3 shows that the number of patent applications in the field of Health in Year 0 is higher than the corresponding numbers for the Green Transition and Capacities for Science, both in terms of patent applications in general and in terms of priority applications.

In joint AU-EU patent applications in Year 0, the organisations claiming ownership of the patents (applicants) are mainly from EU countries, whereas both continents are equally represented when it comes to the origin of inventors. This may be suggesting limited infrastructure and/or know-how on Intellectual Property Rights (IPRs) and patent application procedures in AU countries, which makes African inventions less valorised. This hypothesis is sustained by the fact that Africa is lagging behind in the number of patent applications by continent: in the year 2020, for instance, it filed only 0.5% of total patent applications versus 66.6% in Asia, 19% in North America, and 10.9% in Europe (APET Secretariat, April 2023).

Further analysis of joint AU-EU applications shows that during Year 0, France was the most active applicant among EU countries, with 182 patent applications during this period, followed – after a considerable gap – by, Germany, with 50 patent applications. Among the top 6 countries claiming patents ownership in AU-EU collaborations, there

are only 2 African countries, the ones that are generally leaders across all innovation indicators on the continent (Mauritius and South Africa, in decreasing order).

A focus on the origin of inventors involved in joint AU-EU applications shows that African countries occupy a comparatively higher position. In the top 6 countries of origin of inventors involved in AU-EU patents applications, Morocco is in the lead with 162 inventions, followed by other three African countries: Egypt (52), South Africa (47), Tunisia (22).

Key takeaways and policy implications:

- IPR protection is not yet fully developed in Africa. The African Regional Intellectual Property Organization (ARIPO) includes 19 English-speaking African countries, whereas the Organisation Africaine de la Propriété Intellectuelle (OAPI) covers 17 French-speaking African countries. The rest of the AU is not yet part of a regional IPR organisation. Africa has also some of the highest patent registration fees in the world (according to Payce Madden, 23 January 2020: when a patent registration costs around 7 000 USD in the UK and the US, the fees might near 16 000 USD in Germany, Cote d'Ivoire, Senegal, and Kenya).
- Whether the discrepancy between the continent of origin of applicants and inventors reflects a lack of knowledge of IPR procedures or some other factors, the issue needs to be examined further and addressed in the framework of the Agenda in the form of initiative targeting the commercialisation of innovation and research products. Notably, in November 2023 the first one in a series of biannual Workshops organised in the framework of the Agenda focused on IPRs and how to valorise them in the context of AU-EU collaborations. The report of the Workshop is available here.
- In future MEL yearly assessments, the scope of measuring innovation outputs could be expanded beyond patents to consider non-traditional forms linked to open innovation, software (incl. open source) and other innovations that are not captured by patent data.

2. Number of patents granted to African and European organisations having *applied* jointly, between July 2023 and July 2024

About the indicator: This indicator examines patents granted, to complement data on patents filed for. This indicator is expected to provide insights with regards to collaborative research and development (R&D), knowledge and technology transfer, and intellectual property rights (IPR) sharing and protection.

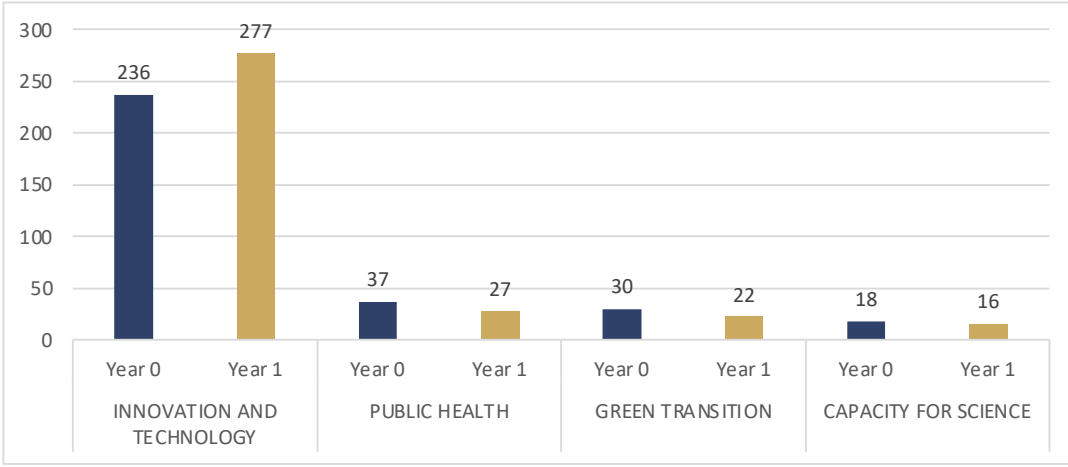
Methodology: The data extracted is from the autumn 2024 edition of PATSTAT, which includes entries up to mid-August 2024. Thus, data was collected for two periods: **Year 0 (August 2022-July 2023)** and **Year 1 (August 2023-July 2024**). Similarly, to patent applications, it was differentiated among four priority themes of the Agenda; i.e. (i) Public Health, (ii) Green Transition, (iii) Innovation and Technology and (iv) Capacities for Science. The priority of cross-cutting issues was not considered, due to its broad focus.

For patents granted to either by AU or by EU applicants, please refer to Annex 0.

Limitations:

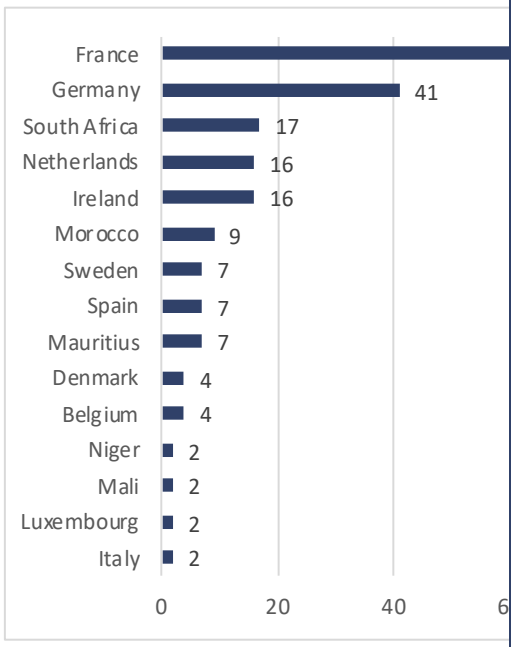
- The time between application and issue or refusal of a patent ranges from two to eight years. Therefore, the results presented below cannot be inferred to be linked or due to the adoption of the Agenda.
- The cross-cutting priority area is omitted here as well, as its definition is impossible to translate into IPC or CPC codes.

Figure 5 Patents granted to joint applications of at least one AU and one EU-based entity



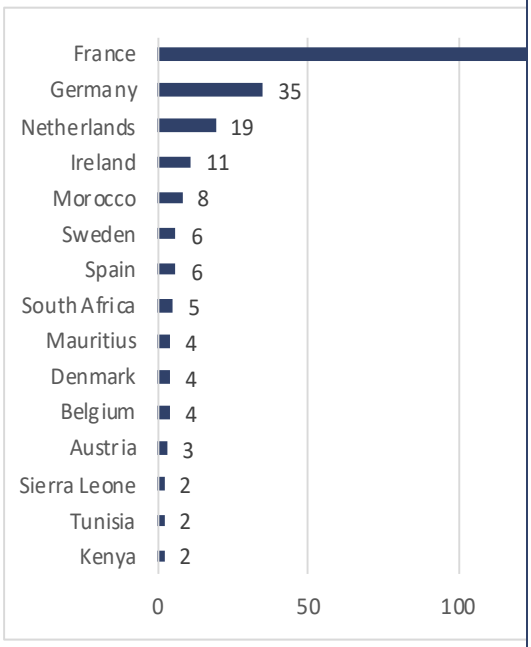
GSF, 2024, PATSTAT Autumn 2024

Figure 6 Top 15 countries of origin of applicants in granted joint AU-EU patents applications in Year 0



GSF, 2024, PATSTAT Autumn 2024

Figure 7: Top 15 countries of origin of applicants in granted joint AU-EU patents applications in Year 1



GSF, 2024, PATSTAT Autumn 2024

Analysis: The number of patents granted as a result of collaboration between AU- and EU-based institutions in Year 0 and Year 1 is stable (

Figure 5).[1] The priority in which the most patents were filed is naturally Technology and Innovation, followed in descending order by Public Health, Green Transition and Capacities for Science.

The most patents, both in Year 0 and in Year 1 were granted to France, followed by Germany. For Year 1, France made a much greater contribution with 260% more patents granted than Germany.

As for African countries, Morocco, South Africa, and Mauritius were granted the most patents. The slightly inferior numbers in Year 1, apart from France, may be explained by the delay in delivering decisions on applications.

This indicator is complemented by data on patents in the contextual indicators in Chapter 4.

[1] The Wilcoxon Mann Whitney test P-value=0.4857. There is not significant difference in terms of patents granted between the two periods.

Number of research outputs and innovations measured with a TRL of minimum 5?

About the indicator: The Technology Readiness Level (TRL) is a scale for measuring the maturity of technologies and innovations. Its scale starts at 1 for basic research and ends with 9 for release and industrial production of technology (European Commission, n.d., *The TRL Scale).* TRL 5 is the stage at which technologies are piloted, or a prototype is tested in a lab.

Methodology: This indicator is measured on the basis of the responses (n=21) provided by the initiative coordinators in the survey. The survey was conducted in October 2024, so the data below represents **Year 1** (2024).

Analysis: Of the total of 25 analysed initiatives, 21 initiatives provided feedback on this indicator (i.e. coordinators of initiatives featured in the Dashboard). Five initiatives reported having R&I outputs that are measured with TRL. Of these five, three initiatives reported that more than half of their outputs have a TRL of 5 or higher, one initiative stated that all of their outputs have a TRL of 5 or higher, and one initiative listed that they have six outputs with TRL 5 or higher.

Further feedback of on scaling of activities within initiatives: From the additional interviews conducted with initiative coordinators, scaling up initiative activities is mostly inhibited by lack of funding. Still, many initiatives have examples and histories of scaling up. For example, scale ups have been successful in the case of the ENRICH in Africa Centre, which was able to upscale its activities, expanding its reach on the continent. Other initiatives such as the Global Health European and Developing Countries Clinical Trials Partnership 3 (EDCTP3) Joint Undertaking builds on a longer programme history (established in 2003), with more funding at each round of the initiative, having scaled its activities over a longer period. The third edition of EDCTP (i.e., EDCTP3) will also require funding to be matched by African partners.

The additional interview question on approaches to scale up captured the way in which initiatives aim to expand their work by increasing technological development, widening activities, and seeking additional funding. For example, the Henddu initiative aims to improve its intelligent air quality monitoring platform, which is still at the prototype phase; the Horizon 2020 HUBiquitous initiative is also aiming for higher TRL for its digital solutions. The Team Europe Initiative on Manufacturing and Access to Vaccines, Medicines and Health Technologies in Africa (MAV+) aims to expand its offerings capacity building programmes (MSc, PhD, and Technical, Vocational, Educational and

Training (TVET) programmes) in Rwanda, South Africa, and Ghana, while The Guild-ARUA Clusters of Research Excellence (CoRE) initiative relies on networks of higher education institutions to apply for project-based funding to increase capacity building activities while realising equitable partnerships.

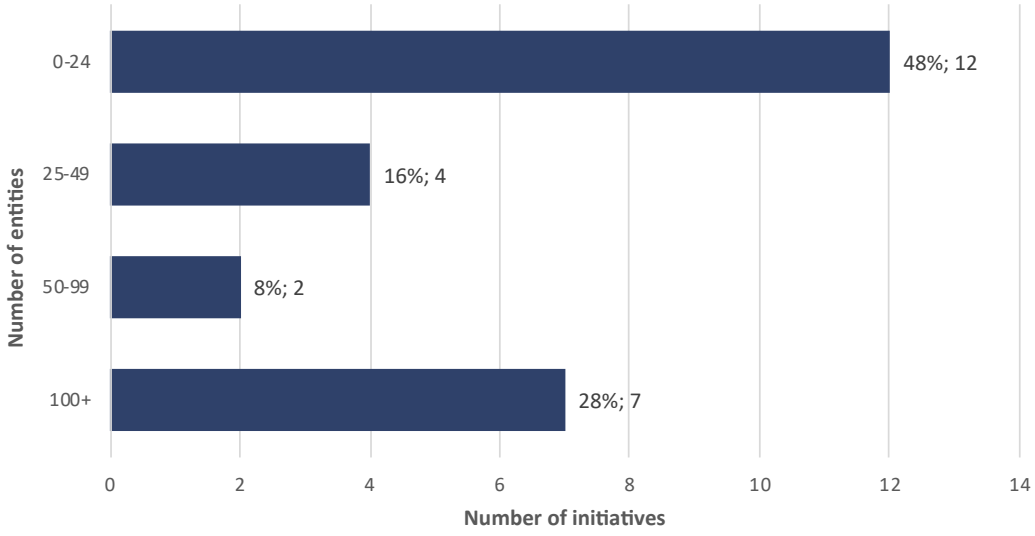
3.1.2. Knowledge and innovation outputs sharing and transfer

Number of entities involved in knowledge production

About the indicator: This indicator, lists the number of entities involved in knowledge production across the Dashboard of the Agenda. It provides insights into collaboration depth, research capacity, and innovation ecosystem development.

Methodology: This indicator is measured on the basis of the responses (n=25) provided by the initiative coordinators in the survey. The survey was conducted in October 2024, so the data below represents **Year 1** (2024).

Figure 8 Survey question: How many entities would you estimate are involved in knowledge production under your initiative?



GSF, 2024. Data from survey of initiative coordinators.

Analysis: Initiatives include either many entities in knowledge production or only a few. It is important to note that not all initiatives' core activities include knowledge production.

3.1.3. Dissemination of knowledge

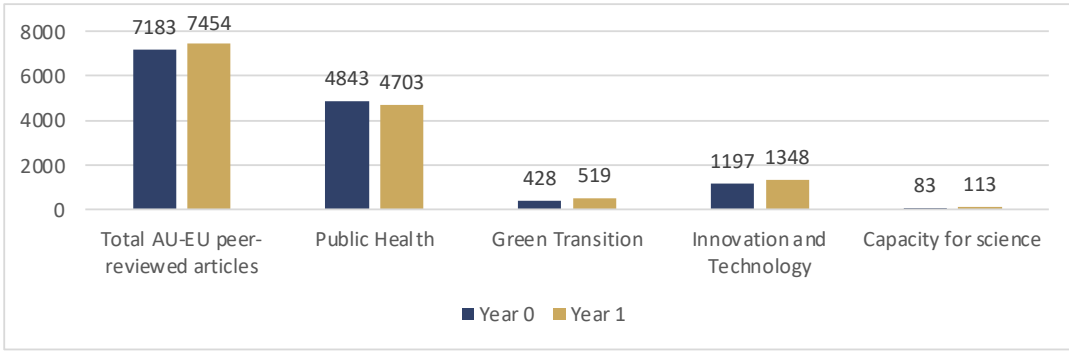
3. Number of peer-reviewed publications co-authored by AU and EU peers according to the different thematic focuses of the Agenda

About the indicator: The indicator measures outputs resulting from collaborations between AU and EU researchers, differentiating between the thematic priorities of the Agenda (Public Health, Green Transition, Innovation and Technology, Capacities for Science, and Cross-cutting issues). Monitoring the number of AU-EU co-authored peer-reviewed publications by thematic area offers a clear, measurable way to track scientific collaboration, research impact, and policy alignment within the Agenda. It provides insights into research strengths, funding effectiveness, and areas for improvement.

Methodology: Data were collected through LENS.ORG for the baseline (**Year 0**, referring to the timeframe intercurrent from 1 August 2022 to 31 July 2023) and **Year 1** (referring to the timeframe intercurrent from 01 August 2023 to 31 July 2024). Only peer-reviewed articles with **at least one author from EU-based research institutions and at least one from AU-based research institutions** were considered. Publications have then been analysed along the five priority themes of the Agenda, i.e. Public Health, Green Transition, Innovation and Technology, Capacities for Science and Cross-cutting issues. The latter having a diverse definition in the Agenda, it was not possible to extract meaningful keywords describing it. For **Public Health**, all publications related to the academic fields of medicine and health were considered. For the **Green Transition**, publications linked to the words green, climate change, environment conservation were researched. For **Innovation and Technology,** all publications related to new processes or technology, such as artificial intelligence, computer science, digital process, etc. were included. The **Capacities for Science** thematic priority has been understood for the purpose of this report to mean joint publications pertaining to capacity building partnerships, twinning, academic mobility of teachers and students, and knowledge transfer between institutions. However, identifying publications resulting from those activities was not attempted, what was examined was rather publications about this theme. For all themes, a meticulous search was carried out combining the keyword approach, the content of publication titles and the field of study. For more details, keywords can be found in Annex 0.

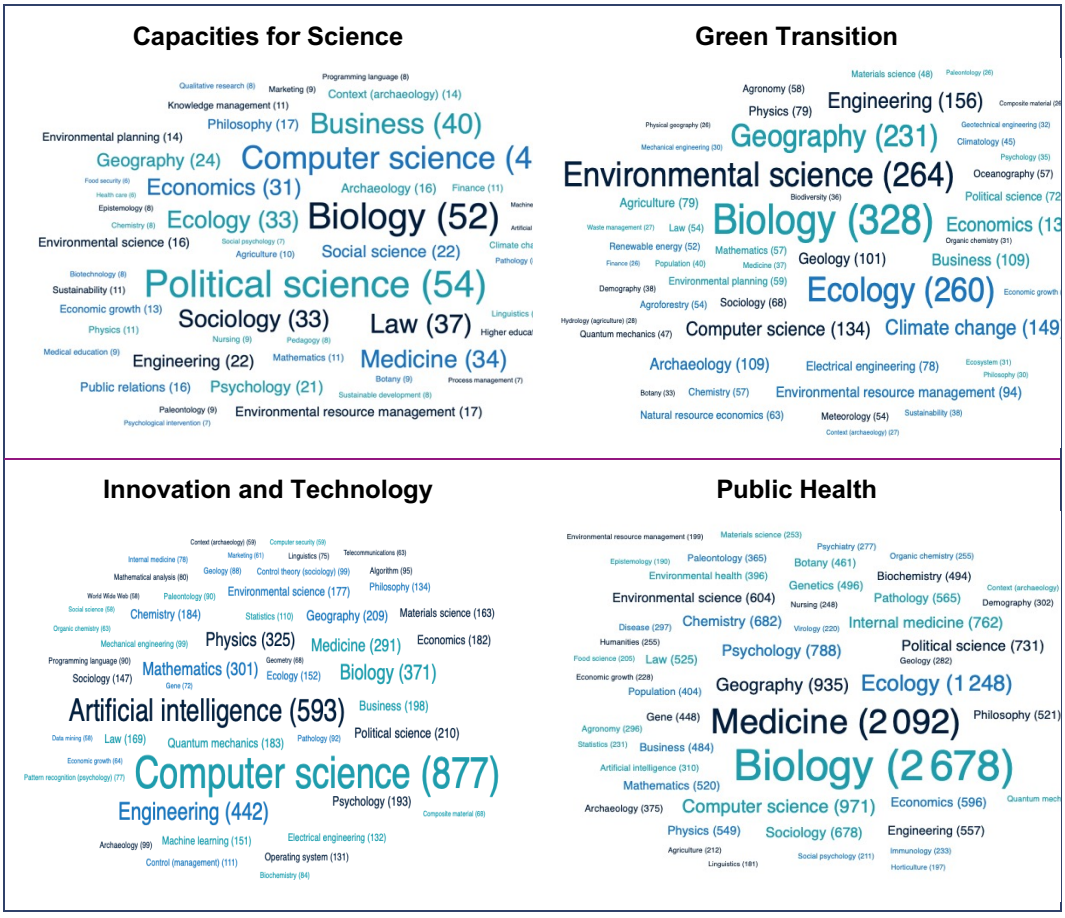
Limitations: Given the nature and timeline of the research and publishing process and the fact that publication of research results typically takes considerable time, publications from Year 1 are not necessarily directly linked to the adoption and the implementation of the AU-EU Innovation Agenda in 2023. Tracing this indicator over time, however, could reveal informative patterns in terms of the number of publications related to the different priority areas of the Agenda.

Figure 9 Peer-reviewed articles co-authored by AU and EU authors for the Agenda's priority areas



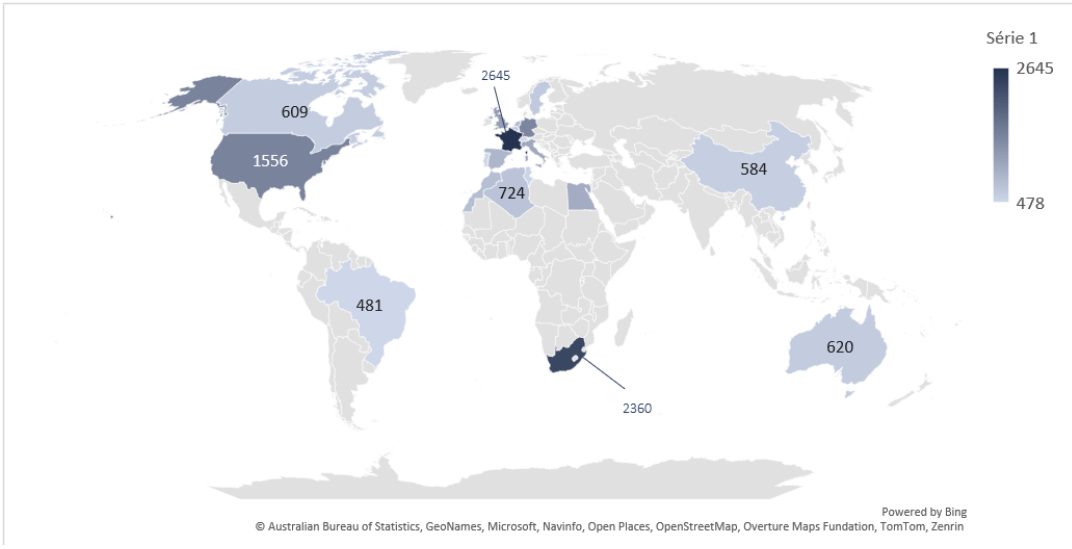
GSF, 2024 using lens.org database

Figure 10 Top fields of study per priority area in Year 1



GSF, 2024 lens.org database

Figure 11 Most active countries in AU-EU joint publications in Year 1



GSF, 2024 lens.org database

Analysis: *Figure 4* above represents a map of the countries involved in joint scientific production, ranging from the lightest blue (for the least involved countries) to the darkest blue. Examining the top 10 AU and EU countries with the highest number of joint publications shows that France and South Africa are in the lead, contributing with 2,645 and 2,360 articles respectively. The third country, the United States, follows with 1,556 publications. Other countries frequently publishing in AU-EU joint research are, in descending order, Germany, the UK, Italy, Egypt, Spain, the Netherlands, Morocco, Algeria, Belgium, Sweden, Australia and China too. The fact that countries from outside the AU and the EU (US, China, UK) feature prominently shows that AU-EU research collaboration often takes place in a wider, multilateral context. On the AU side, besides South Africa, North African countries contribute to most of joint publications, which can most probably be explained by the fact that these countries have a longer history of participating in EU-funded programmes on research collaboration. Interestingly enough, Tunisia, the only Horizon Europe-associated country in the region, does not appear on the list. On the EU side, the prevalence of Mediterranean countries is less obvious.

Analysing the number of publications by specific institutions, the same pattern becomes evident: institutions from South Africa and France are among the biggest contributors to AU-EU research collaborations. The University of Cape Town in South Africa leads the list with more than 800 publications, followed by the French CNRS (Centre National de la Recherche Scientifique), and the University of Witwatersrand in South Africa. However, overall, there are only four AU organisations in the top 15 of high-contributing institutions, three from South Africa (University of Cape Town, University of Witwatersrand, and University of Pretoria) and one from Egypt (Cairo University), the

remaining ones coming from EU countries (the French CNRS, Spanish National Research Council, the Ecole Normale Supérieure, etc.) (See Annex 0).

Analysing the fields of interest of publications per thematic priority in Year 1 (Figure 10), for the thematic priority of Public Health, the fields of medicine and biology were the most common. In the priority area of the Green Transition, fields of study such as ecology, environmental sciences and climate change are most prominent. Concerning the area of Innovation and Technology, the main publication subjects are those of artificial intelligence, computer science application, software, and media technology. The main fields of study involved in publications related to Capacities for Science are political science, biology, computer science, business, law, etc. Public Health areas have the highest number of publications and Capacities for Science the lowest number of publications both in Year 0 and in Year 1.

Key takeaways and policy implications:

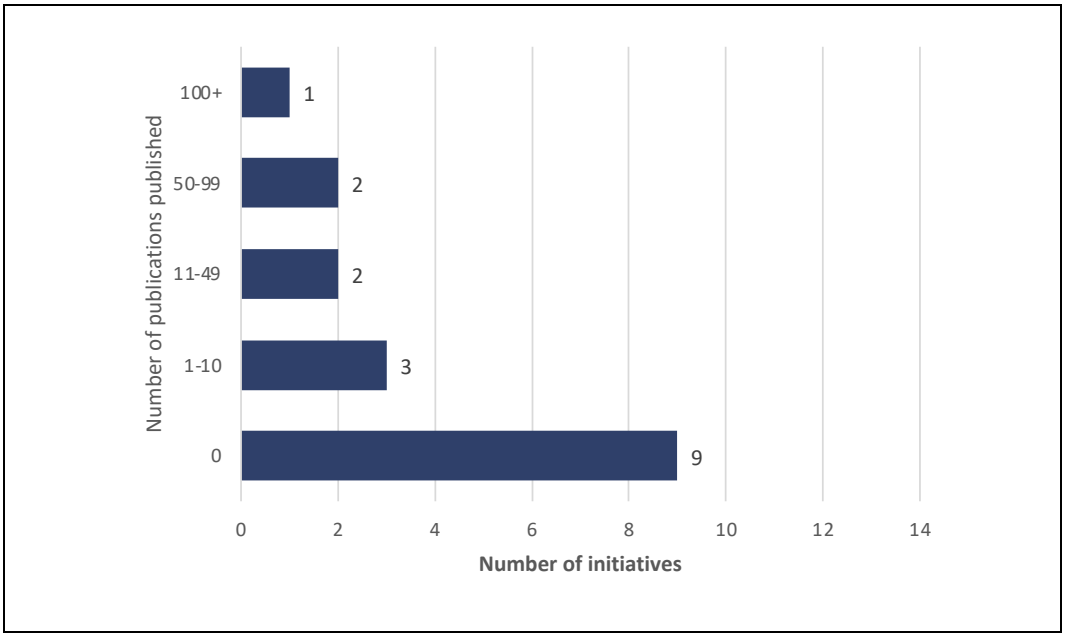
- Predominance of the North African countries in joint AU-EU publications shows how efficient regional programmes and initiatives can be in fostering research collaboration between continents (e.g. EU Framework Programme Horizon 2020 and Horizon Europe). The adoption of the AU-EU Innovation Agenda is expected to also bring in more researchers and institutions from sub-Saharan Africa. Next year's MEL assessment will monitor this closely.
- The leading positions of South African and French institutions in joint publications might be explained by well-established research ecosystems in both countries. South Africa has a long history of supporting research in higher education: agency funding started as early as 1911 through the Royal Society of South Africa (M.Luruli, Mouton, June 2016). Policy and decision makers might consider this as an example for investing in the capacity of local higher education institutions to participate in international research collaboration.
- For future monitoring of the publications/wider research outputs between Africa and Europe, future data collection could also investigate citations and h-index (h-index corrects for the disproportionate weight of highly cited publications or publications that have not yet been cited). This was not yet included in this report as a "lag effect" is assumed between the adoption of the Agenda (July 2023), publication of research articles, and the citation of publications. Future analyses will also examine intra-continental collaboration patterns, among different countries within the African and the European continents according to the priority areas of the Agenda.

Number of peer-reviewed publications on R&I published by members of the surveyed initiatives and the number of those available with open access

About the indicator: This indicator captures the number of peer-reviewed publications directly resulting from these initiatives (open access publications included). As holds true for the previous indicator, monitoring the number of AU-EU co-authored peer-reviewed publications is measurable way to track scientific collaboration, research impact. It provides insights into research strengths, funding effectiveness, and areas for improvement

Methodology: This indicator is measured on the basis of the responses (n=17) provided by the initiative coordinators in the survey. The survey was conducted in October 2024, so the data below represents **Year 1** (2024).

Figure 12 Survey question: How many peer-reviewed publications on R&I have been published by members of the initiative?



GSF, 2024. Data from survey of initiative coordinators. Total number of publications: 1,315. 8 initiatives did not respond to this question.

Analysis: Figure 12 shows the number of peer-reviewed publications on R&I as published by stakeholders partaking in initiatives contributing to the implementation of the Agenda. Most initiatives (53%) stated that they did not publish, and three initiatives (18%) submitted and secured publications of 1-10 papers (Figure 63 in annex). One initiative, the Partnership for Research and Innovation in the Mediterranean Area (PRIMA), reported that over 100 research articles have been published[2]. Of these publications, 7% were closed access and 93% were open access (Figure 64 in annex).

Based on this data, a total of 1,315 peer-reviewed publications were reported as published by the initiatives.

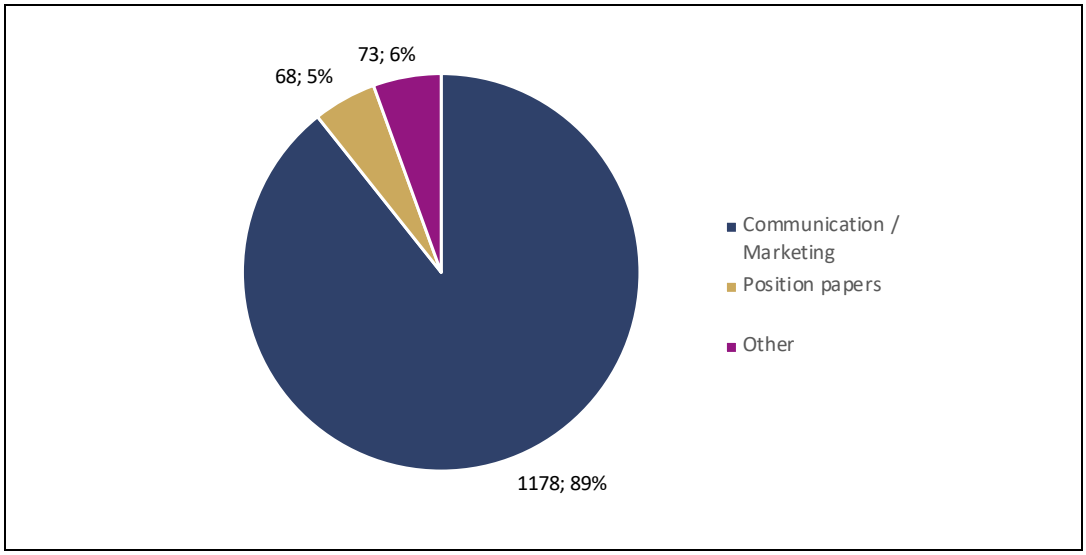
[2] The survey did not specifically inquire the date of publications (whether publications were published in Year 0/Year 1), hence it is assumed that initiatives responded with the total number of publications since their activities launched.

Number of non-scientific publications produced by surveyed initiatives

About the indicator: This indicator measures the types of publications produced by the initiatives. Monitoring the number of non-scientific publications generated by surveyed initiatives provides a valuable measure of knowledge dissemination, policy impact, industry engagement, and public outreach. It helps assess whether Africa-Europe STI cooperation is translating research into real-world solutions, informing decision-making, and driving innovation-driven development.

Methodology: This indicator is measured on the basis of the responses (n=14) provided by the initiative coordinators in the survey. The survey was conducted in October 2024, so the data below represents **Year 1** (2024).

Figure 13 Survey question: How many of the following kinds of publications have been produced as part of your initiative?



GSF, 2024. Data from survey of initiatives. Total number of publications: 1,319. 12 initiatives did not respond to this question.

Analysis: Figure 11 provides an overview of publications *other than peer-reviewed research publications* resulting from the initiatives. Most of the publications are as communication and marketing material (89%; 1,178). The survey asked for all publications, and not for a specific timeframe (i.e., it did not specify whether publications were published in Year 0 or Year 1 of the implementation of the Agenda). Further breakdown of these figures can be found in the annex (Figure 65).

Further feedback of on scaling of activities within initiatives: Initiatives featured in the Dashboard of the Agenda disseminate their knowledge in multiple ways, with online/digital platforms such as social media being cited repeatedly in interviews, followed by stakeholder events such as conferences or engagement of their networks.

The representative of the initiative EDCTP3 described most explicitly an institutional approach to ensuring and monitoring the dissemination of knowledge through clauses in grant agreements that prioritise open-source journals where possible.

Other research outputs include publications also published by initiatives. The Guild-ARUA CoRE projects produced in total 35 research publications across 20 clusters since its launch in June 2023, coinciding with Year 1 of the AU-EU Innovation Agenda.

With special regards to "tangible outputs", EDCTP3 has, for example, produced a number of studies3 contributing to research on non-malarial febrile illnesses (NMFI), HIV (KILGORIS), antibiotic treatment of children with severe pneumonia (PediCAP), etc.

[3] https://www.edctp.org/project-news/

3.2. Objective 2: Generate impact by design

This section covers the MEL of Objective 2 of the Agenda which focuses on building robust innovation ecosystems to foster positive socio-economic impact in both Africa and Europe. By enhancing knowledge exchange, technology sharing, and access to resources across AU and EU countries, this Objective aims to support entrepreneurship, public-private partnerships, and funding opportunities while advancing just and sustainable digital and green transitions.

The data presented here refers to indicators related to the strengthening of capacity and mechanisms for knowledge and innovation mobilisation (e.g., on higher education partnerships and on the role of tech hubs in building capacity and mobilising resources for innovation).

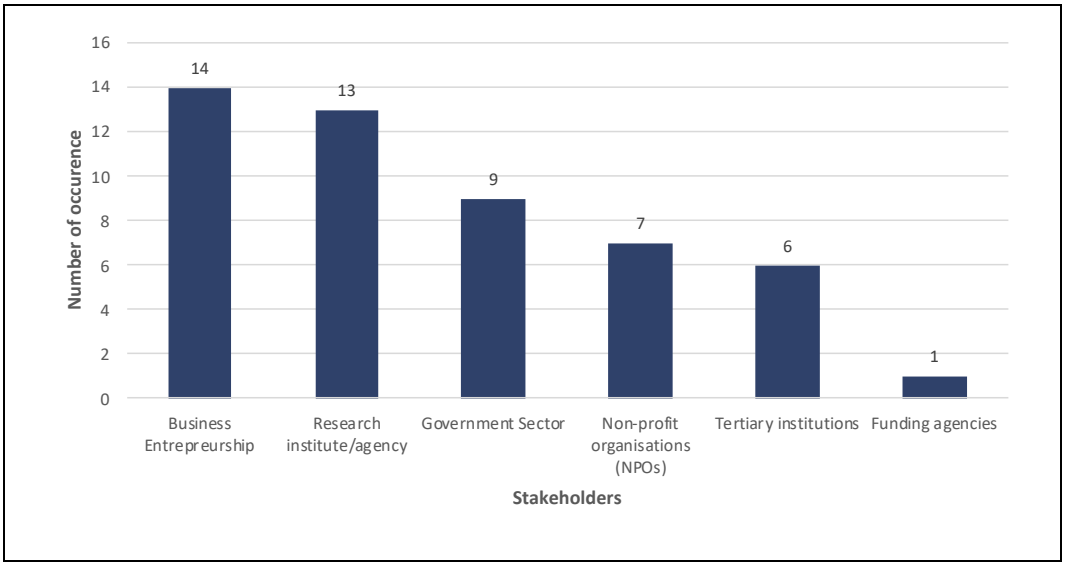
3.2.1. Strengthening capacity and mechanisms for knowledge and innovation mobilisation

4. Number of university or higher education institution (HEI) partnerships launched between AU and EU

About the indicator: This indicator measures the number of AU-EU partnerships established. Tracking the number of university or HEI partnerships between Africa and Europe provides critical insights into academic collaboration, knowledge exchange, STI workforce development, and policy impact. It helps assess whether Africa-Europe STI cooperation is translating into meaningful, long-term educational and research engagements that drive innovation and economic progress.

Methodology: This indicator is measured on the basis of the responses (n=22) provided by the initiative coordinators in the survey. The survey was conducted in October 2024, so the data below represents **Year 1** (2024).

Figure 14 Survey question: What stakeholders are represented in these new partnerships?



GSF, 2024. Data from survey of initiative coordinators. Multiple selection was possible.

Analysis: 91% of initiatives (n=21) confirmed having facilitated the establishment of new AU-EU partnerships through their activities (Figure 72 in annex). Partnerships in this question were understood as collaboration between at least two entities (AU/EU) that have taken on official deliverables/outputs (events, publications, product developments, etc).

Figure 14 states the number of stakeholders represented in new partnerships established by initiatives. The most frequently mentioned stakeholders were businesses and entrepreneurs, research institutes and agencies, followed by the government sector, non- profit organisations and tertiary institutions. The considerable presence of private sector and research institutes denotes their importance in innovation value chains. The conspicuous representation of research institutes may also reflect the fact that many initiatives in the Dashboard are funded through Horizon Europe, the EU's R&I Framework Programme. The absolute/total figure of AU-EU partnerships was not surveyed for.

5. Number of and related budget to AU-EU Public-Private Partnerships with a focus on AU-EU cooperation on innovation

About the indicator: This indicator captures the number of Public-Private Partnerships (PPPs) included in the Agenda's Dashboard. PPPs have the potential to bring in private sector investment in support of R&I while also leveraging funding from public authorities at various levels. PPPs also facilitate knowledge transfer and can foster alignment between policy priorities and market needs.

Methodology: Data on the number of AU-EU PPPs and their respective budget envelopes was retrieved from the Dashboard. For each initiative, the funding sources were investigated to identify those that included private sector co-funding.

Limitations: It is important to note that basing the measurement of this indicator only on initiatives that are featured in the Dashboard may underestimate the total scale of the overall AU-EU PPPs.

Table 2: Initiatives on the Dashboard entailing a Public-Private Partnership

#	Action Duration	Initiative	Priority Area	Start and End	Funding Entity	Implementing Entity	Budget	Private Funding
1	Short-term	African Union Smart Safety Surveillance (AU-3S) Programme	Public Health	Jan 2020 - Jan 2026	Bill and Melinda Gates Foundation (BMGF)	AUDA-NEPAD	9,295 m€	Approx. 1.4 m€
2	Medium-term	African Research Initiative for Scientific Excellence Pilot Programme (ARISE-PP)	Capacities for Science	Jan 2021 - May 2027	PANAF, Carnegie Corporation of New York	African Academy of Sciences (AAS)	25 m€	Approx. 1.8 m€
3	Medium-term	GAVI Technical Assistance for Malaria Vaccine (RTSS/R21) introduction	Public Health	12/01/2023-12/31/2025	The Vaccine Alliance, GAVI	PATH	1.867 m€	NA

GSF, 2024 using the initiatives of the Dashboard, (Gates Foundation, 2024; ARISE Programme, 2024)

Analysis: Three of the 42 initiatives (7%) of the Dashboard are PPPs. Two of the three initiatives, AU-3S and GAVI's Technical Assistance for Malaria Vaccine (RTSS/R21) introduction, address public health issues, whereas the other pertains to the priority area of Capacities for Science, enhancing research cooperation. One of the public health PPPs is directly co-funded by the Bill & Melinda Gates Foundation whereas the other (GAVI Technical Assistance) is indirectly. ARISE-PP's private funding comes from the Carnegie Cooperation of New York, a US-based fund. All private funders are from the US and represent foundations; currently, there are no corporations or businesses represented in this assessment, American or otherwise.

Reliable data on the private funding component could only obtained for two of three PPPs (AU-3S and ARISE-PP), amounting to €3.2 million to date.

Key takeaways and policy implications:

- As outlined in the methodology, the data for the PPPs has been taken from the Dashboard. Outside the Dashboard, there are more initiatives/programmes that have a PPPs component, and that also align with the Agenda's Objectives (see below). Therefore, the analysis presented here represents a fraction of the relevant PPPs occurring in Africa-Europe R&I cooperation. Reaching out to more such initiatives could increase the role of the private sector in implementing the Agenda, making it more visible.
- Diversification and the inclusion of different types of private funders may enable further implementation of the Agenda. The current private bodies involved include foundations from the US. Other examples could include private firms such as Siemens South Africa, which has partnered with the Council for Scientific and Industrial Research (CSIR) in 2021 to implement TVET activities for technical and digital skills to realise the Fourth Industrial Revolution (Siemens, 2021). Another example is Ericsson, a Swedish telecommunications/Information & Communication Technology (ICT) company which signed a Memorandum of Understanding (MOU) with the Nigerian government in 2024 for the development of 5G technologies in Nigeria and a partnership on capacity building activities/knowledge exchange activities that are based in the AU or in the EU (Ericsson, 2024).

6. Number of tech hubs in Africa and in Europe

About the indicator: The number of tech hubs in Africa and Europe can be used to benchmark the state and dynamism of the entrepreneurship/start-up and innovation ecosystem of the two continents. Tech hubs contribute to economic development, innovation and skill development, and digital transformation. They engage a wide range of stakeholders including entrepreneurs, investors, research organisations and universities. This indicator presents a macro-level perspective on innovation networks, complementing the more micro-level perspective provided by the data on the membership of the EuroQuity ENRICH in Africa Virtual Community Platform. For supplementary data on this indicator, Venture Capital (VC) data was also included in Chapter 5.

Methodology: The following sources were consulted to detect the number of tech hubs in Europe:

1. DEEP Ecosystems, Startup Heatmap Europe, 2023. This Heatmap provides a ranking of the top start-up hubs in Europe in 2023, identified through survey questions on favourability to European founders. This data is considered as baseline data for Year 0 (2023).
2. Financial Times, Europe's Leading Start-up Hubs, 2024. The ranking identified the top 150 hubs across Europe for the year 2024. Only Year 1 (2024) data is available, as the ranking was conducted for the first time for 2024. The ranking does not define its definition of a tech hub.
3. The European Digital Innovation Hub (EDIH) Catalogue, accessed in June 2024. The Catalogue presents an overview of hubs existing in the EU, funded under either the Digital Europe programme, Seal of Excellence or other initiatives. The Catalogue does not track when a hub joins the Catalogue, hence only Year 1 (2024) data is considered for the purposes of this report.

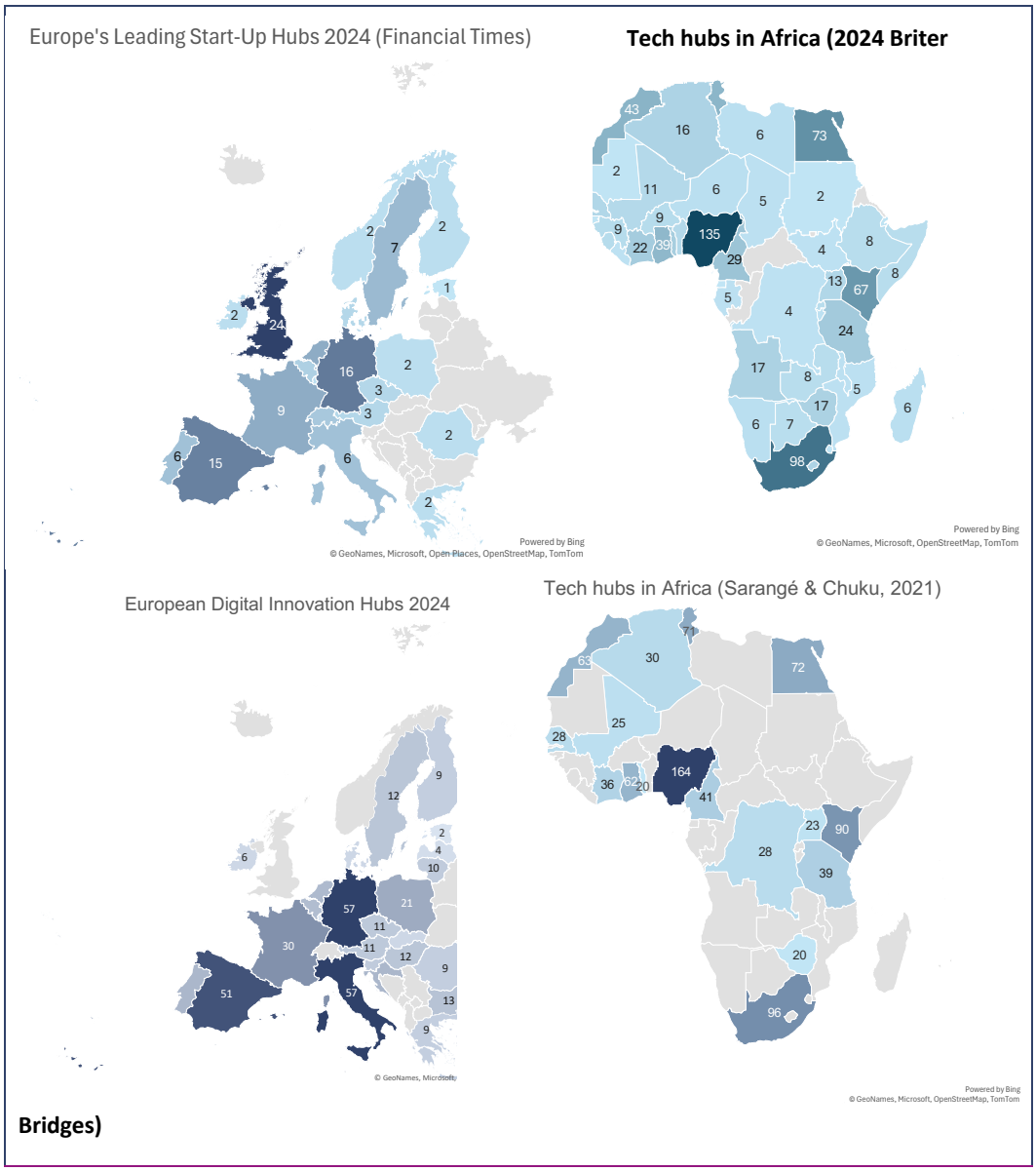
The following sources were consulted to detect the number of tech hubs in Africa:

1. Briter Bridges and Afrilabs, Bolstering Innovators in Africa Report, 2021. The report provides an overview of Africa´s innovation hub landscape in 2021. These are defined as "some combination of a workspace, internet café, coffee shop, training centre, incubator, accelerator, event venue and/or makerspace" that share some common characteristics, such as: community building, fostering collaboration, catalysing innovation.
2. Briter Bridges online database, accessed December 2024. The data base provides a list of all active tech hubs on the African continent. The source does not keep

history of the data's evolution through time, therefore only Year 1 (2024) is considered in this MEL report.

Limitations: Definitions for tech hubs vary between institutions and countries, and a clear, internationally recognised definition is lacking. Furthermore, not one data base is in place which lists active tech hubs in Africa and Europe. The data was thus collected from multiple sources. With different understandings of tech-hubs, often not specified by the authors of the rankings. Nonetheless, the analysis helps to get a better understanding of geographic areas (in this case countries in AU and EU) with a high concentration of tech hubs.

Figure 15 Tech hubs in Africa in Year 1 (2024) and in 2021 and Europe in Year 1 (2024)



GSF, 2024 using data from the Financial Times, Briter Bridges, and EDIH

Analysis:

Figure 15 shows the leading tech hubs in Africa and Europe by country in Year 1, with the exception of the one in the bottom right, which is dated from the 2021 Briter Bridges report on Bolstering Innovation.

In Europe, in the baseline Year 0 (2023) the top countries with regards to tech hubs were the UK, Germany, Spain, Netherlands, France. In Year 1, 2024, the UK has the most highly ranking tech hubs (n=24), followed by Germany (n=16) and Spain (n=15) according to the Financial Times ranking. Data from the EDIH Catalogue shows that the countries with the most hubs are Germany and Italy with 57 each, followed by Spain with 51, France with 30, and then Poland with 21. Moreover, the UK, which has the most highly ranked hubs from the Financial Times data, is not included in the EDIH catalogue, since the UK is not a member of the EU. Thus, no considerable changes can be noticed between Year 0 and Year 1.

In Africa, Nigeria (n=135), South-Africa (n=98) and Egypt (n=73) lead as the top tech hub countries in Year 1 (2024). Since 2021 the number of tech hubs has not changed significantly, growing slightly from 1031 to 1047 in 2024. The “big four” – Nigeria, South Africa, Kenya, and Egypt are the top players in 2021, as well as in 2024. Nigeria remains in first place in 2024, although its number of tech hubs has dropped by 29, on the other hand South Africa’s number of tech hubs increased slightly from 96 to 98. Kenya and Egypt switched places, with Egypt coming ahead in 2024 with 73 tech hubs. In relative numbers, Mali has seen the most significant growth from 11 tech hubs in 2021 to 25 in 2024 (127% increase), followed by Senegal (13 to 28 tech hubs; 115% increase), Algeria (16 to 30 tech hubs, 88% increase), and Uganda (13 to 23; 77% increase). It is however important to note that the 2021 data only included data for 17 African countries, compared to the 50 countries in 2024.

The discrepancy with regards to total numbers between the two continents reflects the different definitions adopted in the available sources (for example, as referred to above, Briter Bridges’ listing includes all tech hubs, whereas the Financial Times ranking only lists the best-performing tech hubs). While this makes it difficult to compare the continents, it still allows to infer on the main players in this space within Africa and Europe.

Key takeaways and policy implications: In Europe, the UK, Germany, France, the Netherlands, Sweden, and Switzerland have some of the strongest tech entrepreneurship ecosystems. The countries and networks are further established and may therefore represent further opportunities for twinning, knowledge exchange, and other forms of partnerships with Africa, as part of the implementation of the Agenda.

Besides the common feature and engagement of the “big four” countries in tech and innovation, special attention could also be placed to rising African countries. The largest growth by Mali, Senegal, and Algeria show how these Francophone countries may also disrupt the innovation space.

Due to the difficulty in finding consistent data (including definitions) of tech hubs across the years, it is difficult to monitor changes between Year 0 and Year 1, and this analysis primarily focuses on the landscape in 2024. For future MEL rounds, data on the number of tech hubs should be complemented by more refined data on VC deals, investments, valuations and successful exits (this is partially covered on page 91 on VC recipients and on page 94 on VC received in Chapter 5).

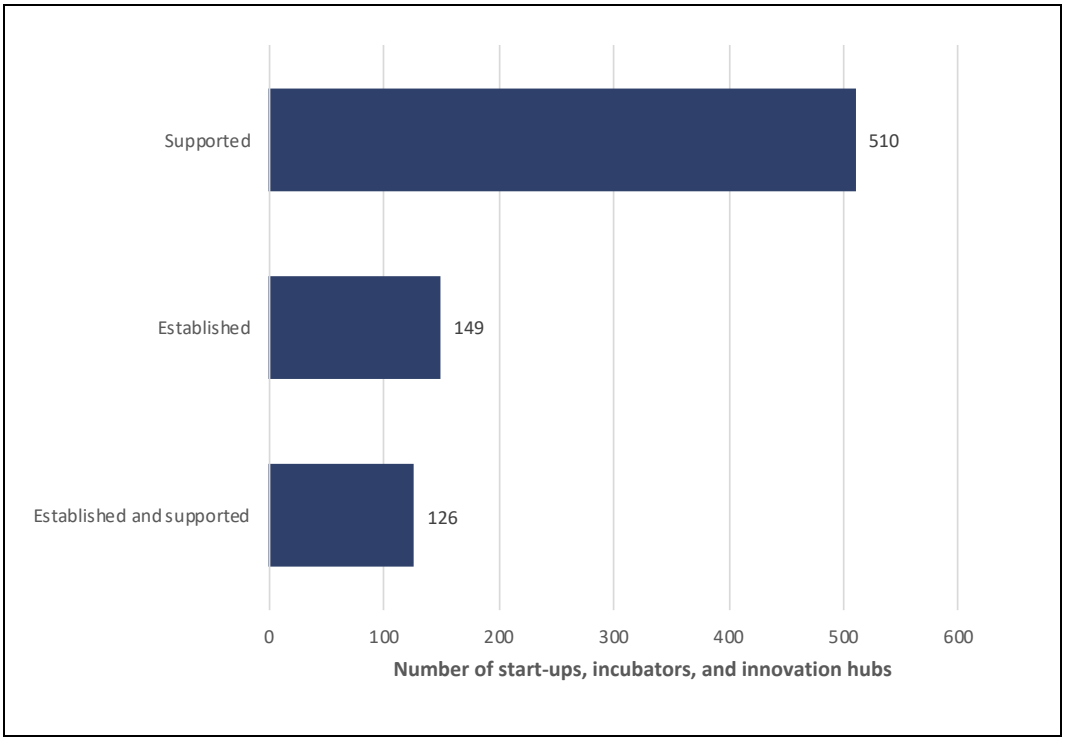
Additionally, it would be pertinent to monitor the changing definition/use cases of tech hubs, incubators/accelerators, and entrepreneurship support organisations, as these terms evolve naturally in their dynamic environment, and may also vary across institutions (research firms, donor bodies, etc.).

Number of start-ups, incubators, and innovation hubs established and/or supported by surveyed initiatives

About the indicator: This indicator measures the engagement of the surveyed initiatives with start-ups, incubators, and innovation hubs. Tracking the number of start-ups, incubators, and innovation hubs established or supported by AU-EU initiatives is crucial for assessing the real-world impact of STI cooperation. This metric helps gauge economic growth, job creation, technology transfer, and the effectiveness of policy frameworks in driving sustainable, innovation-led development in both regions.

Methodology: This indicator is measured on the basis of the responses (n=13) provided by the initiative coordinators in the survey. The survey was conducted in October 2024, so the data below represents Year 1 (2024).

Figure 16 Survey question: How many start-ups, incubators, and innovation hubs were established and/or supported under your initiative's activities?



GSF, 2024. Data from survey of initiative coordinators. This figure represents the sum of all responses. 12 initiatives did not respond to this question.

Analysis: 16 of the 25 initiatives confirmed working with start-ups, incubators, and innovation hubs, with 13 initiatives specifically detailing that their activities mostly supported these stakeholders (i.e., with a total of 510 start-ups, incubators, and innovation hubs supported) (see Figure 16). AEDIB|NET stood out here, with supporting 300 of such actors. The Guild-ARUA CoRE projects further stated that this data had not been gathered yet.

The high engagement of these actors demonstrates the close cooperation within this sector of the initiatives, and therefore of the Agenda. This underlines the importance of driving and supporting these activities, to bring their innovations to the marketplace.

3.3. Objective 3: Strengthen People, Communities, and Institutions

This section addresses Objective 3 of the Agenda which prioritises developing sustainable and resilient partnerships in higher education, research, and innovation between AU and EU countries. It emphasises empowering communities, involving the African diaspora, promoting gender balance, and addressing key areas like job creation, youth employment, and capacity building to prevent crises and foster knowledge economies.

The data presented here refers to indicators related to the role of coordination mechanisms in strengthening people, communities and institutions engaged in R&I collaboration, and on engagement of R&I stakeholders via researcher and student mobility schemes (i.e., Marie Skłodowska-Curie Actions and Erasmus+).

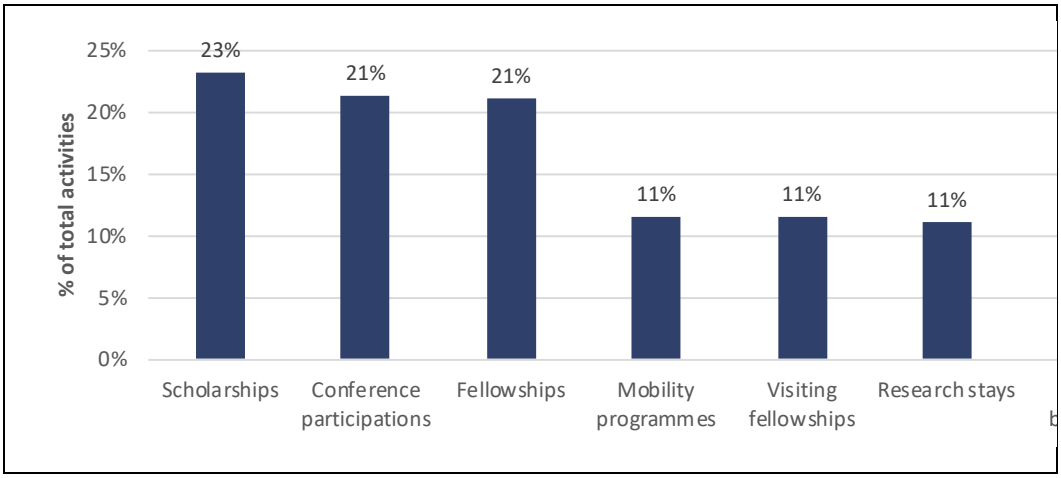
3.3.1. Coordination mechanisms

7. Number of knowledge exchange and experience-sharing initiatives launched between and within AU and EU countries

About the indicator: This indicator measures the number of knowledge exchange and experience-sharing activities launched between AU and EU countries to measure the level of collaboration, learning, and mutual capacity-building between AU and EU. Specifically, activities such as scholarships, conference participation, fellowships, etc. as well as the number of beneficiaries are looked at.

Methodology: This indicator is measured on the basis of the responses (n=11) provided by the initiative coordinators in the survey. The survey was conducted in October 2024, so the data below represents **Year 1** (2024).

Figure 17 Survey question: Under your initiative, have you launched any of the following activities? If so, how many?



GSF, 2024. Data from survey of initiative coordinators.

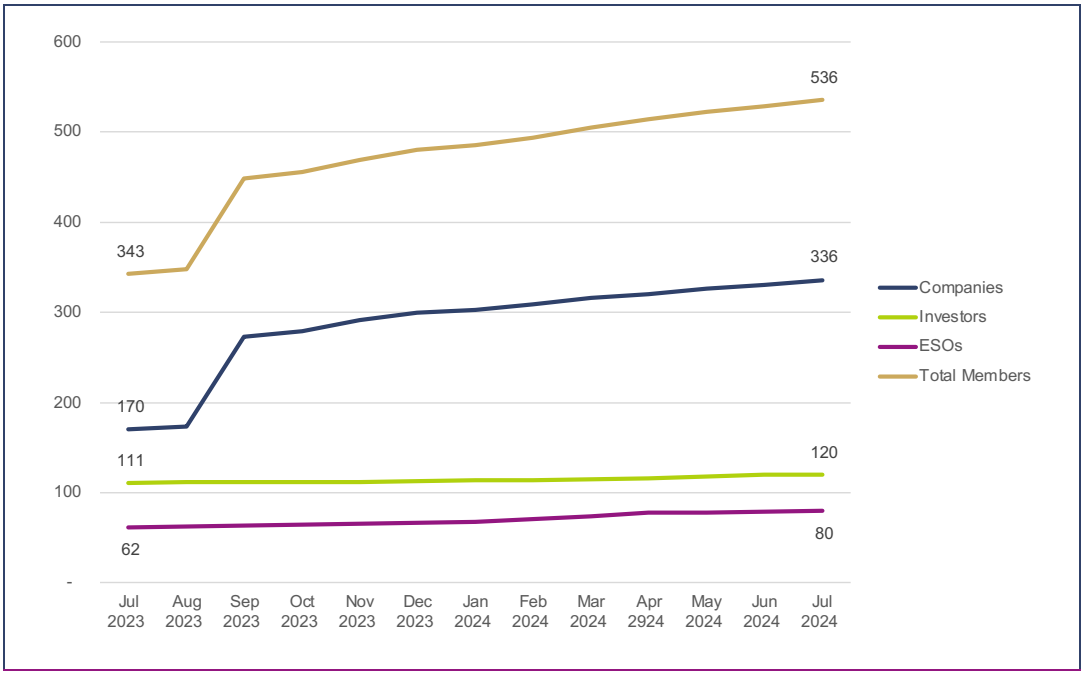
Analysis: At the time of the survey, the initiatives surveyed had carried out a total of 472 knowledge and experience-sharing activities. The most common activities in this respect are scholarships, conference participation and fellowships. Mobility programmes, visiting fellowships and researcher stays were less frequently supported by the initiatives surveyed.

8. Number of registered participants on EuroQuity ENRICH in Africa Virtual Platform

About the indicator: The EuroQuity ENRICH in Africa Virtual Community Platform brings together R&I stakeholders from AU and EU innovation ecosystems with the goal of connecting and strengthening entrepreneurs and their innovative ventures in both regions. Originally funded as a Horizon 2020 project, this Virtual Community is now a pillar of the activities of the ENRICH in Africa Center. It fosters collaborations, facilitates knowledge exchange, offers co-creation opportunities, and enables the delivery of quality services for African and European innovation stakeholders. The members on this platform therefore constitute an important component of the R&I networks between both continents.

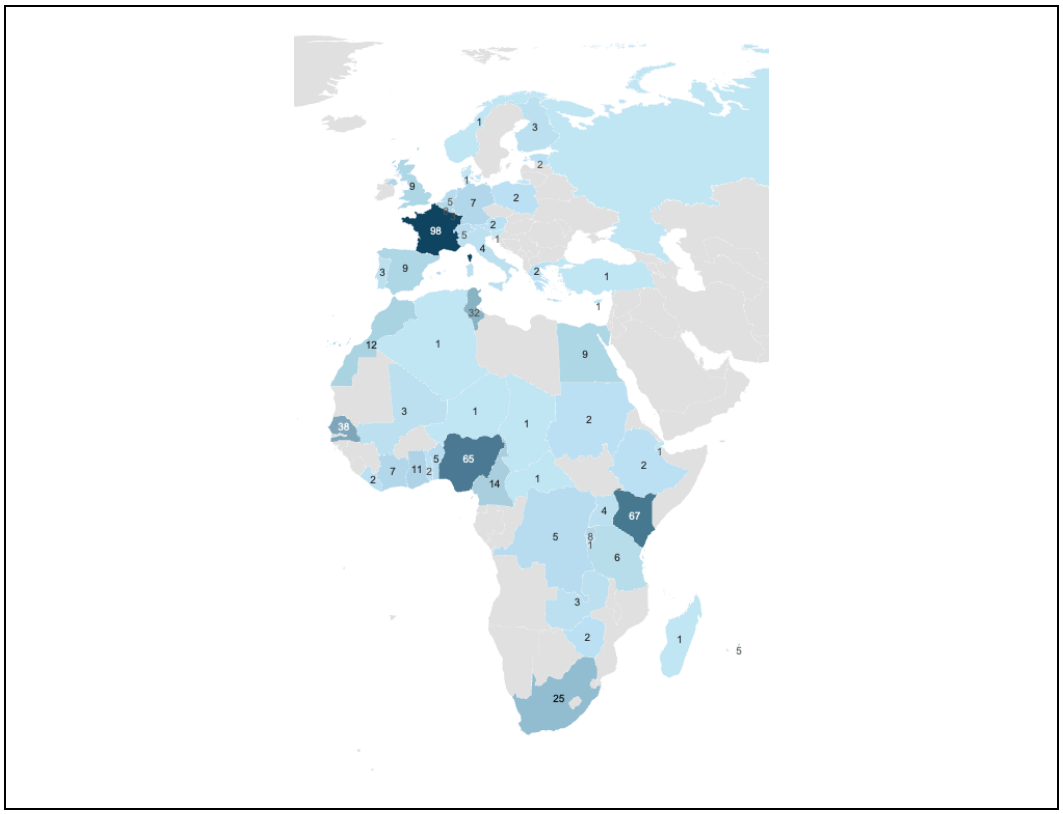
Methodology: This indicator is measured based on proprietary data provided by the ENRICH in Africa Center. **Baseline (Year 0)** data refers in this case to July 2023, whereas **Year 1** data refer to July 2024.

Figure 18 EuroQuity membership trends between 2023 and 2024



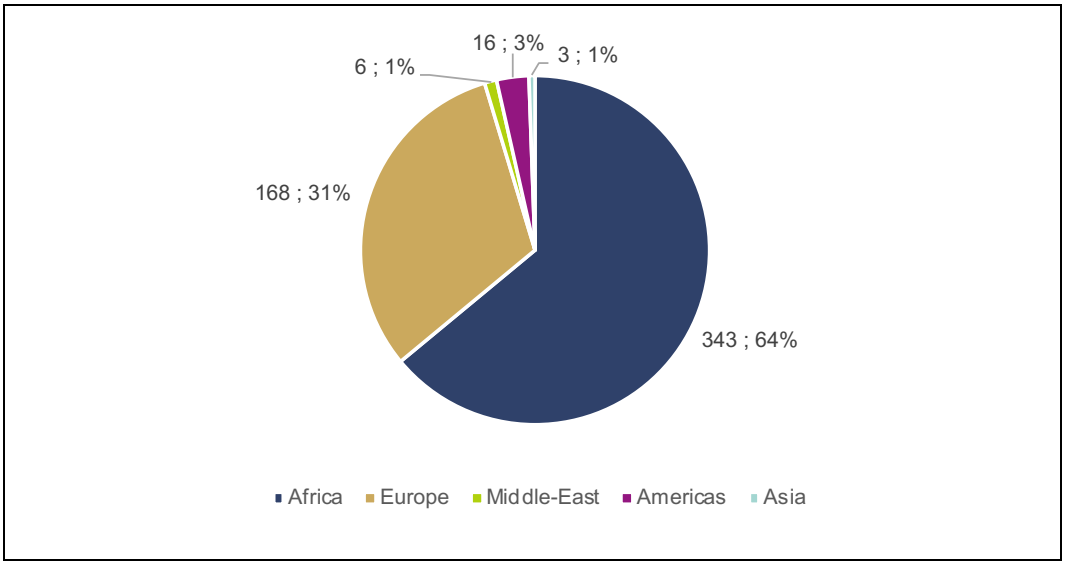
GSF and EuroQuity, 2024. ESOs = Enterpreneurial Support Organisations

Figure 19: EuroQuity members in Year 1 in Africa and Europe



GSF and EuroQuity, 2024

Figure 20 Geographies represented by registered EuroQuity members in Year 1



GSF and EuroQuity, 2024

Analysis: Figure 18 depicts the membership trends of the EuroQuity ENRICH in Africa Virtual Community Platform, between Year 0 and Year 1, broken down by types of stakeholders. A sharp increase in membership of companies was recorded after the adoption of the Agenda, between August and September 2023. Potential reasons explaining this uptick include the inauguration event of the ENRICH in Africa Centre (14 June 2023) and the AU-EU Innovation Festival (15 June 2023) and related promotion activities, both of which occurred in Cape Town, South Africa (and online) in proximity to the adoption of the Agenda. Between July 2023 and July 2024, the number of companies joining the platform kept increasing more gradually and less steeply (showing a 198% increase, from 170 in July 2023 to 336 in July 2024). Conversely, the number of investors and of Enterprise Support Organisations (ESOs) have increased more modestly (108% and 129% respectively) throughout the year. Total membership has grown by 156% between July 2023, Year 0 and July 2024, Year 1.

Overall, the top African countries represented in the platform in Year 1 are Kenya (n=67; 13% of total number of members), Nigeria (n=65; 12%), Senegal (n=38; 7%), Tunisia (n=32; 6%), and South Africa (n=25; 5%). The top European countries represented in the platform are France (n=98; 18%), Spain and the UK (n=9 each; 2%), Belgium (n=8; 1%) and Germany (n=7; 1%). African members made up 64% of total members (n=343), and Europe made up 31% (n=168). The Middle East (n=6; 1%), Asia (n=3; 1%), and the Americas (n=16; 3%) are also included in the membership. The top five company sectors at the baseline (2023) were agri-tech/agriculture (25%), tech agencies (9%), cultural and creative industries (8%), retail tech, e-commerce, and others (5% each). In Year 1 (2024) of the implementation of the Agenda, the most represented sectors were agri-tech/agriculture (16%), fin-tech (15%), digital health (7%), green-tech (6%), and cultural creative industries and tech agencies (5% each).

Key takeaways and policy implications:

- Membership growth on the platform has been gradual.
- The large overall representation (n=98; 18%) of French entities registered may be attributable to the fact that the Virtual Community is hosted by EuroQuity, a platform backed by French entities BPI France and Wallonie Entreprendre, Belgium, who extensively promoted this tool within their network. Continuous promotion among a wider range of countries in AU and EU is expected to provide wider representation.
- It is notable here that the most popular sectors for both the baseline and Year 1 were agriculture/agri-tech, feeding into the Green Transition priority area of the Agenda, also including its AU-EU R&I Partnerships on FNSSA and CCSE. Interestingly, in Year 1, digital health entered the top five sectors represented as well, denoting interest for and dynamism in the priority area of Public Health.

9. Number of capacity building initiatives launched to empower youth, women, and vulnerable groups

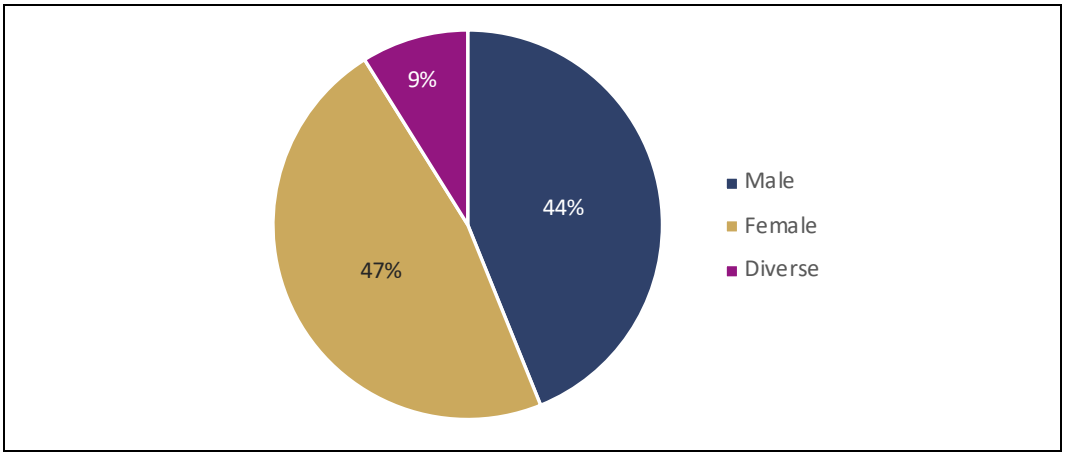
About the indicator: This indicator addresses the extent to which initiatives proactively engaged with under-represented communities in the R&I space through capacity building activities to determine inclusivity, equity, and sustainable development within AU-EU R&I cooperation.

Methodology: This indicator was aimed to be measured on the basis of the responses provided by the initiative coordinators in the survey to the question "Did you explicitly target any of the following groups of people in your capacity building activities?"

Limitations: The question "Did you explicitly target any of the following groups of people in your capacity building activities?" (with the answer options of youth, women, persons with disabilities, refugees, and others were presented); did not receive any responses (n=0).

As an approximation of the indicator, the analysis will be based on gender data from interviews with initiative coordinators, as well as survey data from the question: "How many R&I staff are involved in the implementation of your initiative and what is the gender breakdown?" (n=16).

Figure 21 Survey question: How many R&I staff are involved in implementing your initiative, and what is the gender breakdown?



GSF, 2024. Data from survey of initiative coordinators.

Analysis: The average female representation within the initiatives was at 47% and male representation at 44% (Figure 21 above). Two initiatives also reported diverse R&I staff, making up 9%. Globally, 1% of adults currently identify as transgender, non-binary, non-conforming, gender-fluid or "other", rather than as male or female, according to a recent World Economic Forum survey. Thus, it can be assumed that the 128 diverse employees mean diverse teams as in all genders (male, female, diverse) and not diverse as in not female or male.

Additionally, 74% of initiatives also reported having an explicit gender equality strategy as part of their activities (Figure 79 in annex).

Another related indicator included in this report (sourced from UNESCO) pertains to female researchers and is presented in Chapter 5.

Further feedback of on strategies addressing gender/social inclusion: The interviewed initiatives have addressed gender strategies to varying extents. Some systemic approaches are being undertaken by initiatives such as Innowwide and EDCTP3, which include gender criteria in their calls and elaborated on their practice approach to monitoring data on gender. Out of the 28 projects funded under the EDCTP 2022 calls for proposals, 11 are led by a female coordinator or female scientific project leader. From the 2023 calls for proposals, out of the first 27 funded projects, 16 are coordinated by a woman. EDCTP also has an Outstanding Female Scientist Prize which was first awarded in 2016, with the most recent award presented in 2023. The TALKAM initiative addressed people living with disabilities and youth as well as gender considerations as part of their inclusion strategies. Youth have been proactively engaged in leveraging civic tech to raise awareness on human rights and to report human rights abuses. The ENRICH in Africa Center has already planned for additional activities to address gender through capacity building around female entrepreneurship, as well as on how to mainstream gender considerations generally for innovation challenges.

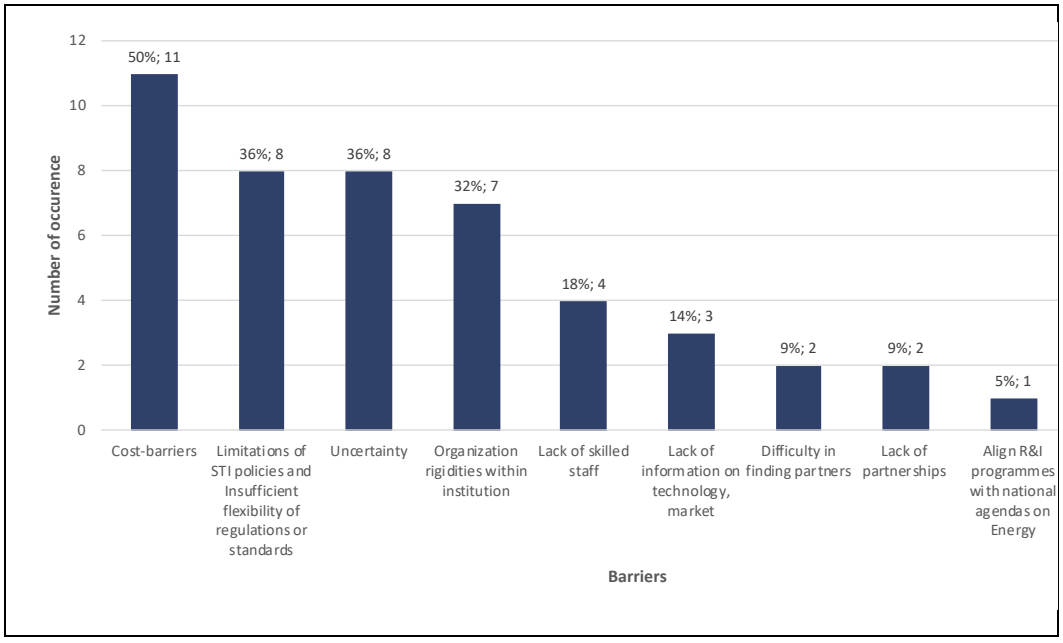
With Horizon Europe, the EC reinforces its commitment to gender equality in R&I, making it a fundamental priority and introducing stronger provisions. Gender equality is addressed at three key levels within the programme. A Gender Equality Plan (GEP) is now a mandatory eligibility criterion for certain legal entities from both EU and associated non-EU countries. The integration of the gender dimension into R&I content is required by default and assessed under the excellence criterion, unless explicitly stated otherwise in the topic description. Another key objective is to enhance gender balance across the programme, aiming for 50% female representation in Horizon Europe-related boards, expert groups, and evaluation committees. Additionally, gender balance within research teams serves as a ranking criterion for proposals that receive the same score.

Barriers faced in the coordination of bi-regional or lateral activities

About the indicator: This indicator identifies the main barriers coordinators experience when coordinating African-European bilateral activities. Understanding these barriers can help policymakers, funding bodies, and institutions develop targeted strategies to improve coordination, enhance cooperation, and ultimately strengthen partnerships between Africa and Europe in R&I. By addressing these challenges, the effectiveness and impact of bilateral initiatives can be significantly improved.

Methodology: This indicator is measured on the basis of the responses (n=22) provided by the initiative coordinators in the survey. The survey was conducted in October 2024, so the data below represents **Year 1** (2024).

Figure 22 Survey question: Which of the following barriers have you possibly faced (if any) in the coordination of bi-regional/lateral activities?



GSF, 2024. Data from survey of initiative coordinators.

Analysis: Initiative coordinators experience several barriers in the implementation of AU-EU R&I projects. Notably, the cost of running such activities poses challenges for 50% of initiative respondents, suggesting that more funding is needed to sustain them. Regulatory rigidity is another challenge that was frequently reported (36%). Regulatory sandboxes can help foster innovation. Internationally recognised standards can help scale innovations across countries. At the same time, respondents acknowledge that some issues are rather "domestic" in that their own institutions are too rigid.

Further feedback of Africa-Europe initiative coordinators on barriers to coordination: From interviews and text-based responses in the survey, commonly cited were financial barriers as well as systemic, structural barriers in the design of programmes that inform matters of equity. Financial barriers mentioned include, for example, lack of funding opportunities or general resources for initiatives to raise awareness/disseminate information on their work. In the case of EDCTP3, examples of systemic barriers include the regulations for research entities' eligibility for being financial controller of projects. Indeed, new regulation stipulate that controllers must have an agreement with the EU, which currently only qualifies South Africa-based institutions. Similarly, the initiative on the Centres of Regional Excellence described eligibility requirements of the MSCA Doctoral Networks as a constraint to full participation of African doctoral researchers enrolled in African institutions (see indicator on MSCA for more information).

3.3.2. Stakeholders and outreach engagement

10. Number of Africans or African entities participating in Marie Skłodowska-Curie Actions (MSCA)

About the indicator: The Marie Skłodowska-Curie Actions (MSCA) are a funding programme under Horizon Europe (Pillar I) for doctoral education and postdoctoral training for researchers and staff. The MSCA budget under Horizon Europe is €6.6b (MSCA, 2025). The programme hosts multiple actions: Doctoral Networks (DN), Postdoctoral Fellowships (PF), Staff Exchanges (SE), COFUND, and MSCA and Citizens. African researchers, staff, and entities are eligible to participate in the different actions. The MSCA initiative thereby acts as a cornerstone for capacity building in the Africa-Europe R&I collaboration and to the actions foreseen by the Agenda for the priority area of Capacities for Science.

Methodology: The following data were used to analyse African and European entities participation in the MSCA:

Horizon Dashboard - R&I projects, Cordis: Number of African entities participating in MSCA funded projects. Allocation to the timeframes bellow is determined by the project signature date.

To calculate the participation of African entities, data for **baseline/Year 0 (August 2022 – July 2023)** included entities of projects to the Horizon Europe calls for work programmes in 2021 and 2022. Data for **Year 1 (August 2023 – July 2024)** included entities of projects to the Horizon Europe calls for work programmes in 2022 and 2023. This is because there is a lag between a project call and the signature dates, after a call has been awarded. The signature dates were used to set the timeframes.

Subsequently, the following project calls (COFUND, DN, PF, SE, Citizens) are represented in the entity level data for Year 0 and Year 1: 2021-COFUND-01, 2021-DN-01, 2021-SE-01, 2022-COFUND-01, 2022-DN-01, 2022-PF-01, 2022-SE-01 2022-COFUND-01, 2023-COFUND-01, 2023-PF-01, 2023-DN-01, 2023-SE-01, 2023-Citizens-01. The data was accessed 8 January 2025.

Furthermore, the following data were used to analyse African individuals' participation in the MSCA:

eCorda: Number of African individuals participating in MSCA funded projects. The data was accessed 14 January 2025.

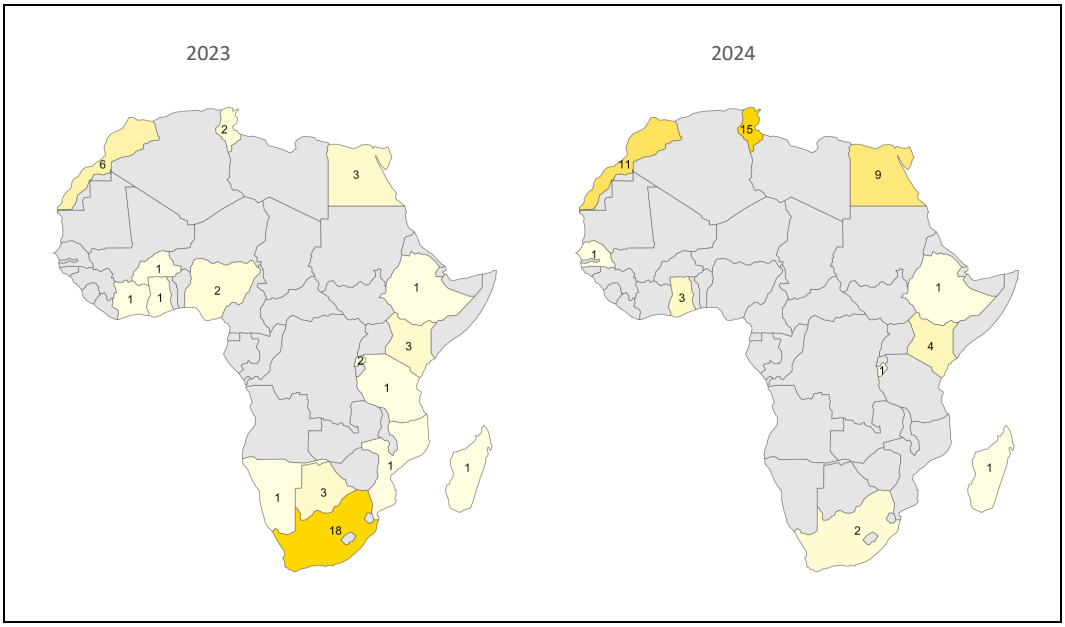
At individual participant level, for **baseline/Year 0** (**August 2022 – July 2023)** individuals whose mobility start dates were in this period were considered. For **Year 1** (**August 2023 – July 2024),** individuals whose mobility started in this period were considered. The

ending of their participation/mobility was not considered, as this can vary per call; the focus on the start date has been focused on to track.

MSCA. The following project calls for (COFUND, DN, PF, SE) are represented in the individual level data: 2021-PF-01, 2021-DN-01, 2021-SE-01, 2021-COFUND-01, 2022-PF-01, 2022-DN-01, 2022-SE-01, 2022-COFUND-01, 2023-PF-01, 2023-SE-01.

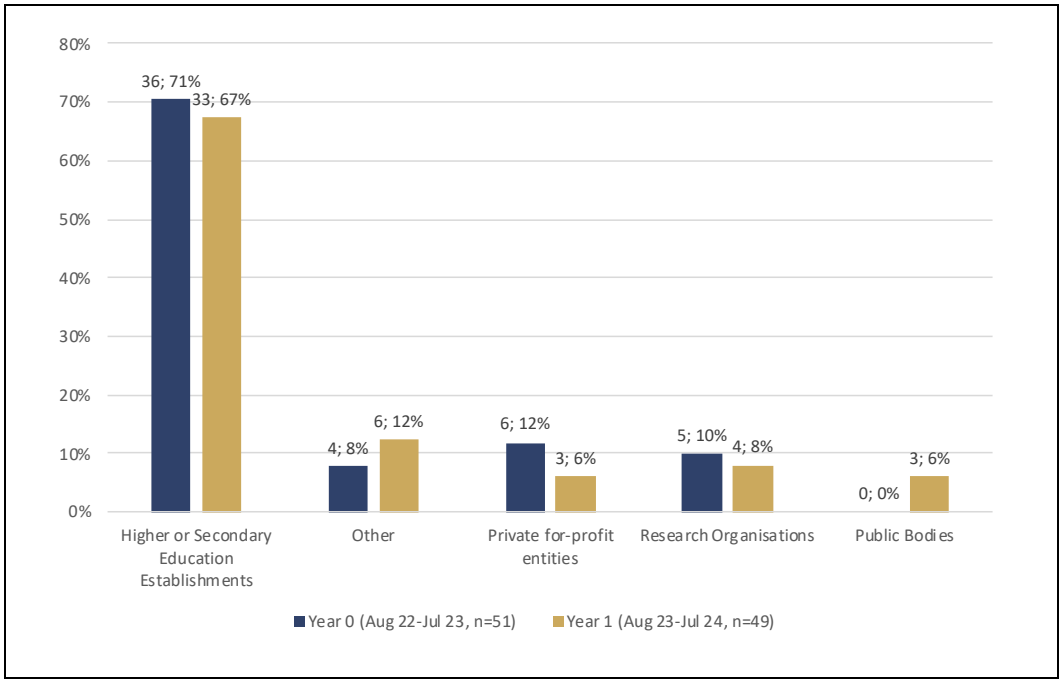
Limitations: It must be noted that as a direct consequence of the data cut-off dates and the call deadlines of the MSCA calls, a considerable proportion of grants from the 2023 calls has not yet been signed and/or reported in the Horizon Dashboard/eCorda. Furthermore, it should be noted, that most of the funded projects under the MSCA 2022 and 2023 calls have not yet filled all their open researcher and staff positions. Therefore, the number of African individuals participating in MSCA funded represents a lower bound of the actual participation.

Figure 23 Number of African entities participating in MSCA between 2023 (Year 0) and 2024 (Year 1)



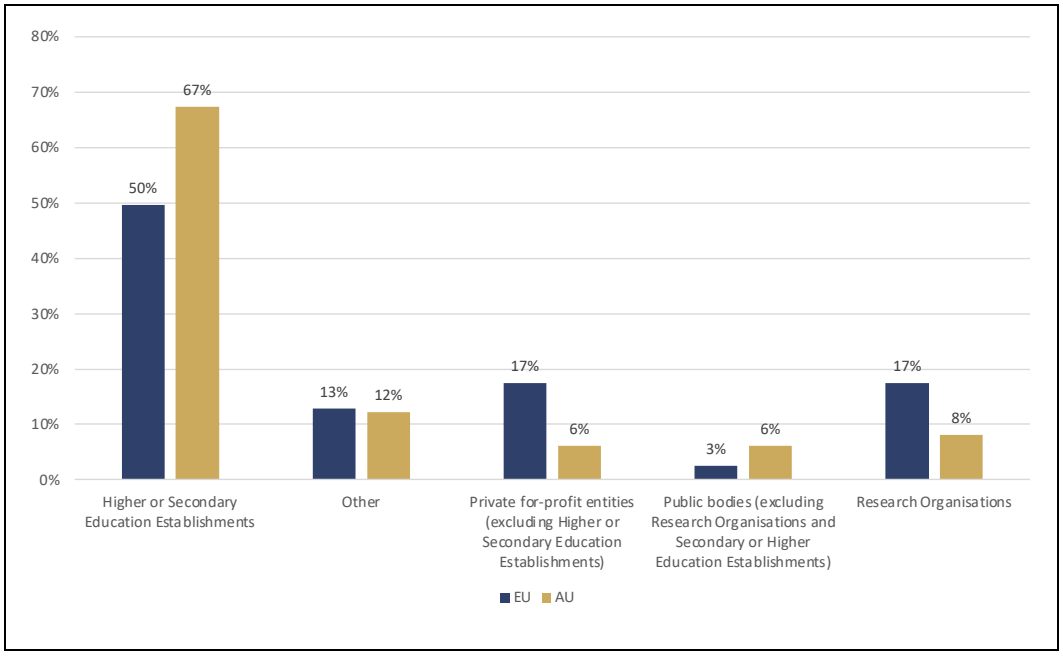
GSF, 2024. Data from Horizon Europe Dashboard, Cordis (accessed in 08.01.2025). For better visualisation the islands Mauritius (1), Cabo Verde (1), and São Tomé do Príncipe (2) were not included in the 2023 map.

Figure 24 African entities participating in MSCA, Year 0 and Year 1



GSF, 2024. Data from Horizon Europe Dashboard, Cordis (accessed in 08.01.2025). Data in total number and in percentages relative to each year.

Figure 25 Comparison of the make-up of entities involved in MSCA between Africa and Europe in 2024



GSF, 2024. Data from Horizon Europe Dashboard, Cordis (accessed in 08.01.2025).

Analysis: 51 African entities participated in the MSCA in Year 0/baseline (2022-2023), whereas 49 African entities participated in Year 1 (2023-2024). The breakdown of different African countries participating in the MSCA in the two years fluctuated considerably. In Year 0, the 51 African entities were representative of 19 countries, whereas in Year 1 they represented 11 countries.

Figure 23 shows the breakdown of participating African entities by country in 2023/Year 0 and 2024/Year 1. As shown in the figure, South Africa had the largest number of participating entities (n=18) in 2023, whereas Tunisia had the most in 2024 (n=15). Tunisia is also the only African country associated to Horizon Europe.

Figure 24 shows the percentage breakdown of the different types of African entities involved in MSCA in the baseline/Year 0 and in Year 1. Sectoral categories were defined as listed in MSCA/Cordis classification. Adopting this classification may also have limitations, as some of the defined categories can overlap. For example, some private higher education establishments are listed as private for-profit entities (instead of being categorised as "Higher or Secondary Education Establishments"). Under "Other", common entities included associations (for example, Association Tunisienne de Developpement Durable: La Recherche en Action), but also research institutions such as the Institute Pasteur de Bangui.

In any case, the analysis shows that a slight increase was recorded in the participation of public bodies and "Other institutes" between Year 0 and Year 1. Higher Education, private for-profit entities and research organisations have experienced a slight decrease over the same period. Nonetheless, despite the small changes, due to small sample size, these changes are not statistically significant.[4]

Figure 25 depicts the make-up of entities involved from Africa and Europe in 2024 only, where African higher/secondary education establishments make up a larger percentage (67%) compared to European establishments (50%), but European research organisations (17%) are more represented than African ones (8%).

Figure 50 (in the annex) shows the top participants by countries for Year 0 and Year 1. Morocco leads in MSCA calls for both years, making up between 20-27% of African participants. Following Morocco are Nigeria, South Africa, Egypt. 51 Africans participated in Year 0, and 157 Africans participated in 157. The most popular call was MSCA's Doctoral Networks with 255 participants across the two years, followed by the

[4] P-values based on the Fisher's Exact Test indicate no statistically significant differences in project involvement between Year 0 and Year 1 for all institution types: Higher or Secondary Education Establishments (p = 0.83), Other (p = 0.52), Private for-profit entities (p = 0.49), Public bodies (p = 0.11), and Research Organisations (p = 1.00).

Postdoctoral Fellowships with 97 participants across the two years. Moreover, a noticeable increase can be seen for total participants, rising from 51 in Year 0 to 157 in Year 1 (based off mobility start dates and participants' home countries).

For general Capacities for Science, the Staff Exchanges programme is unique because it offers, among other, training for administrative staff, managerial staff, and technical staff. The African countries that have benefitted the most from this are Morocco and Egypt across the two years.

Key takeaways and policy implications:

On the whole, the number of African entities and participants in MSCA is still rather low. As an integral part of the Horizon Europe Framework Programme, the MSCA should be further leveraged as a resourceful initiative to contribute to the implementation of the Agenda, particularly to its actions in the thematic priority area of Capacities for Science. However, as the MSCA are bottom-up in nature, its funded projects can also contribute to the achievement of the Agenda´s objectives in all its five thematic priorities.

11. Number of Africans or African entities participating in Erasmus+

About the indicator: Erasmus+ is the EU's programme that supports mobility in education, training, youth and sport in Europe. The current programme has an estimated budget of €26b (European Commission, 2024). The main programmes within Erasmus+ relevant to Africa are international credit mobility (ICM), Erasmus Mundus Joint Masters (EMJMs), capacity building for higher education (CBHE), and Jean Monnet activities (JMA). All of these benefit young individuals and researchers based in the AU or the EU who conduct temporary stays in the other continent.

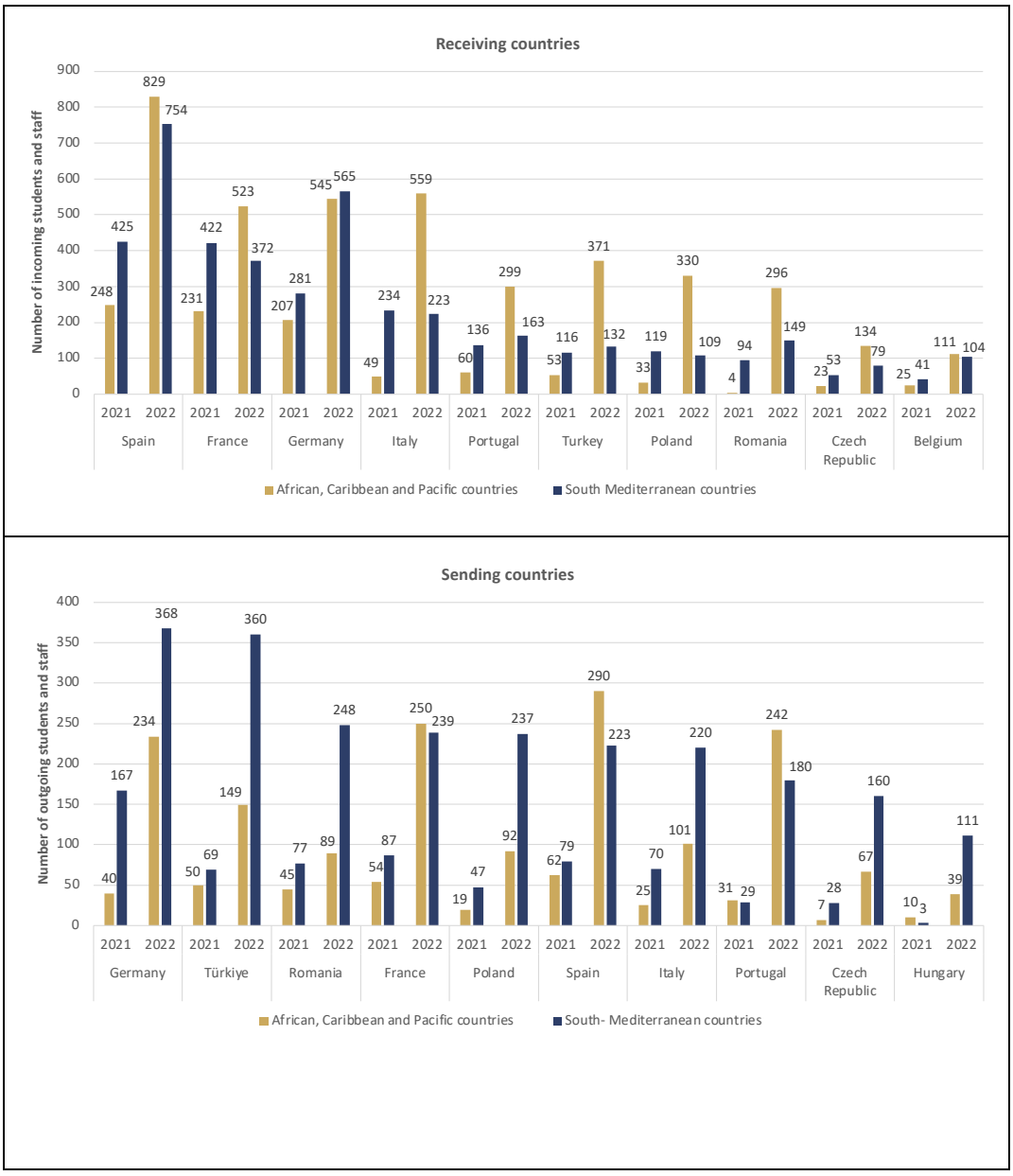
Methodology: Erasmus+ data was analysed from the Erasmus+ Annual Reports' Statistical Annex on participation (*European Commission, Directorate-General for Education, Youth, Sport and Culture, 2022 and 2023)*. The most recent reports available were from 2022 and 2021. A strict definition of baseline/Year 1 was not applied in this case as data published in the future would be seen as a better fit, however, the data presented here depict the trends leading up to the adoption of the Agenda in 2023.

The regional categorisations varied slightly between the two reports: in 2022, South-Mediterranean Countries and sub-Saharan African countries capture all AU countries, whereas in 2021, African, Caribbean and Pacific countries (ACP), sub-Saharan African countries, and South-Mediterranean countries capture all the AU countries. For this reason, sub-Saharan Africa was merged with ACP for clarity/consistency. Still, as ACP includes Caribbean and Pacific countries and as the South Mediterranean countries include those in the Middle East, the interpretability of this data strictly for the African-Europe context is somehow affected.

The top ten receiving and sending countries have been included in the graphics for brevity (for more information on the data, see in Annex A5.6 Number of Africans/African entities participating in Erasmus+ Figure 51,

Figure 52 and Table 9 under Additional Indicator Data in Annex).

Figure 26 Erasmus+ Mobility of staff and students in 2021 and 2022



GSF, 2024 using data from Erasmus+ Annual Report 2021 and 2022 Statistical Annex. Receiving countries: top 10 EU receiving countries from African, Caribbean and Pacific countries in 2021. Sending countries Receiving countries: top 10 EU sending countries to African, Caribbean and Pacific countries in 2021.

Analysis: On the whole, ACP countries (AU countries included) had a smaller participation in Erasmus+ both in sending and receiving participants, than the South-Mediterranean countries. Exceptions in 2022 include examples such as Spain, which received slightly more ACP participants than South-Mediterranean participants (829 vs. 754), or Spain and Portugal which also sent more participants to ACP countries than to South-Mediterranean countries. It can also be observed that the number of participants increased in absolute terms between 2021 and 2022 for both sending and receiving countries, especially for participants sent from South-Mediterranean and ACP countries. This is presumably due to normalising general mobility following peak pandemic travel restrictions in 2020 and 2021.

In the case of Southern European countries such as Italy or Spain, the strong engagement with other South-Mediterranean countries is probably a natural consequence of their geographical proximity.

For both 2022 and 2021, Spain was the leading European country for receiving Erasmus+ participants from the ACP and South-Mediterranean regions, whereas Germany is the main sending country with regards to ACP and South-Mediterranean countries.

Key takeaways and policy implications

- Country-specific data would support further assessment of the exchange between Africa and Europe and drive any conclusions or implications for the Agenda.

3.4. Objective 4: Learn, monitor, and scale it up

This section presents findings related to Objective 4 of the Agenda, which focuses on scaling successful bilateral and multilateral initiatives between AU and EU, enhancing public participation, and fostering inclusion to counteract talent drain. It emphasises capacity building for youth, women, and vulnerable groups, strengthening entrepreneurship, and ensuring a collaborative approach among science, policy, industry, and citizens.

The data presented here relate to indicators on co-financing of R&I collaboration (e.g. via the Global Gateway Africa-Europe Investment Package) and on the monitoring of the Agenda itself (e.g. by presenting key information on the initiatives included in the Agenda's Dashboard).

3.4.1. Co-financing

12. Amount of funding, either public or private, allocated to support initiatives aiming to implement the actions foreseen by the AU-EU Innovation Agenda

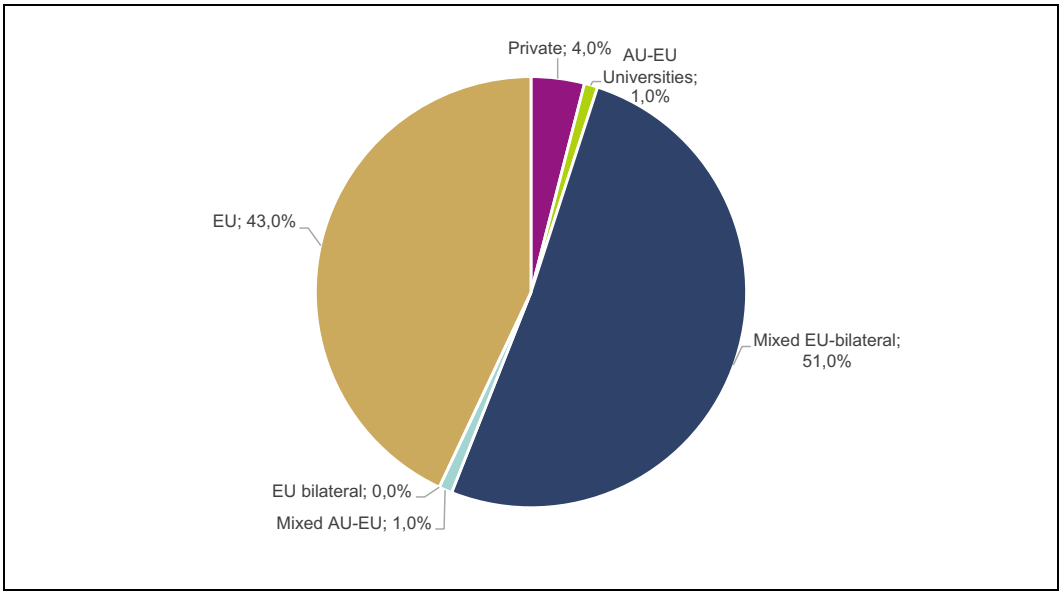
About the indicator: It measures the funding that supports the implementation of the actions foreseen by the Agenda by considering the budgets dedicated to the initiatives in the Dashboard. Tracking the amount of public and private funding allocated to the actions of the Agenda is essential for monitoring the progress, impact, and sustainability of the Agenda. It provides a quantifiable measure of investment priorities, policy effectiveness, and long-term commitment to the AU-EU joint R&I priorities.

Methodology: The source of this indicator is the Agenda's Dashboard of initiatives. Therefore, the evolution of this indicator over time will not only reflect changes in the overall budget available for the Agenda's implementation, but also the expansion of the Dashboard itself which adds more initiatives on a quarterly basis. The conditions of joining the Dashboard of initiatives are described in Annex 0.

Limitations: The Dashboard does not yet contain the totality of initiatives coherent with the Innovation Agenda's Objectives. Its expansion is ongoing and depends both on the identification of such initiatives by the Dashboard Task Force, and by spontaneous applications from implementing entities (through expressions of interest).

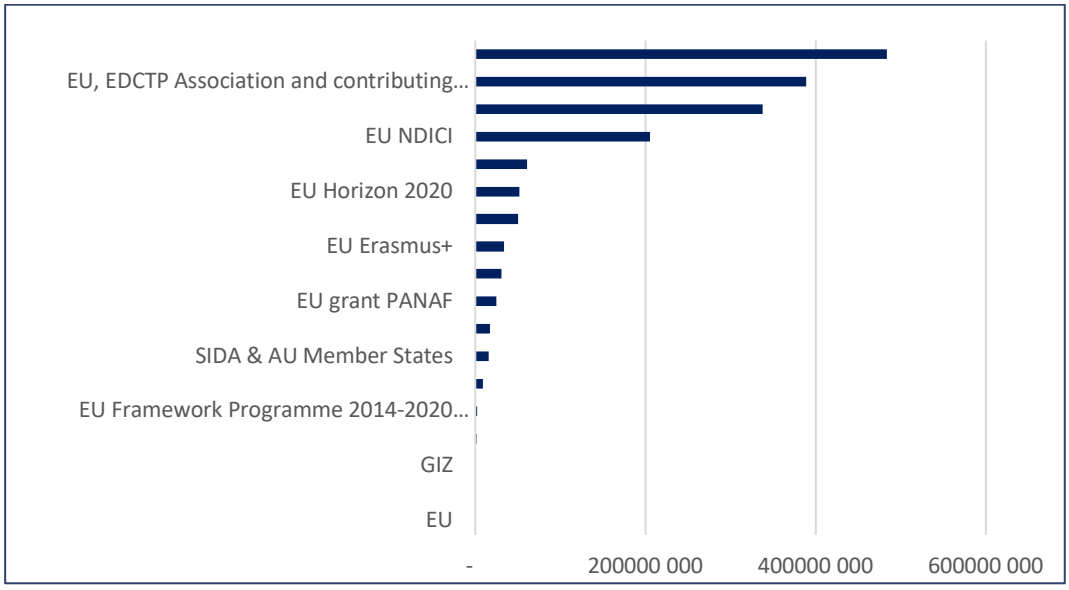
Initiatives of the Dashboard often address several priority areas of Agenda, without providing information on the budget allocated to each of them. This limits considerably the types of analysis that can be carried out and potential extrapolations that can be made from them.

Figure 27 Source of funding per type of funding institution



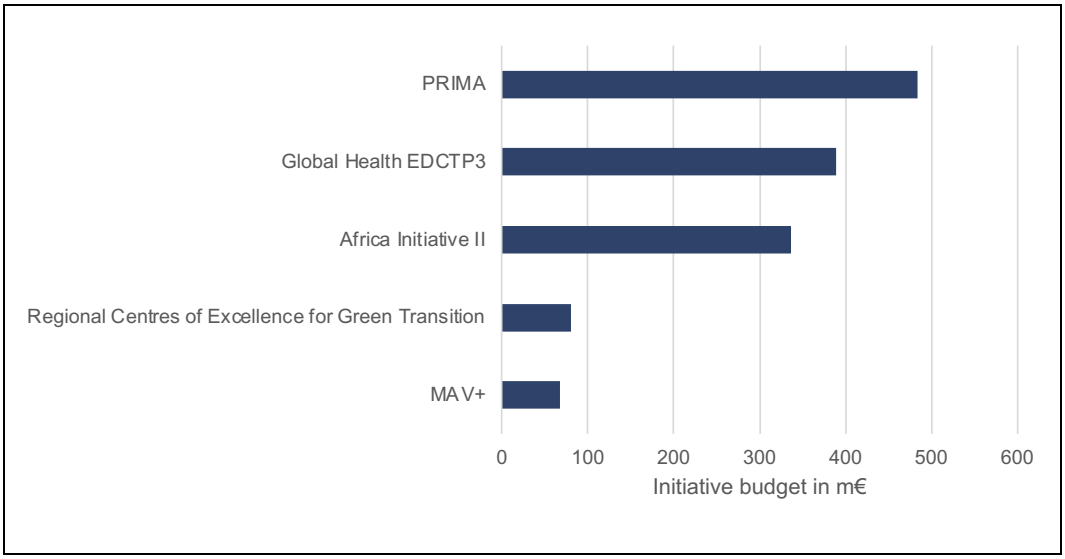
GSF, 2024: Dashboard of Initiatives.

Figure 28 Source of funding per instrument (€)



GSF, 2024: Dashboard of Initiatives.

Figure 29 Top 5 of initiatives according to their budget



GSF, 2024: Dashboard of Initiatives

Analysis: Figure 29 shows that European sources represent the vast majority of funding for initiatives represented on the Dashboard. For now, purely African-funded initiatives have not joined the list and mixed African-European sources only amount to approximately 2% of the total budget.

Initiatives on the Dashboard represent a total amount of funding of €1,714bn. Those that stand out for the size of their budget are:

PRIMA (Partnership for Research & Innovation in the Mediterranean Area) with an envelope of €484m, of which approximately 30% is financed by Mediterranean members (Algeria, Morocco, Tunisia, Egypt, Lebanon, Jordan, Israel, Turkey).

Global Health EDCTP3, a partnership between the European Commission, representing the European Union, and the EDCTP Association, representing the governments of 15 European and 30 sub-Saharan African countries with an amount of € 389m (of which a few millions from members other than the EU).

"Africa Initiative II" of the Horizon Europe Work Programme 2023-2024, with a total of €337m from Horizon Europe, seeking to enhance cooperation with Africa to promote targeted actions to finding locally adapted solutions to global challenges[5].

Regional Centres of Excellence (RCoEs) initiative is funded by the European Union (NDICI Global Europe) with a budget of € 80m and implemented by the Center for

[5] Africa Initiative I is not included in the Dashboard.

International Forestry Research and World Agroforestry (CIFOR-ICRAF) in collaboration West African, Central African, and Eastern and Southern African regional organisations. It aims at ensuring sustainable management of Africa's forests, ecosystems and biodiversity through data-driven, science-backed solutions and approaches.

Team Europe Initiative (TEI) MAV+ or Manufacturing and Access to Vaccines, Medicines and health technology products in Africa has a total budget exceeding € 1 billion from various sources, of which at least € 105.7 million in grants and blended finance from the EC. More information about the initiative can be found in the next chapter.

Key takeaways and policy implications: Until now, the implementation of the AU-EU Innovation Agenda has not benefitted from an exclusively dedicated AU or EU budget, apart from that of Horizon Europe's "Africa Initiative I and II" and of the EDCPT3. On the way forward, devising additional specific AU-EU Innovation Agenda funding to contribute to the implementation of its actions, can prove being momentous and help catalyse further investments with the same goal. The establishment of the "Dashboard of initiatives" is a significant step towards that direction, as it aligns projects, programmes, partnerships and scholarship schemes that were officially recognised as contributing to the achievement of the Objectives of Agenda[6]. This approach can indeed improve strategic alignment of the multitude of AU-EU R&I collaborative efforts. Moreover, AU-exclusively funded initiatives are not featured yet, and joint-funding is also rare still. To ensure a wide prospective participation to the expression of interest process for initiatives to join the Dashboard of the Agenda, it will be essential for stakeholder organisations to seize opportunities related to this process. In addition to the policy coherence, the Dashboard aims to promote collaborations and synergies among the initiatives listed and aligned under the same action and priority area. Moreover, being included in the Dashboard of the Agenda is expected to enhance the visibility of initiatives, with subsequent potential gaining of additional value added vis-à-vis R&I funding institutions. The Agenda´s working group is expected to intensify communication efforts in this sense.

[6] Initiatives included in the Dashboard are indeed "officially recognised" as contributing to the implementation of the AU-EU Innovation Agenda, after having been thoroughly examined (for their coherence with a checklist of 10 criteria elaborated in the Roadmap of the AU-EU Innovation Agenda, Section V. Toolkit 5, https://research-and-innovation.ec.europa.eu/system/files/2023-07/ec_rtd_au-eu-innovation-agenda-roadmap.pdf) by a dedicated Task Force of the "AU-EU Innovation Agenda Working Group", with the ensuing endorsement by the Bureau of the AU-EU High-Level Policy Dialogue (HLPD) on Science, Technology and Innovation.

13. Number of projects in Africa approved under the Global Gateway Africa-Europe Investment Package as part of the AU-EU Innovation Agenda

About the indicator: The Global Gateway Africa – Europe Investment Package aims to support Africa for a strong, inclusive, green and digital recovery and transformation by accelerating the green/digital transitions and sustainable growth/decent job creation, strengthening health systems, and improving education and training. It is part of the wider Global Gateway policy of the EU which aims to mobilise up to €300b, running from 2021-2027. The Investment Package dedicated to sub-Saharan Africa has a budget of €150b in investments and currently lists 101 projects (European Commission – Global Gateway Projects, n.d.).

Methodology: Initiatives on the Dashboard were cross-checked against the project library of the Global Gateway for sub-Saharan Africa (European Commission, n.d.). In December 2024, 184 projects were listed as part of the library on the website across different target regions, including Africa (it was not possible to isolate African projects only).

Table 3 Global Gateway projects in Africa that are also included in the Dashboard

#	Initiative Title	Funding amount	Priority area
1	Regional dimension and management of the Team Europe Initiative (TEI) on Manufacturing and Access to Vaccines, Medicines and Health Technologies (MAV+) in Africa (Part III)	€10m	Public health
2	Special Measure to enhance Manufacturing capacities and Access to Vaccines, Medicines and Health Technologies (MAV+) in Africa for 2023	€67m	Public health
3	Local Manufacturing and Access to Vaccines, Medicines and Health Technologies (MAV+) in Africa (Part I)	€13m	Public health

Analysis: There are currently three initiatives on the Dashboard which are also part of the Global Gateway Africa-Europe Investment Package, all of which fall under the Team Europe Initiative "Manufacturing and Access to Vaccines, Medicines and Health Technologies in Africa (MAV+)". This is a large Team Europe initiative with an initial budget of €1 billion, divided into three parts and listed in this way in the Dashboard: Part I relates to the initial launch, implemented by WHO and the Medicines Patent Pool (MPP), a second part is the "Special Measure" to enhance MAV+ implemented by a handful of EU Delegations in Africa, and Part III includes the regional dimension and management, implemented by development finance institutions. The split of the larger MAV+ into these three sub-initiatives for the Dashboard is unclear.

Key takeaways and policy implications:

Besides Horizon Europe and the next EU R&I Framework Programme (FP10), Global Gateway represents the biggest sources of funding potentially available to support the implementation of the Agenda.

Considering that the Global Gateway is expected to run at least until 2027, and the Agenda is in implementation until 2033, more synergies among initiatives listed in the Dashboard and the Africa-Europe Investment Package should be leveraged in the remaining period, in order to yield a stronger impact on the implementation of the Agenda. The development of the Global Gateway programme after 2027 would also be relevant for the implementation of the Agenda.

14. Number of projects granted in the "Africa Initiative I" and entities involved

About the indicator: The "Africa Initiative I" was launched as part of the Horizon Europe Work Programme 2021-2022, drawing on the outcomes of the AU-EU R&I Ministerial Meeting, with a budget of €350m (*European Union External Action*, 2021).

The "Africa Initiative II" followed up as part of Horizon Europe Work Programme 2023-2024 with a total budget of approximately €300m. Both Africa Initiatives are built around the joint priorities of Public Health, Green Transition, Innovation and Technology, and Capacities for Science. These initiatives, integral parts of Horizon Europe, build on the experience of the previous Framework Programme "Horizon 2020" (2014-2020). This survey also includes information on Horizon 2020 projects involving African entities that were still running at the time of adoption of the Agenda (July 2023) so to provide "baseline data" to this assessment.

Methodology: The data for this indicator was drawn from the "Africa Initiative I" (Horizon Europe Work Programme 2021-2022) and was sourced from the DG RTD data. Although the Africa Initiative I was launched prior to the adoption of the Agenda, as the projects granted under this scheme commenced in 2022 and 2023, their activities have started to contribute to the implementation of the Agenda's short-term actions. Moreover, the "Africa Initiative I" builds on previous Horizon 2020 calls with a focus on Africa-Europe collaboration and the four joint priorities agreed upon at the AU-EU R&I Ministerial Meeting of 2020. With this understanding, the baseline/Year 0 data includes all Horizon 2020 project calls that have a focus on Africa.

Year 1 covers Africa Initiative I topics from Horizon Europe's Work Programme 2021-2022. This is because all of these projects were granted by July 2023 and although they may not all be running/implemented by July 2023, they were all running/being implemented by July 2024. Therefore, these are seen to be contributing towards the short-term actions of the Agenda in Year 1.

Although not classified as the Africa Initiative I, funding programmes such as the MSCA, European Research Council grants (ERC), and EDCTP are included in this analysis as they are all funded from the larger Horizon 2020/Horizon Europe funding body in the joint priorities of AU-EU R&I cooperation.

This analysis did not include data on the Africa Initiative II of Horizon Europe Work Programme 2023-2024 as the granting of some of its projects was still being finalised at the time of drafting of the present report. Accordingly, these data will be included in the MEL assessment of the impact of Year 2 of implementation of the Agenda.

Table 4 Horizon 2020 projects with a focus on Africa by priority area

	Number of projects	Net EU contribution (€) M	Number of African institutions involved (% of total number of partners)	Number of European institutions involved (% of total number of partners)	Number of African countries involved	Number of European countries involved	EU contribution to African countries (€) M
Public Health							
H2020	63	28,84	85 (17%)	423 (82%)	21	28	
ERC grants	3	0,9	3 (36%)	5 (64%)	3	3	
Green Transition							
H2020 (CCSE)	168	34,92	189 (19%)	826 (81%)	31	31	
H2020 (FNSSA)	178	44,19	202 (25%)	596 (75%)	29	30	
ERC grants	1	0,6	1 (50%)	1 (50%)	1	1	
Innovation and Technology							
H2020	45	7,72	66 (15%)	370 (85%)	16	28	
ERC	2	1,5	2 (33%)	4 (67%)	2	3	
Capacities for Science							
H2020	22	3,31	70 (18%)	313 (92%)	9	29	
MSCA	122	2,52	122 (36%)	217 (64%)	23	28	
ERC grants	8	1,9	6 (43%)	8 (57%)	4	4	

Table 5 Africa Initiative I projects and other initiatives funded under Horizon Europe by Agenda priority area

	Number of projects	Net EU contribution (€) M	Number of African institutions involved (% of total number of partners)	Number of European institutions involved (% of total number of partners)	Number of African countries involved	Number of European countries involved	EU contribution to African countries (€) M
Public Health							
Africa Initiative I	8	135,5	29 15%	159 85%	15	19	18,2
EDCTP Work Programme 2022	26	100	106 53%	94 47%	26	14	58
ERC grants	1	2	1 50%	1 50%	1	1	0,57
Green Transition							
Africa Initiative I (CCSE)	13	77	56 23%	183 77%	22	20	10,5
Africa Initiative I (FNSSA)	23	140	139 31%	303 69%	32	33	30,5
Innovation and Technology							
Africa Initiative I	2	8,7	10 5%	175 95%	24	12	2,5
ERC grants	1	13,9	1 25%	3 75%	1	2	0,5
Capacities for Science							
Africa Initiative I	27	82,18	32 9%	316 91%	12	35	4,4
MSCA	57	82,16	96 15%	563 85%	23	37	2,6
ERC grants	3	6	3 43%	4 57%	3	4	0,2

Analysis: For an overall analysis on the Africa Initiative I, Table 5 shows a summary of all projects across the priority areas. Furthermore, larger accompanying initiatives such as EDCPT3, MSCA, and ERC are presented. These have been included as they work in cohesion with the "Africa Initiative I" calls, and because they are all funded under Horizon Europe.

With the Africa Initiative I, the EU provides net contributions across the four priority areas at €443 million. The sum provided by the EU exceeds the announced budget of €350m[7]. Additionally, the other programmes ERC, EDCTP3 and MSCA support activities within the frame of the Agenda with a net contribution of €205 million.

Under the Africa Initiative I, the theme of Food and Nutrition Security and Sustainable Agriculture (FNSSA), part of the Green Transition priority area, received the most funding at €140 million. Fewest budget was allocated for the priory area of Innovation and Technology, although this may be due to the relatively cross-disciplinary nature of this priority area and that activities may overlap with other priority areas.

For all Africa Initiative I calls, there is wide participation of African countries, with 45 African countries represented. The African countries not involved in the Africa Initiative I are Central African Republic, Chad, Comoros, Djibouti, Equatorial Guinea, Eritrea, Seychelles, Somalia, and South Sudan.

When comparing Horizon 2020 and Africa Initiative I, it becomes clear that Horizon 2020 had a smaller focus on Africa in terms of dedicated budget to the joint AU-EU R&I priorities.

The composition of entities across both Horizon programmes has stayed more or less the same with a larger representation of European entities for Public Health and Green Transition priority areas, but in Innovation and Technology and Capacities for Science, there was a more notable drop in the representation of African entities.

Finally, there are also other Horizon Europe calls with African participation which are not captured under the Africa Initiative I. These make up 76 grants with a net EU contribution €33 million.

Key takeaways and policy implications: On the way forward, further synergies are expected to be leveraged between the Africa Initiative projects (e.g. Africa Initiative II and ensuing initiatives) and other initiatives devised under Horizon Europe, such as the Mediterranean Initiative I of Work Programme 2023-2024 and potential following initiatives.

[7] European Commission 2021. Horizon Europe boosts EU-Africa cooperation in Research and Innovation.

Furthermore, in the forthcoming second MEL report, the Partnership for Research & Innovation in the Mediterranean Area (PRIMA) could also be analysed under this indicator. While the Partnership was initiated under Horizon 2020, PRIMA publishes yearly calls up until 2027.

The top participating African countries in Africa Initiative I projects, are in nine of ten cases Anglophone countries, with Senegal as the only Francophone country (Rwanda's official language of instruction/education switched from French to English in 2009). Higher participation rates from Anglophone countries may be due to the fact that English is the main language in research and STI, and that these countries/institutions are better able to engage internationally due to this advantage. Furthermore, project proposals submitted to the EU´s Funding and Tender Portal are expected to be in English language. The widened participation of Francophone countries requires a systemic approach not just between Africa and Europe. In the context of AU-EU cooperation, Horizon Europe and future Framework Programmes could review their calls specifically dedicated to French research.

Africa Initiative I calls actively encourage or require African research institutions to participate in consortia. For equity in research partnership, all calls should not only encourage but require African representation in the consortia.

Importantly, not all Horizon Europe calls with a focus on Africa (which were still open to African research entities) were part of the "Africa Initiative I". More clarity and transparency would therefore be advisable for the future, especially on the requirements for calls to be specifically part of Africa Initiatives.

Continued synergies should ensure alignment of Horizon Europe and the future Work Programme and the Agenda.

3.4.2. MEL

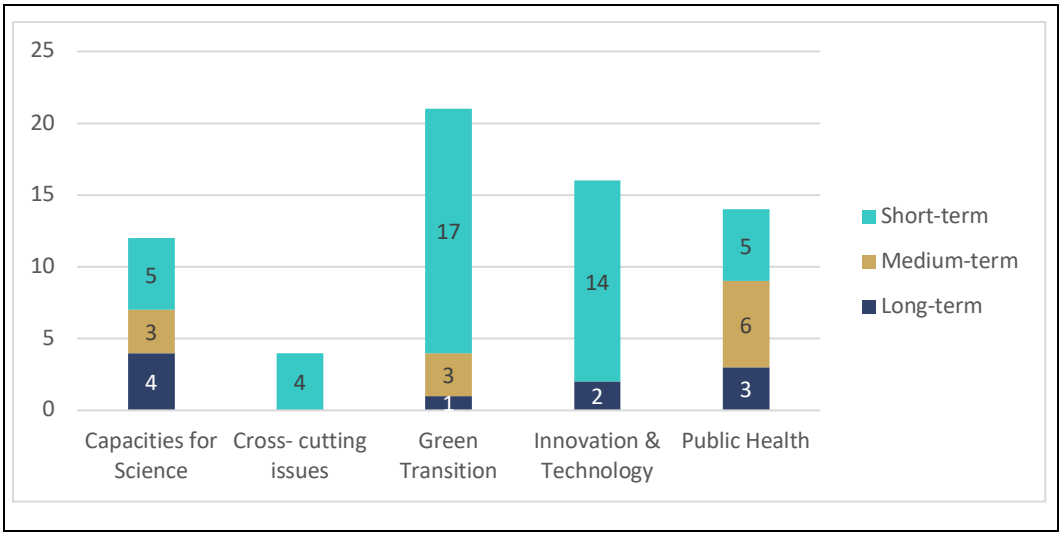
15. Number of initiatives seen as enabling the implementation of the actions foreseen by the Agenda

About the indicator: This indicator describes the initiatives included in the Dashboard. These are the initiatives recognised as officially contributing to the implementation of the Agenda. This indicator will assist to monitor over time the progress of the Agenda, as well as identifies on gaps and reflects on policy effectiveness.

Methodology: As the Dashboard was inaugurated at the EU Research and Innovation Days on 20 March 2024, the first datapoint dates from June 2024.

Limitations: The total number of initiatives present on the Dashboard in July 2024 was 42. However, bigger initiatives have several components that cover several priority areas and actions (e.g. short-term, medium-term, and long-term) of the Agenda.

Figure 30 Number of components of the 35 initiatives covering each time horizon in the AU-EU R&I priority areas



GSF, 2024

Analysis: At present, the vast majority of initiatives represented on the Dashboard address the Agenda's short-term actions (until 2026), although a few of them also address medium- (until 2030) and long-term actions (until 2033).

Most initiatives are implemented by consortia consisting of multiple organisations, ensuring shared AU-EU ownership.

Future efforts would need to ensure an even and wider representation of initiatives across all five priority areas and timeframes of implementation (short-, medium- and long-term actions).

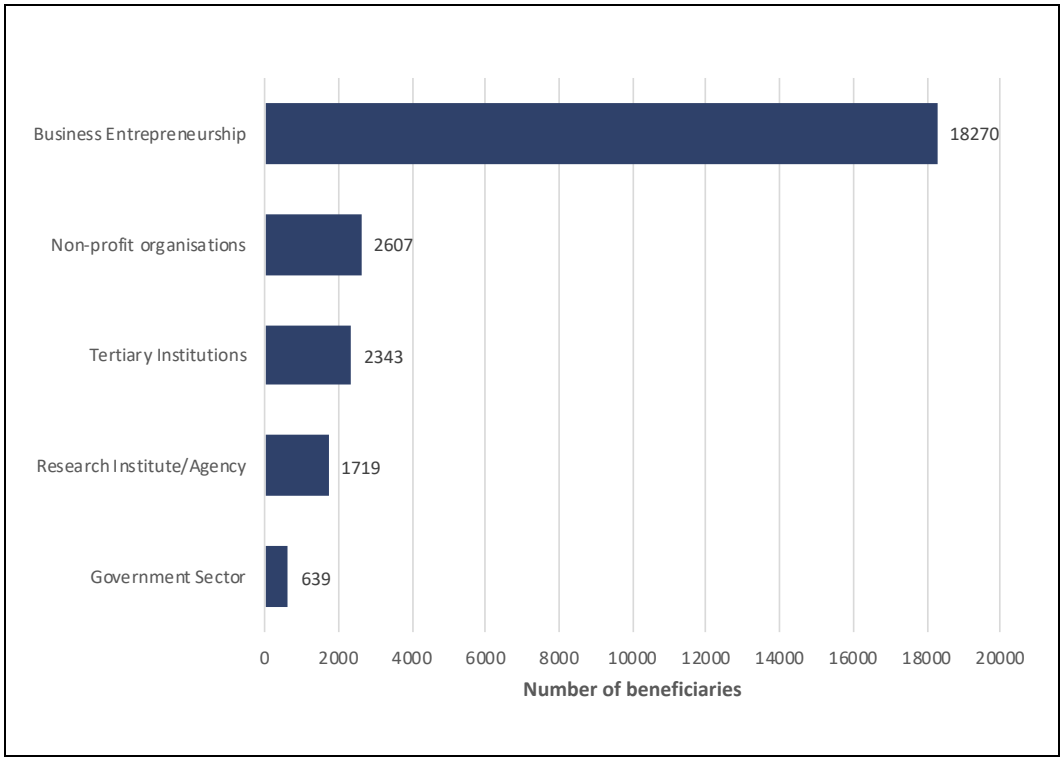
With the Dashboard being a "living repository" in continuous evolution, the number of initiatives it showcases is expected to progressively grow, and, as time passes, increasingly include projects and programmes contributing to the realisation of the medium- and long-term actions of the Agenda.

Number of stakeholders benefitting from surveyed initiatives

About the indicator: The sharing and transfer of knowledge and innovation outputs was captured through the number of stakeholders/beneficiaries engaged by the initiatives. This indicator thus measures the reach of initiatives supporting the objectives of the Agenda.

Methodology: This indicator is measured on the basis of the responses (n=23) provided by the initiative coordinators in the survey. The survey was conducted in October 2024, so the data below represents **Year 1** (2024).

Figure 31 Survey question: How many stakeholders/beneficiaries are benefitting from your initiative?



GSF, 2024. Data from survey of initiative coordinators.

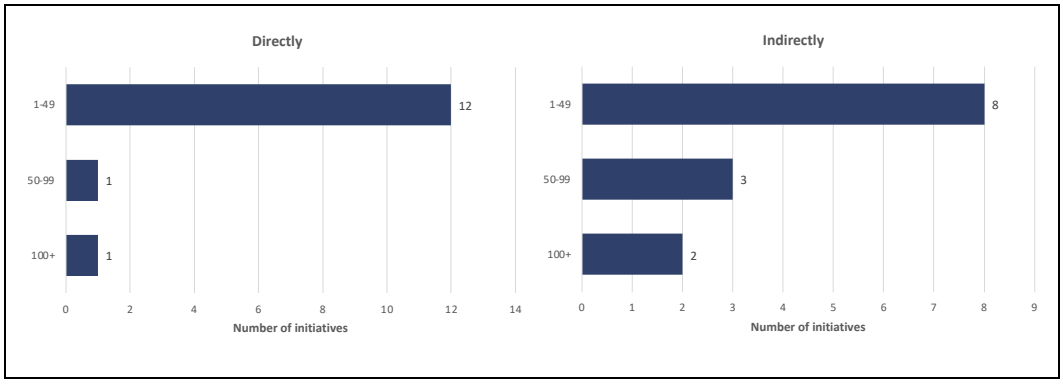
Analysis: The data shown in Figure 31 represents the sum of the responses of the initiatives that responded to the survey (n=23). Initiatives responding to this survey question have benefitted a total of 18,270 businesses and entrepreneurs. This outranks other stakeholder types by far, reflecting the fact that many of the initiatives included in the Dashboard closely involve start-ups, incubators, and innovation hubs.

16. Number of new businesses generated from initiatives included in the Dashboard of the AU-EU innovation Agenda

About the indicator: The indicator depicts the extent to which initiatives featured in the Dashboard were able to impact private sector development, primarily through job creation and businesses generation.

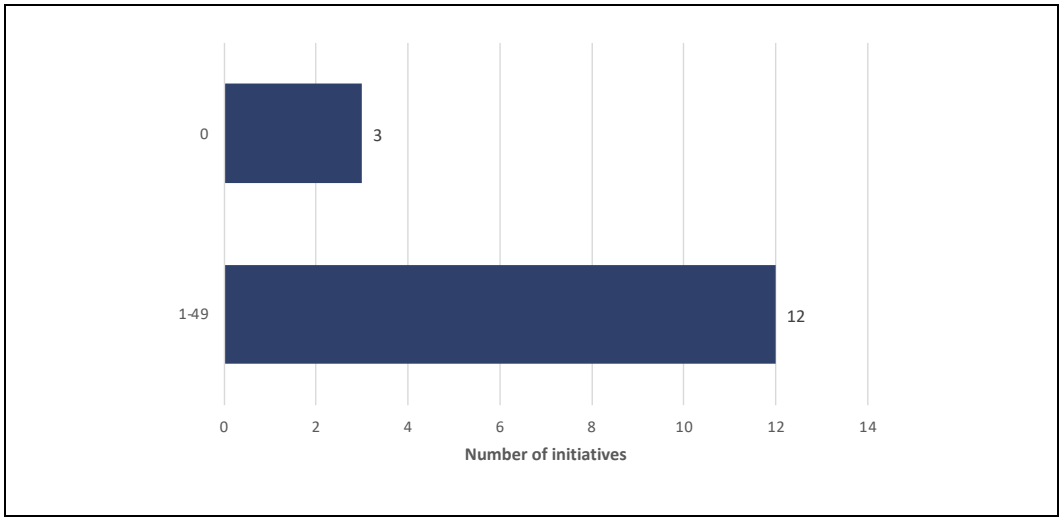
Methodology: This indicator is measured on the basis of the responses (n=15, 14, 13) provided by the initiative coordinators in the survey. The survey was conducted in October 2024, so the data below represents **Year 1** (2024).

Figure 32 Survey question: How many jobs would you estimate were created directly/indirectly by your initiative? (n=14/n=13)



GSF, 2024. Data from survey of initiative coordinators. Total number of jobs created not available.

Figure 33 Survey question: How many businesses and enterprises would you estimate have been generated through the initiative? (n=15)



GSF, 2024. Data from survey of initiative coordinators.

Analysis: As Figure 32 shows, according to their own estimates, most initiatives (n=23) have contributed to job creation either indirectly or directly. Most jobs were created directly, with 14 initiatives having created either 1-49, 50-99, or 100+ jobs.

As Figure 33 shows, most coordinators stated that their initiative contributed to the creation of between 1 and 49 new businesses and enterprises.

4. Contextual information

This chapter provides information on the context in which the Agenda is being implemented. The data focus on the performance of African and European R&I systems, moving from inputs to outputs. Where available, the data was depicted from around five years before the adoption of the Agenda (2019), to portray medium-term trends leading up to the adoption of the Agenda.

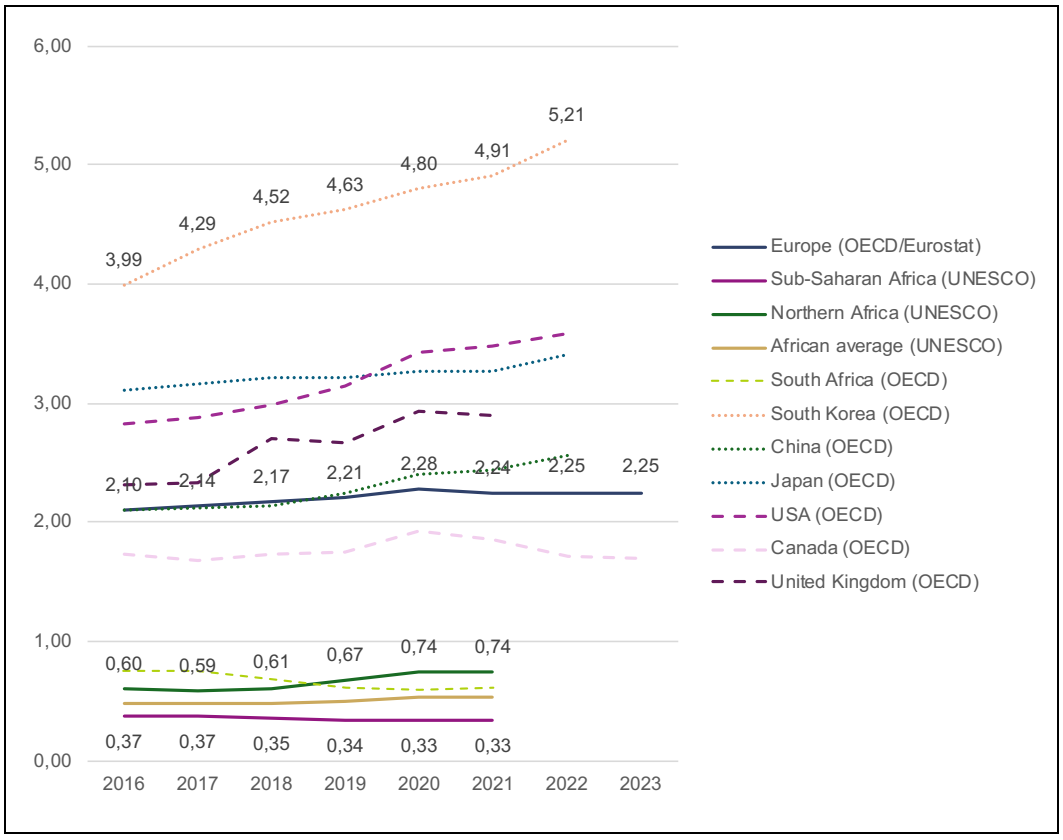
17. Gross Domestic Expenditure on R&D (GERD)

About the indicator: Gross Domestic Expenditure on R&D (GERD) is an indicator measuring spending on research activities to ensure competitiveness of markets. It is expressed as a percentage of gross domestic product (GDP). It is a key indicator for assessing a country's or region's commitment to scientific and technological progress. It provides insights into R&D priorities, funding sustainability, innovation capacity, and economic competitiveness. Monitoring GERD helps policymakers, researchers, and investors understand whether STI partnerships are leading to real investment in research and technology development.

Methodology: Data was sourced from multiple sources. For Africa, UNESCO data was used, although this is only available until 2021, hence the starting point has been set to 2016 (UNESCO Institute for Statistics, 2024). UNESCO followed regional classifications from the SDG Regions to organise the data. The African mean was calculated separately, not made available as part of the original data. Supplementary data was provided by AUDA-NEPAD using data from the African Innovation Outlook, which was jointly produced by the AUC, and AUDA-NEPAD as part of the African Science, Technology, and Innovation Indicators (ASTII) Programme.

For Europe, more recent Eurostat data was used (which in turn also relies on OECD data). For reference, other international leaders in GERD, namely South Korea, China, and the US, were included. The OECD provides data on a few non-OECD countries, including South Africa, hence this was included (European Commission, 2024).

Figure 34 R&D expenditure as percentage of GDP



GSF using data from the UNESCO Institute for Statistics (UIS), OECD, and Eurostat, 2024

Figure 35 AU Member State coverage in the Third African Innovation Outlook (AIO), 2019

No	Country	Financial period	Reference year	Business		Government		Higher Education		Private Non-Profit	
				R&D Expenditure	R&D Personnel	R&D Expenditure	R&D Personnel	R&D Expenditure	R&D Personnel	R&D Expenditure	R&D Personnel
1	Angola	2014	2014	–	–	✓	✓	✓	✓	–	–
2	Botswana	2013/2014	2013	✓	✓	✓	✓	✓	✓	✓	✓
3	Burkina Faso	2013/2014	2013	–	–	✓	✓	✓	✓	✓	✓
4	Burundi	2011/2012	2011	–	✓	–	✓	–	✓	–	✓
5	Cabo Verde	2014	2014	–	–	–	✓	–	✓	–	–
6	DRC	2015	2015	–	–	✓	✓	–	–	–	–
7	Egypt	2015	2015	✓	✓	✓	✓	✓	✓	✓	✓
8	Eswatini	2015/2016	2015	✓	✓	✓	✓	✓	✓	✓	✓
9	Ethiopia	2013/2014	2013	✓	✓	✓	✓	✓	✓	✓	✓
10	Gabon	2014	2014	–	✓	–	✓	–	✓	–	✓
11	Ghana	2015	2015	–	–	✓	✓	✓	✓	–	–
12	Lesotho	2015	2015	–	–	✓	✓	✓	✓	–	–
13	Mali	2015	2015	–	–	✓	✓	✓	✓	✓	✓
14	Mozambique	2014/2015	2014	✓	✓	✓	✓	✓	✓	✓	✓
15	Namibia	2013/2014	2013	✓	✓	✓	✓	✓	✓	✓	✓
16	Niger	2013	2013	–	–	✓	✓	✓	✓	✓	✓
17	Rwanda	2013/2014	2013	–	–	✓	✓	✓	✓	✓	✓
18	Senegal	2015	2015	–	–	✓	✓	✓	✓	✓	✓
19	Seychelles	2015	2015	–	✓	✓	✓	✓	✓	–	✓
20	South Africa	2014/2015	2014	✓	✓	✓	✓	✓	✓	✓	✓
21	Tanzania	2013/2014	2013	–	–	✓	✓	✓	✓	–	–
22	Togo	2015	2015	–	–	✓	✓	✓	✓	–	–
23	Uganda	2014	2014	✓	✓	✓	✓	✓	✓	✓	✓
TOTAL				8	11	20	23	19	22	13	16

GSF using data from AUDA-NEPAD (2019), African Innovation Outlook (AIO) 2019

Analysis: The Gross Domestic Expenditure on R&D (GERD) is often a cornerstone of R&I policy strategies. For the EU, it was included in the "Political Guidelines of the next European Commission 2024-2029" where increasing research spending was stated as a strategic priority (European Commission, 2024, Political Guidelines). This falls on the backdrop of past strategies to have national R&D expenditure targets of 3% of GDP from the Europe 2020 strategy (European Commission, 2010). On the AU side, the minimum GERD goal was set to 1% since the "Lagos Plan of Action for the Economic Development of Africa" in 1980 under the Organisation of African Unity (OAU). The same target was also renewed in the Science, Tech, and Innovation Strategy for Africa (STISA) 2024 document, a predecessor to the second iteration (STISA 2034) supporting the second ten-year implementation plan (STYIP) of Agenda 2063.

On the African side, GERD overall has stagnated: in Northern Africa, there was a significant jump between 2019 and 2020, whereas a decline from 0.37% and 0.33% was observed in sub-Saharan Africa between 2016 to 2021 based off UIS aggregated data. Although often considered a leading African country in STI, South Africa's GERD has dropped in recent years. Additional data from the African Innovation Outlook (AIO) 2019 and 2024 depicts the following data at the national level: South Africa (0.70% in AIO-2019), Ethiopia (0.62% in AIO-2019), Botswana (0.54% in AIO-2019), Rwanda (0.76% in AIO-2024) and Egypt (1.2% in AIO-2024). There is a large difference between these countries, from Egypt which has met the minimum 1% GERD spending, and Botswana, which (according to the 2019 data, still needs to double their investments.

On the European side, the most recent data shows a slight decline and stagnation from the peak of 2.28% in 2020 to 2.25% in 2023. As a comparative reference, it should be noted that GERD has been increasing in South Korea (3.79% in 2016 to 4.85% in 2023), the US (2.84% in 2016 to 3.59% in 2023), and China (2.1% in 2016 to 2.56%), Japan (3.11% in 2016 to 3.41% in 2022), and the UK (2.32% in 2016 to 2.9% in 2022). Canada has stagnated slightly (1.73% in 2016 to 1.71% in 2022). China's GERD has been exceeding the EU's since 2019.

Key takeaways and policy implications:

Additional data, such as comparable GERD at country level from Africa and Europe, could better highlight where the strengths and weaknesses are. Other indicators such as R&D expenditure by sector of performance (business enterprise, higher education and research institutions, government sector, etc.) would also add more detail on how the trends develop. Indeed, this challenge is depicted on the African side, as the GERD computation requires the coverage of all four sectors of performance of R&D which adds complexity: Business, Government, Higher Education and Private-non-Profit (PNP). The difficulty in collecting this complete data is depicted in Figure 35 (which reveals some information on the sectoral coverage found in the 3rd AIO from 2019). Such additional

data may also present insights on R&D investments according to specific sectors, such as artificial intelligence and green technology.

A general stagnation can be observed for both African and European GERD, while other leading economies (e.g. USA, China, and South Korea) are steadily increasing R&D investments. While ample economic and political factors may inform this, and although much variation is expected at the country level on each continent, both continents are expected to sustain further investment into R&D to ensure effective delivery of innovations.

On the whole, both continents should continue to invest further into R&D to meet the joint targets defined in the Agenda.

18. Estimate of University–industry R&D collaborations launched and running in AU and EU in 2019-2023

About the indicator: This indicator is analysed via the World Intellectual Property Organization (WIPO) Global Innovation Index (GII) as a sub-indicator on innovation linkages. As part of the GII, WIPO collects this data for countries annually where available. This indicator was chosen for this MEL exercise, as the Agenda focuses heavily on the importance of partnerships, including those between universities and industry. The theory underlying this question is the "Triple Helix Model" which assumes that different ecosystems interact with each other like various helices intimately twisted together as intertwining strands of a DNA to produce knowledge (Leydesdorff, 2012). The first two strands of the helix are academia (universities and research institutions) and industry (business and markets), the third being the government.

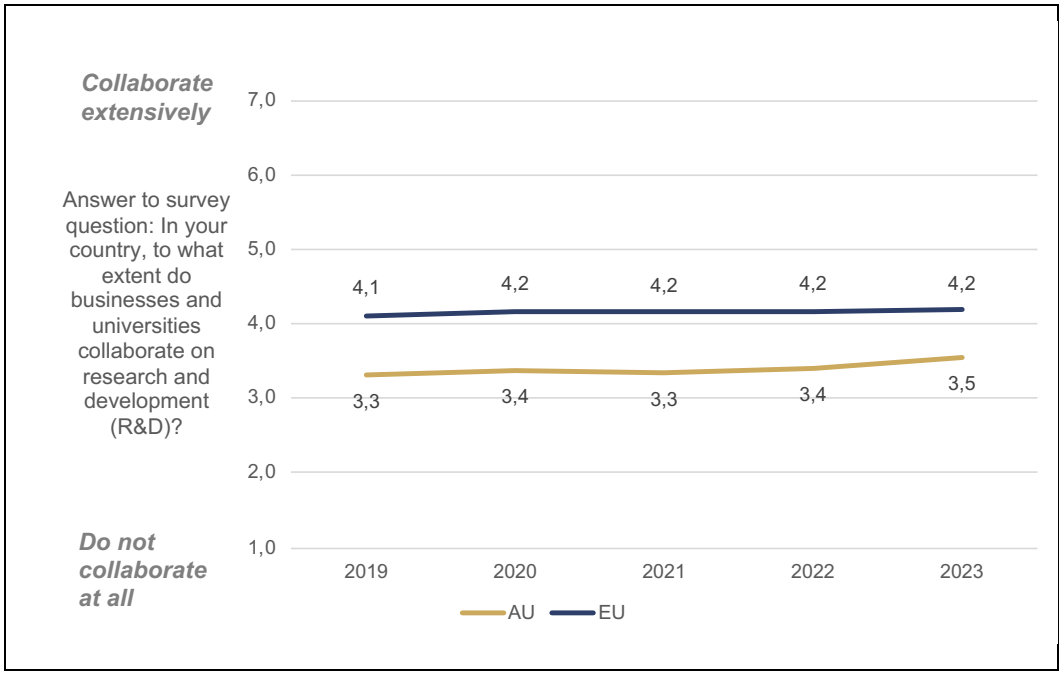
Methodology*:* Data were sourced from the WIPO GII, and the means were calculated per continent (AU and EU). Countries with missing values were excluded from the analysis.

WIPO collects these data based on the average answer to the survey question: In your country, to what extent do businesses and universities collaborate on research and development (R&D)? [1 = do not collaborate at all; 7 = collaborate extensively] from the World Economic Forum (WEF) Executive Opinion Survey.

The adoption of the Agenda was in July 2023, and to portray the trends running up to the adoption, the starting point for this data has been set as five years before (2019), inclusive of the year of adoption.

The latest information published by WIPO on this indicator dates to the publication of the GII report in September 2023. Information pertaining to 2024 will be included in the MEL report for Year 2 of implementation of the Agenda, so to provide for a comparison accordingly.

Figure 36 Mean university-industry R&D collaboration



GSF and WIPO GII 2019-2024, 2024. AU countries (n=22): Algeria, Benin, Botswana, Cameroon, Egypt, Ghana, Guinea, Kenya, Mali, Mauritius, Morocco, Mozambique, Namibia, Nigeria, Rwanda, Senegal, South Africa, Tanzania, Tunisia, Uganda, Zambia, Zimbabwe. EU countries (n=26): Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Spain, Sweden.

Analysis: University-industry R&D collaboration at the EU level has remained rather constant at a mean coefficient of approximately 4.2 for the last five years in the survey responses, whereas some increase could be observed at the AU level, rising from 3.3 to 3.5.

Key takeaways and policy implications:

- As the Agenda aims to drive knowledge exchange among universities, technology transfer organisations, and the private sector, this indicator will be monitored over the next years. While a significant increase in collaborations for this indicator may be unlikely given the trajectory so far, it is nonetheless desirable that the mean values for the two continents at least remain constant at current values or increases over time.

19. VC recipients, deals/bn PPP$ GDP

About the indicator: This indicator tracks venture capital (VC) recipients and deals per billion PPP$ GDP. It provides insights into innovation growth, investment trends, technology commercialisation, and economic competitiveness.

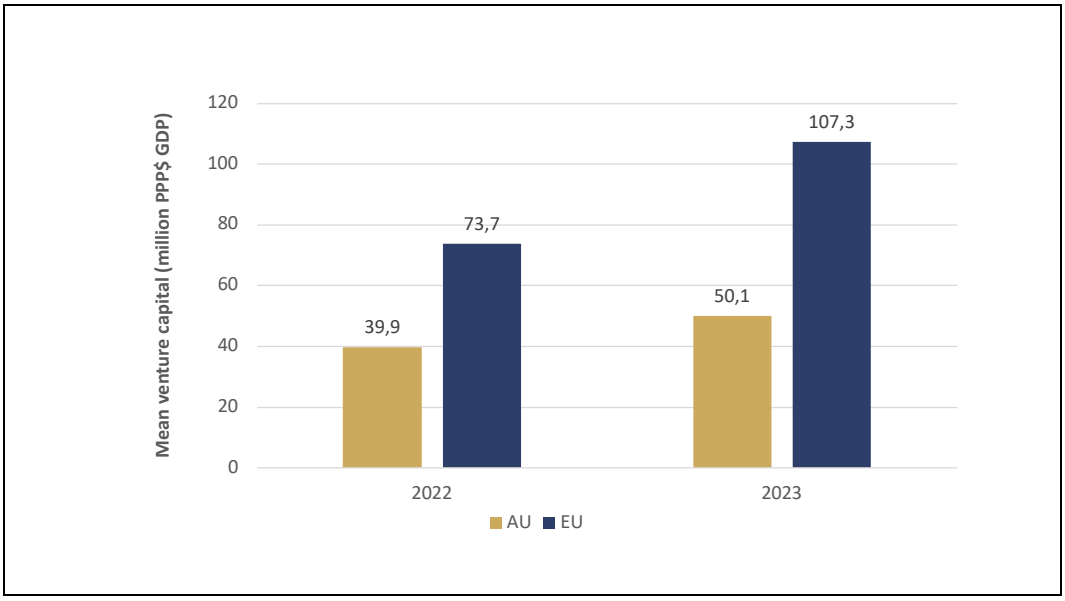
Methodology*:* The data used for this analysis was sourced from the WIPO GII and focuses on VC recipients up to 2023. However, due to limitations in the data format prior to 2022, it was not possible to estimate VC values for most African countries. Countries with missing values were excluded from the analysis. The means were calculated at the continental level for both AU and EU based on reported figures for 2022 and 2023, as depicted in Figure 37. For a more detailed view, Figure 53 in the annex illustrates the number of VC recipients at the country level for African countries included in the mean calculation. Originally, the data was presented per billion PPP$ GDP but was adjusted to million PPP$ GDP for improved visibility and clarity. The use of the PPP$ GDP metric allows for a more accurate international comparison. However, it should be noted that PPP adjustments may reduce some variations between AU and EU that would otherwise be apparent in using the nominal GDP.

It is important to note that WIPO sources this data from Refinitiv, a London Stock Exchange Group business, and the International Monetary Fund World Economic Outlook Database. The data also indicates a data lag of one to two years for some countries. In addition, Refinitiv data on private equity deals provides detailed information on each deal, including the location of the firm receiving the VC investment. For 2023 (2022), data extraction was based on a query of VC deals between January 1, 2020 (2019) and December 31, 2022 (2021), aggregated by investment location. As a result, the reported figures reflect the three-year average of deals received during that period, originally expressed per billion purchasing power parity (PPP)$ GDP.

PPP is a measurement of a country's economy adjusted to the cost of living. It is commonly used to compare economies with regards to their GDP.

The latest information published by WIPO on this indicator dates to the publication of the GII report in September, 2023. Information pertaining to 2024 will be included in the MEL report for Year 2 of implementation of the Agenda, so to provide for a comparison accordingly.

Figure 37 Mean VC recipients in 2022 and 2023



GSF and WIPO GII 2022-2023, 2024. AU countries (n=22): Algeria, Botswana, Burkina Faso, Cameroon, Cote d'Ivoire, Egypt, Ethiopia, Ghana, Kenya, Mali, Mauritius, Morocco, Mozambique, Niger, Nigeria, Rwanda, Senegal, South Africa, Tanzania, Tunisia, Uganda, Zambia. EU countries (n=27): Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.

Analysis: Figure 37 represents a substantial increase of the mean VC recipients on both continents between 2022 and 2023. While the AU experiences a rise of over 10 million PPP$ GDP, the mean VC recipients in the EU rises by nearby 34 million PPP$ GDP. Most African countries with available data showed an increase in the VC recipients (see Figure 53 in annex). The magnitude of this increase is mainly driven by Kenya and Rwanda. The total value of those countries for 2023 exceeds the mean VC recipient value of the EU. The increase in VC recipients in Africa over recent years could be explained as result of a mix of changing consumer behaviours, emerging market opportunities, distinctive local dynamics, and broader economic factors. For instance, Rwanda's investment in strengthening its digital infrastructure created a supportive environment for tech-driven start-ups to flourish, attracting VC in this sector. This favourable environment has contributed to the Rwanda increase in VC recipients from 100 to 130 million PPP$ GDP between 2022 and 2023 (Venture Capital – Rwanda).

Key takeaways and policy implications:

- To better interpret and identify trends, and foster data-driven policy in the AU, more precise and comprehensive data from the period prior to 2022 is essential.

- The concentration of VC investments in a few African countries remains remarkable. To promote sustainable, continent-wide growth, and address the uneven distribution of VC investments across the continent, the Agenda should prioritise identifying innovation potential across the entire African continent. Building on the success of high-performing countries, AU-EU cooperation should focus on replicating proven policy frameworks by fostering increased VC investments where these are still few. At the same time, it is important to acknowledge that VC investments will always flow predominantly to the best-performing innovation and entrepreneurship ecosystems across the globe.

20. VC received, value, % GDP

About the indicator: This indicator is presented by the WIPO GII as the total value of VC received, expressed as percentage of GDP, over a three-year average. As part of the GII, WIPO collects data for countries annually where available. Tracking VC received as a percentage of GDP is a crucial metric for assessing the scale, sustainability, and impact of STI-driven entrepreneurship in AU-EU cooperation. This indicator provides insights into innovation financing, technology commercialisation, and the private sector's role in STI collaboration.

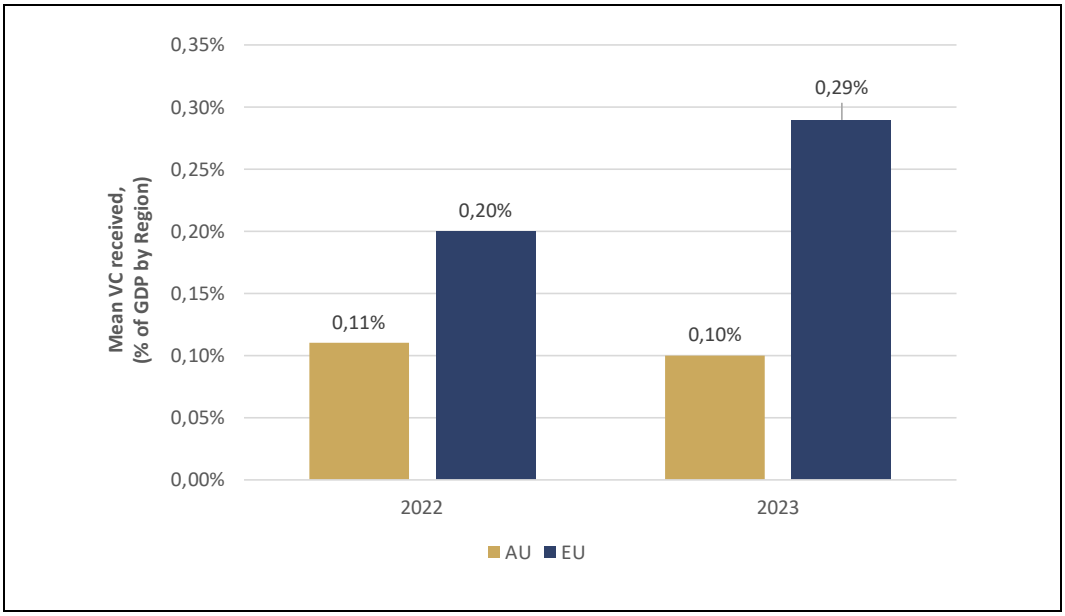
Methodology*:* Data used for this analysis were sourced from the WIPO GII and focuses on VC recipients up to 2023. Countries with missing values were excluded from the analysis. The methodology applied for this indicator follows the same approach as that used for VC recipients, although expressed in percentage that VC recipients represent from the total GDP of each country. Due to limitations in the data format prior to 2022, it was not possible to include VC received for most African countries. The means were calculated at the continental level for both AU and EU based on reported figures for 2022 and 2023.

The latest information published by WIPO on this indicator dates to the publication of the GII report in September 2023. Information pertaining to 2024 will be included in the MEL report for Year 2 of implementation of the Agenda, so to provide for a comparison accordingly.

It is important to note that WIPO sources this data from Refinitiv, a London Stock Exchange Group business and the International Monetary Fund World Economic Outlook Database.

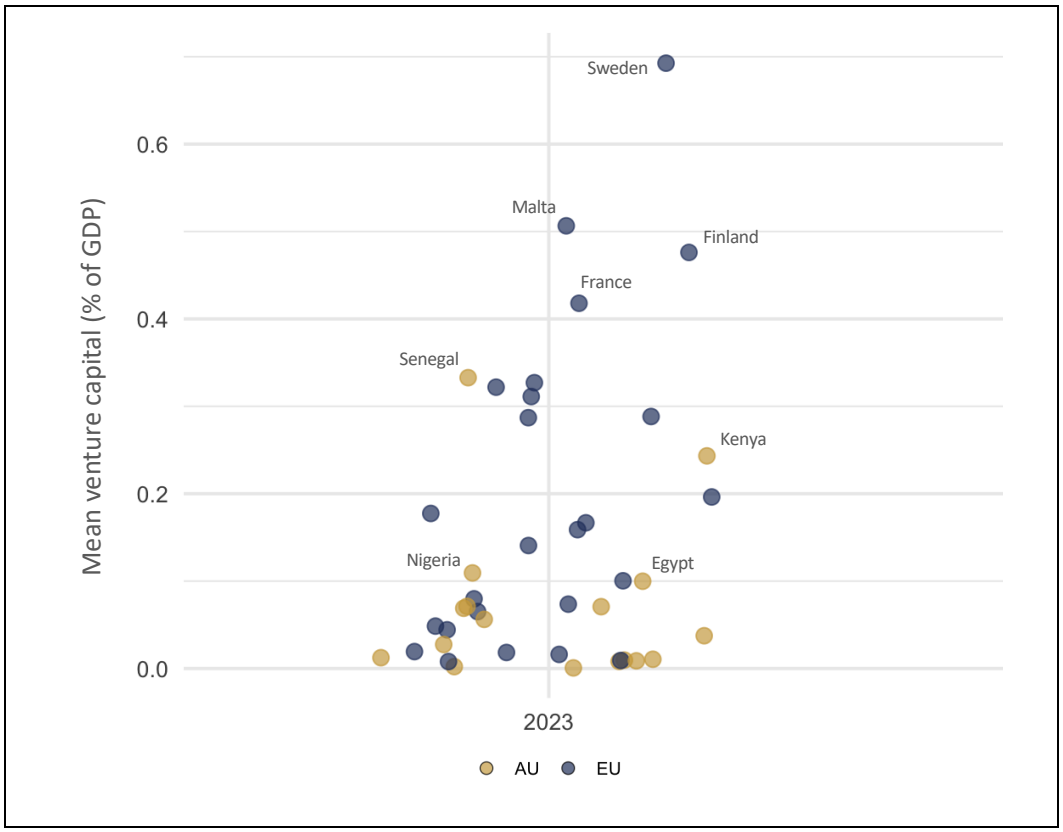
To supplement the data from WIPO GII, Additional data on VCs were sourced from Briter Bridges and Statista to depict the VC investment raised at the national level on the African and European continent in 2024.

Figure 38 Mean VC received as % of GDP by region in 2023



GSF and WIPO GII 2022-2023, 2024. AU countries (n=22): Algeria, Botswana, Burkina Faso, Cameroon, Cote d´Ivoire, Egypt, Ethiopia, Ghana, Kenya, Mali, Mauritius, Morocco, Mozambique, Niger, Nigeria, Rwanda, Senegal, South Africa, Tanzania, Tunisia, Uganda, Zambia. EU countries (n=27): Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.

Figure 39 Mean VC received by country/region in 2023



GSF and WIPO GII 2022-2023, 2024. The countries on the x-axis are arranged randomly and reflect data for the year 2023. For a better visualisation, Estonia (2.3%) and Mauritius (0.9%) were excluded due to representing outliers with extreme large values. Similar was done for part of the lowest values. AU countries (n=17): Cameroon, Cote d'Ivoire, Egypt, Ethiopia, Ghana, Kenya, Mauritius, Morocco, Mozambique, Niger, Nigeria, Rwanda, Senegal, South Africa, Tanzania, Tunisia, Uganda, Zambia. EU countries (n=26) Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden

Analysis:

Figure 38 shows the average VC as a percentage of GDP for both continents. Figure 39 presents a snapshot of 2023 on the VC received as a % of GDP at country level.

On the AU side, a slight decrease in VC investments could be observed between 2022 and 2023, whereas an increase could be observed for the EU within the same timeframe. This can be explained by a general downturn in VC investments in Africa as well as globally between 2022 and 2023 (AVCA, 2024). Nevertheless, the lack of accurate data before 2022 limits the possibility to indicate clear trends or draw conclusions. Figure 39 shows the variety of funding patterns recorded in Africa and Europe with regards to the

amount of VC received (outliers have been labelled in the caption). On the African side, it is notable that after Mauritius, Senegal recorded the highest African score on VC received as percentage of GDP. The “Big Four” tech countries in Africa (i.e. Egypt, Nigeria, Kenya, and South Africa) followed all closely behind. Mauritius stands out as an outlier, having attracted considerably higher venture capital funding since 2021, more than doubling the yearly capital received compared to before 2021 (“Venture Capital-Mauritius”, Statista, 2024). This rise is largely attributed to the country’s efforts to diversify its economy beyond tourism, coupled with government initiatives aimed at fostering a business-friendly environment and encouraging foreign investment (U.S. Department of State, 2023).

Additional data on the top African and European VC recipients in 2024 is in the annex to supplement this data (see page 131).

Key takeaways and policy implications:

- See takeaways and policy implications of “VC recipients” indicator (page 91).
- As the data for this indicator are limited across time, but also when considering the number of African countries included (as compared to the higher representation of European countries), takeaways from
-
- Figure 38 and Figure 39 are limited.
- On both continents, Estonia and Mauritius act as unique anomalies and pioneers in attracting VC investments. This can be particularly relevant when considering intra-continental as well as inter-continental exchange, as good practises can be drawn upon.

21. Patent families/bn PPP$ GDP

About the indicator: Tracking patent families per billion PPP$ GDP is a critical metric for assessing the strength, impact, and sustainability of AU-EU STI cooperation. This indicator provides insights into innovation output, intellectual property rights (IPR) creation, technology transfer, and economic competitiveness.

Methodology*:* Data were sourced from WIPO's GII, and means were calculated for each continent (AU and EU). Countries with missing values were excluded from the analysis.

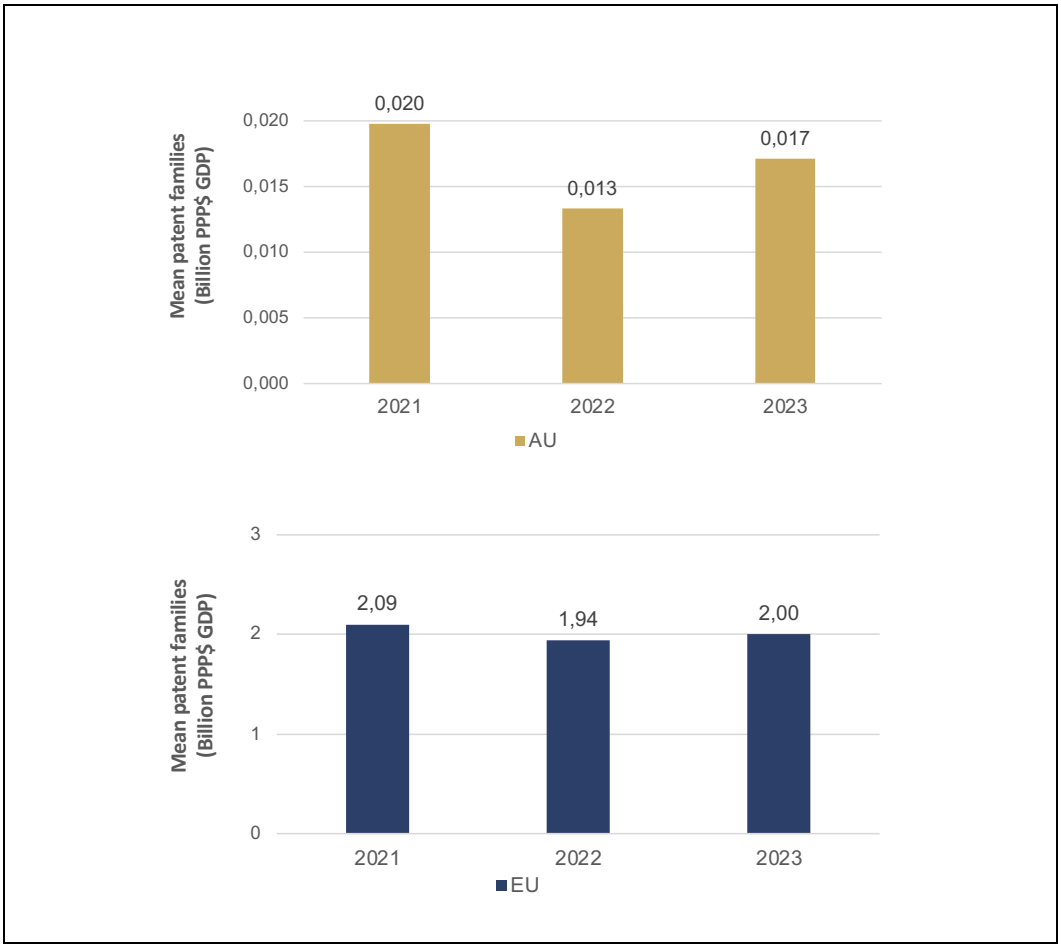
A "granted patent" is a set of exclusive rights granted by law to applicants for inventions that are new, non-obvious and industrially applicable. A patent is valid for a limited period of time (generally 20 years) and within a defined territory. The patent system is designed to encourage innovation by providing innovators with time-limited exclusive legal rights, thus enabling them to reap the rewards of their innovative activity.

A "patent family" is a set of interrelated patent applications filed in one or more countries or jurisdictions with the aim to protect the same invention. Patent families containing applications filed in at least two different offices is a subset of patent families where protection of the same invention is sought in at least two different countries. In this report, the notion of "patent families data" refers to patent applications filed by residents in at least two IP offices; the data are expressed as an intensity indicator by relating the number of patent applications to the country's GDP (expressed in PPP$ billions).

The adoption of the AU-EU Innovation Agenda was in 2023, and to portray the trends running up to the adoption, the starting point for this indicator has been set as 2021. Due to limitations in the data format, data prior to 2021 was not possible to include. The latest information published by WIPO on this indicator dates to the publication of the GII report in September 2023. Information pertaining to 2024 will be included in the MEL report for Year 2 of implementation of the Agenda, so to provide for a comparison accordingly.

For the African data, Mauritius was removed in the calculation of the average. This is elaborated on in the analysis box below.

Figure 40 Patents families/bn PPP$ GDP



GSF and WIPO GII 2021-2023, 2024. AU countries (n=25) Algeria, Angola, Benin, Botswana, Cameroon, Cote d´Ivoire, Egypt, Ethiopia, Ghana, Guinea, Kenya, Madagascar, Mali, Morocco, Mozambique, Namibia, Niger, Nigeria, Senegal, South Africa, Tanzania, Togo, Tunisia, Zambia, Zimbabwe EU countries (n=27): Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.

This indicator on patent families complements the indicator on joint AU-EU patent applications in translation of results into tangible outputs (page 25), however, unlike the indicators presented above, the indicator here measures the performance of R&I systems across AU and EU countries, rather than outputs of collaboration between actors in the AU and the EU.

Figure 40 shows the patent families per bn PPP$ GDP for the AU and EU countries. Special attention should be placed on the different y-axis scales: for the AU graph, this

is between 0 and 0.02 billion PPP$ GDP, whereas for the EU graph, this is between 0 and 2 billion PPP$ GDP.

On the African side, a slight dip can be observed in 2022 with a mean of 0.013 billion PPP$GDP filed under patent families. Moreover, for the African average, Mauritius has been removed as it is an outlier: it has had much higher patent family/billion PPP$ GDP rate than other African countries, with 0.18 in 2021, 0.28 in 2022, and 0.5 in 2023. Other leading countries include Namibia (0.12 in 2021 and 2023, with data missing for 2022) and South Africa (0.23 in 2021, 0.2 in 2022, 0.21 in 2023). All other African countries included in the calculation had rates under 0.1.

On the European side, patent intensity has remained constant at around 2 billion PPP$GDP from 2021 until 2023. Leaders in Europe include Sweden which has hovered at around 6.8 and Finland which has hovered around 6.3 in the same time period.

Additional information from the GII on patents by origin can be found in the annex on page 132.

Key takeaways and policy implications:

Patent applications are a relevant indicator for technology innovation outputs (though not sufficient as a standalone measure) (Reeb and Zhao, 2021).

In the AU, Southern African countries perform comparatively well on this indicator. While Mauritius and South Africa may be expected as general leaders in R&I on the African continent also based off other indicators, it is notable that Namibia is also performing well (Mauritius and South Africa rank 57 and 59 respectively in the 2023 GII). This may be due to domestic policies in R&I (as explored in the case of Mauritius in the indicator on VC received on page 97), but may also be attributed to the role of regional bodies such as the Southern African Development Community (SADC) and their activities. For example, the SADC is currently implementing the programme ‘Strengthening Research and Innovation Management II’ which oversees its member states’ implementation of the Protocol on STI, a regional blueprint document on STI cooperation by SADC Member States. Here, factors such as political will and stability are cited as contributing to the effective implementation of the Protocol, but other factors also include member states’ interest in regional integration and regional and international cooperation of STI measures (SADC, 2023). The role of regional bodies such as the SADC may be the scope of further research also for other African regional bodies.

The process of patenting is often seen as a challenge and barrier to innovation outputs on the African side. In the Agenda, the need to strengthen overall intellectual property protection and to develop a governance framework is explicitly mentioned, and in combination with the indicator on applied for/granted patents listed in this data will capture key trends on both continents.

22. High-technology exports, % total trade

About the indicator: This indicator is presented by the WIPO GII as indicative of knowledge outputs. In this case, high-technology exports as a percentage of total trade were considered. High-technology exports and imports contain technical products with a high intensity of R&D, defined by the Eurostat classification, which is based on Standard International Trade Classification (SITC) Revision 4 and the OECD definition. As part of the GII, WIPO collects this data for countries annually where available. Tracking high-technology exports as a percentage of total trade is a key metric for assessing the impact of AU-EU STI cooperation on economic transformation, industrial competitiveness, and global market positioning. This indicator provides insights into how effectively STI partnerships are driving innovation-based trade and technology-driven industries.

Methodology*:* Data were sourced from the WIPO GII, and the means were calculated per continent (AU and EU) based on the high-technology exports as a percentage of total trade of each country. Countries with missing values were excluded from the analysis.

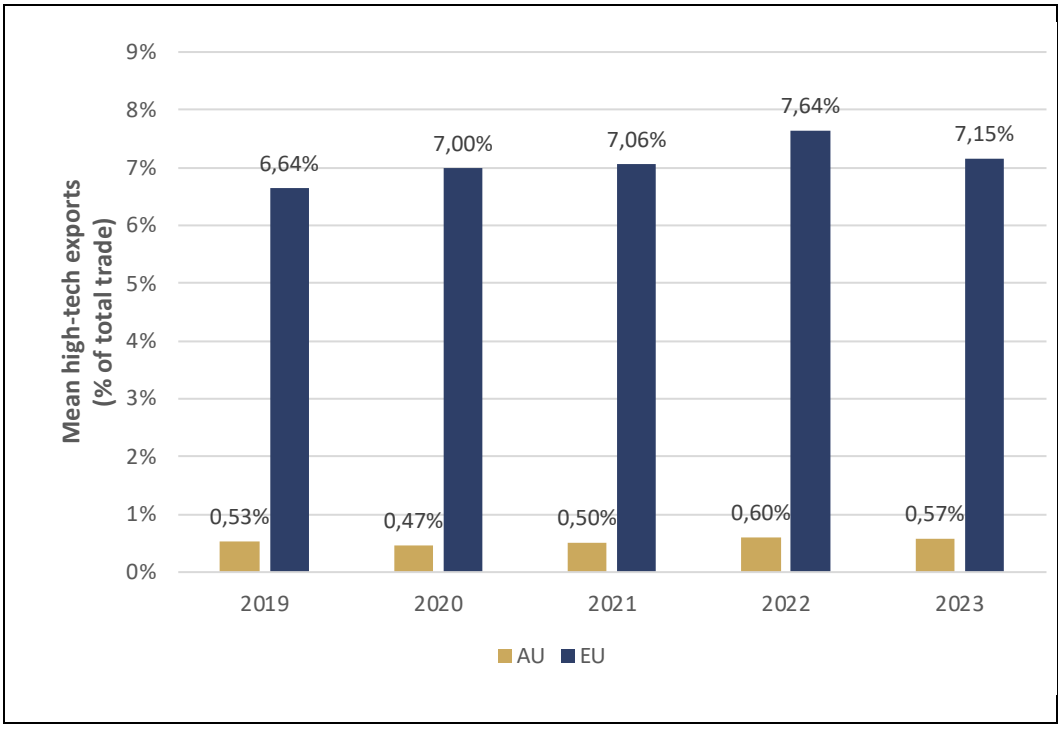
Figure 41 represents the mean high-technology exports for the AU and EU between 2019 and 2023.

Figure 42 represents the top 3 countries with the highest high-technology exports of the AU.

The adoption of the Agenda was in 2023, and to portray the trends running up to the adoption, the starting point for this data has been set as five years before (2019), inclusive of the year of adoption.

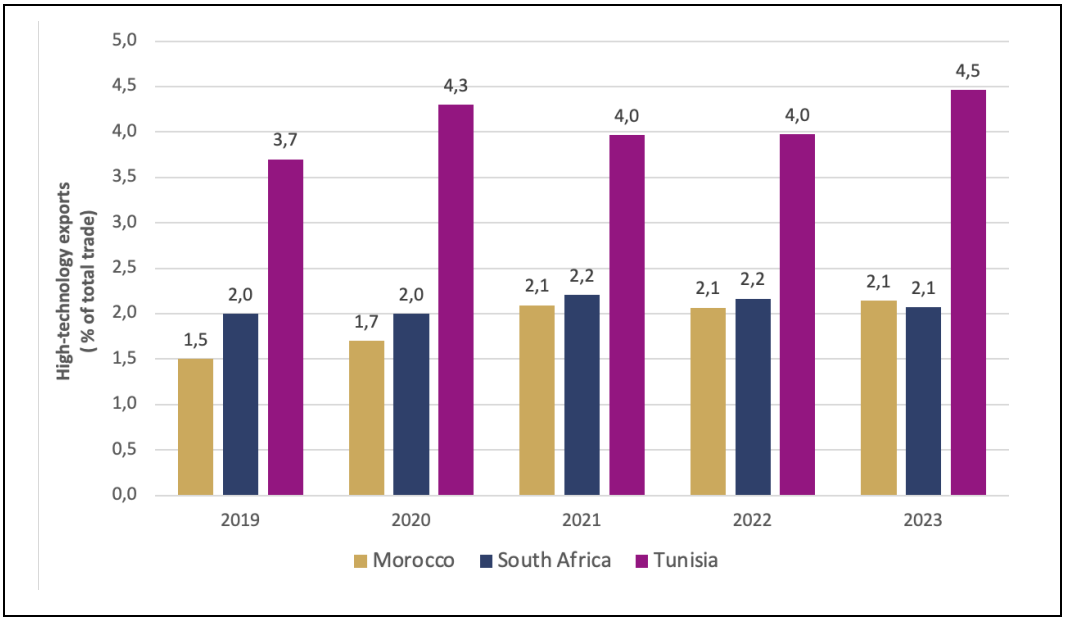
The latest information published by WIPO on this indicator dates to the publication of the GII report in September 2023. Information pertaining to 2024 will be included in the MEL report for Year 2 of implementation of the Agenda, so to provide for a comparison accordingly.

Figure 41 Mean high-technology exports as a % of total trade



GSF and WIPO GII 2019-2023, 2024. Tanzania was excluded from the calculation due to inconsistent values. AU countries (n=26): Algeria, Benin, Botswana, Burkina Faso, Cameroon, Cote d'Ivoire, Egypt, Ghana, Guinea, Kenya, Madagascar, Mali, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, South Africa, Togo, Tunisia, Uganda, Zambia, Zimbabwe. EU countries (n=27): Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.

Figure 42 Top 3 African countries in high-technology exports (% of total trade)



GSF and WIPO GII 2018-2023, 2024.

Analysis:

Figure 41 shows that on the African side, the mean value of high-technology exports as a percentage of total trade followed a slight positive overall trend, increasing by 0.04% between 2019 and 2023. On the European side, the mean high-technology exports increased by over 0.5% during the same period. Notably, high-technology exports have shown much stronger growth in Europe compared to Africa. Furthermore, the difference in average values between the continents is clearly large. A more detailed insight into the data on Figure 48 below shows that high-technology exports are mainly driven by Tunisia (approximately 4%), followed by South Africa and Morocco (approximately 2%). For instance, Tunisia stands as a strong example of successful investment in technological advancement and export diversification, driven by its early 2000s industrial policies, including the *Programme de Mise à Niveau* and the Priority Technological Investment program, alongside strategic investments in education (African Center for Economic Transformation, 2023).

Key takeaways and policy implications: Africa's high-technology export growth lags behind Europe. To promote growth of high-technology exports among AU countries, the initiatives underpinning the Agenda could de-risk support to innovative companies wishing to access foreign markets. One initiative of this type, namely Innowwide with its

"Africa call", is already included in the Dashboard of the AU-EU Innovation Agenda. This could enhance the trade of high-technology goods while promoting greater technology exchange and adoption across countries.

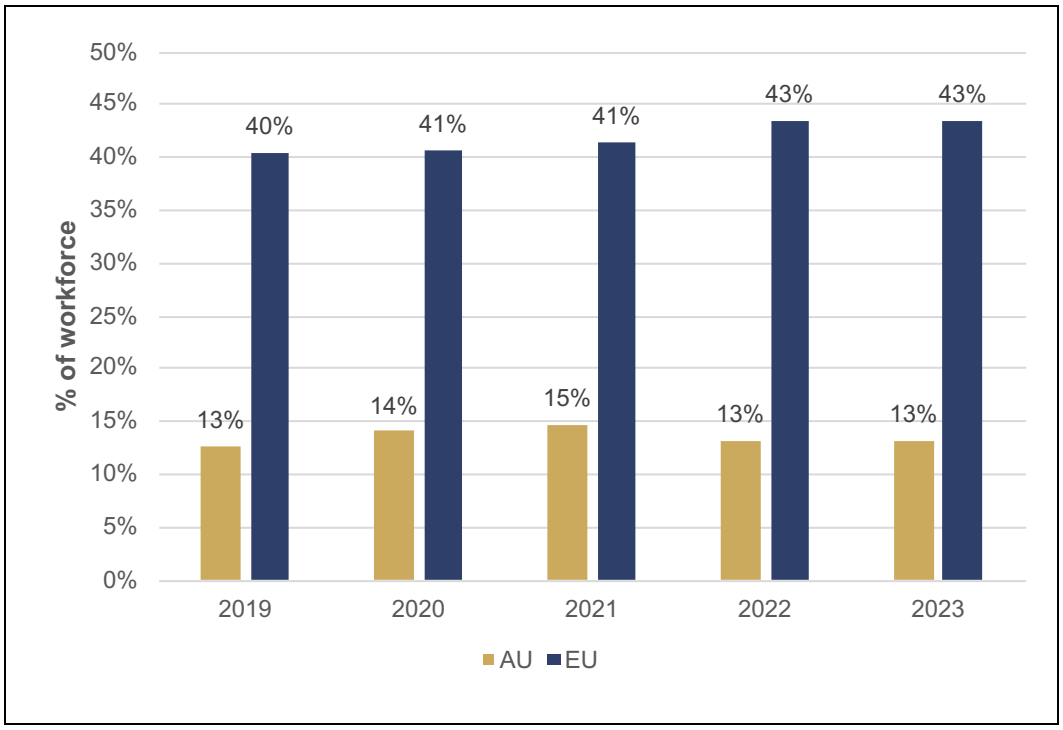
23. Knowledge-intensive employment, %

About the indicator: This indicator tracks knowledge-intensive employment as a percentage of total employment provides key insights into the effectiveness of AU-EU STI cooperation in driving job creation, workforce transformation, and economic competitiveness. It helps assess whether STI initiatives are leading to real, sustainable employment in high-tech sectors, fostering skills development, and supporting the transition toward knowledge-based economies in both regions.

Methodology*:* The data was sourced from the WIPO GII, and the means were calculated per continent (AU and EU). WIPO sources its data also from the International Labour Organisation (ILO). Countries with missing values were excluded from the analysis (included countries are listed at the bottom of the figure description).

The data represent employment in knowledge-intensive services (% of workforce, 15+ years old). The sum of people in 3 categories as a percentage of total people employed, according to the International Standard Classification of Occupations (ISCO) was used to build the indicator. Categories included in ISCO-08 are: 1 Managers; 2 Professionals; 3 Technicians and associate professionals. Where ISCO-08 data were not available, ISCO-88 data were used. Categories included in ISCO-88 are: 1 Legislators, senior officials and managers; 2 Professionals; 3 Technicians and associate professionals.

Figure 43 Mean knowledge-intensive employment as a %



GSF and WIPO GII 2018-2023, 2024. AU countries (n=19): Algeria, Botswana, Egypt, Ghana, Madagascar, Mali, Mauritius, Morocco, Mozambique, Namibia, Nigeria, Rwanda, Senegal, South Africa, Tanzania, Tunisia, Uganda, Zambia, Zimbabwe. EU Countries (n=27): Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.

Analysis: This indicator has fluctuated of approximately 41% for Europe and of approximately 14% for Africa over the past five years.

Key takeaways and policy implications:

- This indicator rests on classifications of occupations set by ILO which defines which categories of occupations fall under “knowledge-intensive employment”. Therefore, to address this indicator requires targeting of those occupations. In the classifications used by ILO, the most relevant may be the category on Technicians and Associate Professionals, which includes occupations such as engineers, technicians, healthcare professionals, etc. Different policies and programmes which intersect with the Agenda may influence how these occupations develop, such as capacity building and higher education (development of the labour force), investments or tax credits into R&I to allow for employment in these areas, the development of the private sector and support provided to SMEs, etc.

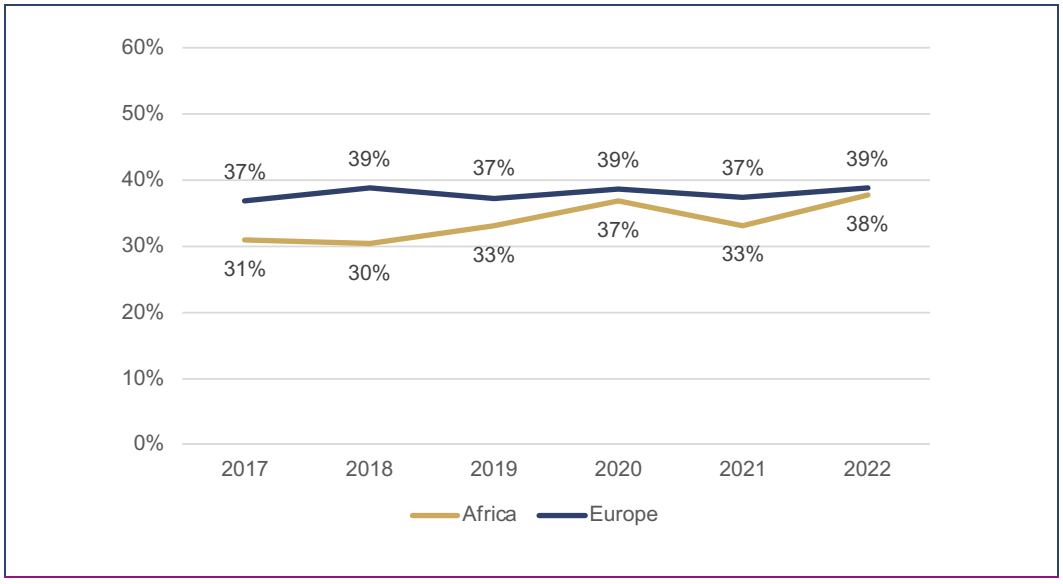
- For this indicator, only 19 African countries were included in the analysis as other country data was not available. The underrepresentation here affects the interpretability of this data and calls for further investment into data collection and reporting, in this case, to ILO as a UN body. The African Science Technology and Innovation Indicators (ASTII) initiative is recommended to review include this in their data collection. Proxy indicators on researchers (such as the indicator on female researcher on page 107) may provide alternative, similar data.
- Considering the holistic outlook and ambition of the AU-EU Innovation Agenda, it may also be prudent to consider the limitations of the occupation categories included here, based on the existing ILO categorisation, and widen the scope of the types of occupations to be monitored. This pertains especially to professions in the areas of arts, social sciences and humanities, which may fall outside of these categories. Future endeavours aiming to capture, as thoroughly as possible, employment in these sectors, would be advisable. The size of representation of cultural and creative industries in the EuroQuity ENRICH in Africa Virtual Community Platform could also be monitored.

24. Female researchers as a % of total researchers

About the indicator: This indicator is part of the SDGs indicators on industry, innovation, and infrastructure (Indicator 9.5.2), capturing data on gender on persons working in research and development in full-time equivalents, expressed in percentage. Monitoring female researchers as a percentage of total researchers is critical for assessing the inclusivity, impact, and sustainability of AU-EU STI cooperation. It helps evaluate gender equity progress, the effectiveness of policy initiatives, and the role of women in driving scientific and technological advancements. Ensuring greater female participation in research is not only a matter of fairness but also a key driver of innovation, economic development, and sustainable progress in Africa and Europe.

Methodology*:* Data were sourced from the UNESCO Institute for Statistics. As 2022 is the latest available data for countries, the starting date for this graph has been set back five years to 2017. Researchers are counted based on head counts and with full-time equivalent, and female researchers are expressed as a percentage of this. The mean was calculated per continent to produce the graph below. Heat maps also show the variation of the values in Africa and Europe across the years.

Figure 44 Mean female researchers as a percentage of total researchers in Africa and Europe (in headcounts and full-time equivalent (FTE))



GSF and UNESCO Institute for Statistics 2017-2022, 2024. African countries (n=19): Algeria, Burkina Faso, Burundi, Chad, Congo, Egypt, Ethiopia, Gambia, Kenya, Madagascar, Mali, Mauritania, Mauritius, Namibia, Nigeria, Rwanda, South Africa, Togo, Tunisia. European countries (n=28): Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.

Figure 45 Female researchers as a percentage of total researchers as heat graph

	2017	2018	2019	2020	2021	2022
Algeria	47,1	..	..	..	..	..
Burkina Faso	17	..	17,1	17	17,5	..
Burundi	..	14,3	..	..	..	..
Chad	..	3,4	..	..	..	..
Congo	..	..	..	..	..	18,9
Egypt	45,3	45,6	41,3	41,9	42	41,6
Ethiopia	11,5	..	..	..	..	..
Gambia	..	27,2	..	..	..	..
Kenya	..	..	..	..	..	38,7
Madagascar	32,9	33	..	..	..	..
Mali	15,1	..	18,7	..	11,9	..
Mauritania	..	24,5	..	..	..	..
Mauritius	..	43,7	46,4	48,3	48,5	48,9
Namibia	..	..	..	..	..	49,5
Nigeria	..	..	30,6	..	..	..
Rwanda	..	..	30,4	..	..	..
South Africa	44,9	45,7	46,2	46,6	47	..
Togo	9,3	11,2	11,2	11,2	11,4	11,5
Tunisia	55,3	55,4	55,7	56,2	54	54,9

Time	2017	2018	2019	2020	2021	2022
Austria	30,1	..	30,4	..	31,3	..
Belgium	34,8	..	32,6	..	33,5	..
Bulgaria	47,4	45,9	46,5	46,7	48,3	46,9
Croatia	48,4	49	48,3	49	48,8	48,4
Cyprus	38,1	37,3	37,6	38	38,7	..
Czechia	26,8	26,6	27,2	27,6	27,1	27,7
Denmark	35,7	..	35,3	..	..	..
Estonia	42,2	43,9	42,4	42,5	41,7	41,3
Finland	33,2	33,7	33,7	33,4	32,8	33,6
France	28,3	..	..	29,4	29,9	29,7
Germany	27,9	..	28,1	..	29,4	..
Greece	37,8	..	39	38,8	38,7	40,1
Hungary	30,5	28	30	28,5	29,3	28,8
Ireland	36,3	..	38,3	..	37,4	..
Italy	34,3	33,8	34,2	34,9	36,1	36,4
Latvia	52,2	50,7	50,6	50	49,8	50,7
Lithuania	49,5	49	49,1	49,1	48,5	48,8
Luxembourg	28,1	..	27,4	..	29,9	..
Malta	30,9	32,2	33,4	33	34,4	35,7
Netherlands	26,1	27	27,9	28,6	30,2	30,2
Poland	38,1	37,9	37,6	36,6	36,2	35,7
Portugal	43,7	43,3	42,8	42,5	42,6	42,1
Romania	46,7	46,2	46,9	47,3	46,6	46,1
Slovakia	41,9	41,2	41	41,1	40,7	40
Slovenia	32,3	32,5	33,3	33,6	34,4	35
Spain	40,5	40,8	41,3	41,5	41,6	41,6
Sweden	32,6	..	33,3	..	34,6	..

GSF and UIS, 2024

Analysis: Figure 44 shows that Africa and Europe have generally had a similar share of female researchers in recent years, at times coming on par.

Figure 45 shows the range in the values at country level, as well as the relative limited data on the African side.

Tunisia overall has highest female representation among researchers compared to other countries in Africa and Europe, with Latvia, Lithuania, and more recently Namibia and Mauritius, and South Africa following closely.

Key takeaways and policy implications:

- Data availability should be improved to enable better monitoring of female researchers' population figures, especially on the African continent. Only 19 of the 55 AU member states are represented in this analysis, and data gaps also exist for the EU (such as Austria, Belgium, and Sweden). This can also be considered a priority in the framework of the SDGs, as this indicator is connected to SDG 9 on industry, innovation, and infrastructure.
- Big divergences were recorded with on both continents. For example, some European countries with advanced higher education and research institutions such as the Netherlands and Germany, scored quite low on this indicator. Individual African countries also perform poorly, but this is also affected by the limited data available.

5. Conclusions and implications for the future of the AU-EU Innovation Agenda

This section reflects on the key take-aways from the findings presented in the previous sections for each Objective of the Agenda, in support of the continuation of its implementation. In addition, some overarching conclusions are also presented on the role of the Agenda in fostering R&I collaboration. Based on this, conclusions are also provided regarding the future MEL work to assess the impact over the following nine years of the Agenda's implementation.

5.1. Objective 1: Make it real

- The indicators on peer-reviewed publications and patent applications/granted patents are key measurements of AU-EU collaborative R&I outputs. They demonstrate a handful of strong countries on both continents as the main drivers of such collaboration, including South Africa, France, and Egypt. At the same time, it is important to note that such metrics only partially capture the full extent of innovation taking place in a country, and this is the case in particular in an African context, where much innovation occurs outside of formal patent systems (see, for instance, *Reeb & Zhao, 2021*). In future MEL rounds, copyrighted software but also outputs in terms of open science and open innovation could be captured to complement the picture, building on initiatives such as the Africa Open Science Open Hardware Community.
- Still, such **research outputs take time to be realised** and given the short time period since the launch of the Agenda (one year), it will be ensured to continue to monitor these metrics, with hopes of further collaboration on publications and patents, as well as a diversification of countries involved. In future, the MEL could also be extended to outcome indicators such as citations of publications (measuring scientific excellence) or patent valuations (measuring commercialisation potential).

5.2. Objective 2: Generate impact by design

- This chapter focused on indicators on activities happening primarily in the tech and innovation sector under the aegis of the Agenda, and their respective impact. Initiatives documented in this section were reported to either directly or indirectly contribute to job creation.
- The ENRICH in Africa EuroQuity Virtual Community Platform has grown steadily over the first year of the Agenda's implementation, simultaneously to a wider

community of start-ups, incubators, and innovation hubs supported by and underpinning the initiatives contributing to the implementation of the Agenda.

- As the **growth of the tech sector** on both continents is also driven by **VC investment**, and monitoring these financial flows will be relevant to see which priority areas of the Agenda benefit from funding from the private sector.
- Future data collection strategies should investigate further the types of influence initiatives such as the ones included in the Dashboard can have on the policy environment for R&I, for example at a national level, in AU and EU countries.

5.3. Objective 3: Strengthen people, communities, and institutions

- Much of the indicators monitored for this Objective focused on different aspects of coordination mechanisms. From the analysis, it became evident that **initiatives targeting higher education and research institutions play an instrumental role in research collaboration.** Erasmus+ and MSCA are two large initiatives fostering mobility between African and European researchers and innovators. Here, a few African countries stand out in terms of their participation rates: South Africa, Morocco, Tunisia, and Egypt. However, being solely funded by the EU, these programmes might be one-sided. In future, it will be important to support two-way mobility even more strongly, including Europeans studying, researching, and learning in Africa.
- More extensive data on youth, women, people with disabilities and refugees could enrich future MEL work. Improved data collection via survey, interviews, or focus groups could better inform this, and active strategies and programming should be undertaken as part of the MEL assessment of the impact of the implementation of the Agenda over the next years, e.g. by asking initiatives included in the Agenda's Dashboard to monitor how they address gender equality and inclusion in their activities.

5.4. Objective 4: Learn, monitor, and scale it up

- This Objective focused primarily on the way in which larger multilateral programmes co-finance R&I collaboration. Here, we see a lot of activities by initiatives such as PRIMA, the Africa Initiatives I and II, which target several priority areas of the Agenda (Green Transition, Public Health, Innovation and Technology, Capacities for Science), and EDCTP3 and MAV+ which focus on Public Health challenges such as vaccine development.

- The **Global Gateway with its Africa-Europe Investment Package** constitutes an important funding source for R&I collaboration between Africa and Europe, however at present only three research-focussed initiatives of MAV+ are included in the Dashboard of the Agenda and thus are officially recognised as contributing to its implementation. Similarly, as part of Horizon Europe, the **Africa Initiative I and II** are highly relevant funding schemes contributing to the implementation of the Agenda. More details on specific projects granted under the Africa Initiative I and II are expected to be published on the Dashboard in 2025.

5.5. Overarching conclusions and takeaways

5.5.1. Evaluability of the Agenda and lessons learnt

- The Agenda provides an **important overarching framework** consisting of a set of Objectives, short- medium- and long-term actions and priority areas, underpinned by a Dashboard of initiatives that – by being eligible for inclusion in the Dashboard – are aligned to one or more of the Objectives and aim to fulfil one or more of the actions of the Agenda. At the same time, the data presented in this report has revealed some interesting findings on the current state of play of Africa-Europe R&I collaboration, as highlighted under the Objective-specific conclusions above. These can feed into ongoing work underpinning the implementation of the Agenda, both at a global level and at the level of individual initiatives included in the Dashboard, and individual projects supported by these initiatives.
- At present, **the Agenda relies for its implementation on several EU-coordinated initiatives**, notably the Africa Investment Package of the Global Gateway, the Africa Initiative I and II, EDCTP, MSCA, and ERC. As a strategic framework, if its short- medium- and long-term actions are to be implemented, it will need to be underpinned by concrete activities with their own budget envelopes. The **Dashboard of initiatives is a significant step towards creating an overview of such activities**. However, at present, it mostly consists of initiatives that were designed before the adoption of the Agenda. To the extent that the AU Commission and the EC can signal that being included in the Dashboard of initiatives increases the chances of initiative coordinator to obtain additional funding to implement their activities, this would make it likelier that in future, initiatives will align their own Objectives with those of the Agenda, as reflected in the Dashboard eligibility criteria. This could then, in turn, improve strategic alignment of the multitude of AU-EU R&I collaborative efforts.
- The **MEL will be continued in the future**, both to trace trends over time and to expand the scope to capture more outcome-related data (such as, e.g. citations of publications or valuations of patents) as the Agenda gains more visibility and

traction. To guide future MEL work, the Theory of Change and corresponding list of indicators should be periodically reviewed to make sure the framework is fully fit for purpose.

- To inform more evidence-based decision making in policy, **better quality data are needed**, especially for African countries. This applies to time series and geographic data. For this, continued efforts are needed at national, international/regional and multilateral level. The African Science Technology and Innovation Indicators (ASTII) initiative is a good example to build on. Without data and measurements, it will be difficult to monitor or update policies in support of R&I.
- Indicators linked to the initiatives included in the Agenda's Dashboard have been a key element of this MEL report. The **eligibility criteria for initiatives** to be admitted to the Dashboard are important to consider in this regard. As the eligibility criteria[8] might be revised in the future, this needs to be considered in future MEL reporting. Many new and old initiatives will likely be admitted to the Dashboard in the future as the Agenda gains visibility, enlarging the evidence base for MEL work.
- For Innovation and Technology and Cross-Cutting Issues as **priority areas**, analysis is often difficult as they can be defined more loosely. Where possible, this report has defined the scope of these priority areas. The lack of clarity is also an advantage, especially for cross-cutting issues, as to ensure a comprehensive understanding of R&I collaboration. The MEL Task Force and this report could provide a valuable starting point for further clarifying definitions of priority areas.

5.5.2. Equity and Partnership

- Realising equal partnerships is essential in the context of Africa-Europe collaboration on R&I and beyond. The vast majority of initiatives contributing to the implementation of the Agenda are currently EU-funded; increasing the number of AU- funded and AU-EU co-funded initiatives in the future years of implementation of the Agenda would be advisable in order to deliver a co-owned Africa-Europe partnership, with shared commitment, responsibility and accountability. For example, at present, some African governments, such as the one of South Africa, are increasingly committing national funding to the support of R&I cooperation programmes (e.g. the newly launched "Long-Term Joint EU-AU Research and Innovation Partnership on Sustainable Energy [LEAP-SE]", entailing an overall 30

[8] List accessible on the webpage here: https://euraxess.ec.europa.eu/euraxess/innovation-talent-platform/au-eu-interface/dashboard-initiatives; and on pages 44-46 of the Roadmap of the AU-EU Innovation Agenda: https://research-and-innovation.ec.europa.eu/system/files/2023-07/ec_rtd_au-eu-innovation-agenda-roadmap.pdf.

million € budget, with inputs from the Department of Science, Technology and Innovation, DSTI [817,000 €] and the National Research Foundation, NRF [680,000 €]). Leveraging on South Africa's leadership at continental level and commitment to the AU-EU Innovation Agenda, initiatives of this type can prove to set trends among AU countries in the future.

- When aiming for **wider participation of African entities in European R&I programmes** like Horizon Europe, associations of more African countries (in addition to Tunisia) to the Framework Programme could be considered throughout the 10-year timeframe of implementation the Agenda.
- Inclusive development on innovation should also take into consideration differences among AU Member States. There are many African countries that are leading in the R&I space, such as South Africa, Egypt, Kenya, Nigeria, Rwanda, and Senegal. Their particularities should be examined, and their models could inspire policies in other parts of the continent.

5.5.3. Global context

- This report has focused on African and European R&I trends. It is however important to note that the R&I landscape is also informed by activities outside of these two continents, such as by the US, China, Japan, and South Korea. Some of this has been reflected in the indicator on public-private partnerships where the greatest private funders were coming from the US, or the indicator on GERD (contextual indicators) which demonstrates outliers such as South Korea in the R&D investment scene. While driving closer collaboration between Africa and Europe is essential, it remains important to stay abreast of worldwide trends and engaging with the wider scientific community through events like United Nations General Assembly (UNGA) Science Summits.
- This report complements other efforts to analyse R&I activities on both continents. In the African context for example, the African Innovation Outlook is to be published by AUDA-NEPAD in 2025, and this may inform further direction of the indicators.
- **Integration of the private sector** could inform and strengthen the performance of multiple indicators, while building closer ties across the innovation value chain. This could, for example, increase public-private partnerships as well as broaden networks fostered by the ENRICH in Africa Center.

Annexes

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Roadmap: Criteria of Eligibility for the Dashboard of Initiatives

Checklist of criteria for projects, programmes, partnerships and for research and education scholarships to join the Dashboard of initiatives:

1. Alignment with one or multiple Objectives of the AU-EU Innovation Agenda.
2. Fall under one of the actions of the 4 thematic areas of the AU-EU cooperation in R&I (i.e. Public Health, Green Transition, Innovation & Technology and Capacities for Science) or the area of "Cross-cutting issues", as they are defined in the AU-EU Innovation Agenda.
3. Include an action plan and already one or more secured funding sources (i.e. project/programme/partnership or scholarship programme ready to start).
4. Ensure AU-EU co-ownership, whether financial or in-kind, from conceptualisation to implementation and M&E of results. For research scholarships: ensure Africa-Europe co-ownership, whether financial or in-kind, from conceptualisation to implementation and M&E of results.
5. When possible, catalyse synergies with other initiatives, triggering collaboration among multiple funders, or other scholarship schemes (e.g. AU, EU and beyond).
6. Provide tangible/measurable socio-economic development, either directly or indirectly, in Africa and/or Europe (with clear economic, social and environmental Key Performance Indicators included in the programming).
7. Include a clear sustainability component, with an action plan being foreseen also for the aftermath of the initiative or the scholarship programme (e.g. future training by those who were trained; measures to counteract talent drain).
8. Aim for active local engagement and uptake of proposed innovative solutions. For research scholarships: entail research and/or curricular activities involving at least one African and/or one European institution.
9. Empower youth and/or women and/or vulnerable groups [e.g. persons from disadvantaged socio-economic background and/or persons with disabilities and/or refugees and/or stigmatised/discriminated groups of people] and their entrepreneurship.
10. Foresee a clear inclusive communication package (on project/programme/partnership action plan, results and impact; on scholarship scheme, beneficiaries and results) for the general public/civil society, at local level too.

List of initiatives that responded to the survey

MAV+

Africa - Europe Clusters of Research Excellence; led by ARUA and The Guild

Africa Knowledge Platform

African European Digital Innovation Bridge Network (AEDIB|NET)

African Research Initiative for Scientific Excellence – ARISE

African Science, Technology and Innovation Indicators (ASTII) Programme

AfriConEU

Call Transnational education initiatives – TNE D.D. n. 167/2023

DIGILOGIC

Erasmus+ Capacity Building in Higher Education (CBHE)

EU-Africa PerMed

Eureka Innowwide - Africa

Global Health EDCTP3

Henddu

HUBiquitous

LEAP-RE

mAkE - African European Maker Innovation Ecosystem

MSME support for Green Infrastructure Corridor for Intra-African Trade

OACPS R&I

PRIMA Programme

PROJECT GREEN INITIATIVE

STI for SDGs Roadmaps in Africa

"Strengthening the Europe-Africa Digital Ecosystem Through Increased R&I Cooperation (SEADE)"

sust turismo

TALKAM Human Rights Initiative

List of initiatives Interviews

1. AU-3S Programme
2. CoRE
3. EDCTP3
4. ENRICH in Africa Centre
5. Hubiquitous
6. Innowwide
7. LEAP-RE
8. Permed
9. SEADE
10. TALKAM

Additional Indicator Data

Total number of peer-reviewed publications co-authored by AU/EU authors (based on affiliation) to the different thematic focuses of the AU-EU Innovation Agenda

Table 6 Peer-reviewed publications data collection methodology

Thematic	Data extraction method
Capacities for Science	capacity building partnership, knowledge transfer, academic mobility, digital education systems AND higher education institutions, Research capacity, Scientific capacity, Science infrastructure, Research infrastructure, Scientific equipment, Research collaborations, Scientific partnerships, Knowledge sharing, research institutions, research and innovation, Capacity for science, science and research, Commercialization of research, Science policy, research cooperation, Scientific equipment, R&D, Research and development, scientific research, research investment, Scientific workforce
Public Health	Field of study = (Biology, Medicine, Psychology, Internal medicine, Pathology, Genetics, Gene, Disease, Psychiatry, Humanities, Nursing, Immunology, Virology, Social psychology, Epistemology, Neuroscience, Surgery, Bacteria, Infectious disease, Traditional medicine, Coronavirus disease, Microbiology, Family medicine, Health Care, Pediatrics)
Green Transition	In Title or Abstract or Keywords or Fields of Study: "green" OR "green transition" OR "climate" OR "environment" OR "sustainable energy" OR "circular economy" OR "renewable energy" OR "carbon footprint" OR "greenhouse" OR "energy efficiency" OR "biodiversity conservation" OR "green economy" « climate resilience » « climate adaptation » « sustainable agriculture » « food nutrition security » “Nature and landscape conservation” “sustainable environment” “global warming” “environmental conservation”
Innovation and technology	In Title or Abstract or Keywords or Fields of Study: « Research and innovation » « tech » « high tech » « high technology » « Itech » « innovation platforms » « artificial intelligence » « technology transfer » « technology» « digital transformation » « innovation» « nanotechnology » « biotechnology » « machine vision» « computer vision» « electronic» « software» « Tech hubs » « digital » « digitalization» « telecommunications » « cybersecurity »

GSF 2024

Table 7 Top 15 institutions in AU-EU research partnerships

Institutions	Country	Total of publications
University of Cape Town	South Africa	884
Centre national de la recherche scientifique	France	771
University of the Witwatersrand	South Africa	655
University of Pretoria	South Africa	402
Cairo University	Egypt	359
Spanish National Research Council	Spain	283
École Normale Supérieure	France	265
University of Amsterdam	Netherlands	237
Istituto Nazionale di Fisica Nucleare	Italia	229
University of Copenhagen	Denmark	229
INRAE	France	224
University of Paris	France	221
French Alternative Energies and Atomic Energy Commission	France	220
National and Kapodistrian University of Athens	Greece	209
University of São Paulo	Brazil	200

GSF 2024, Lens.org

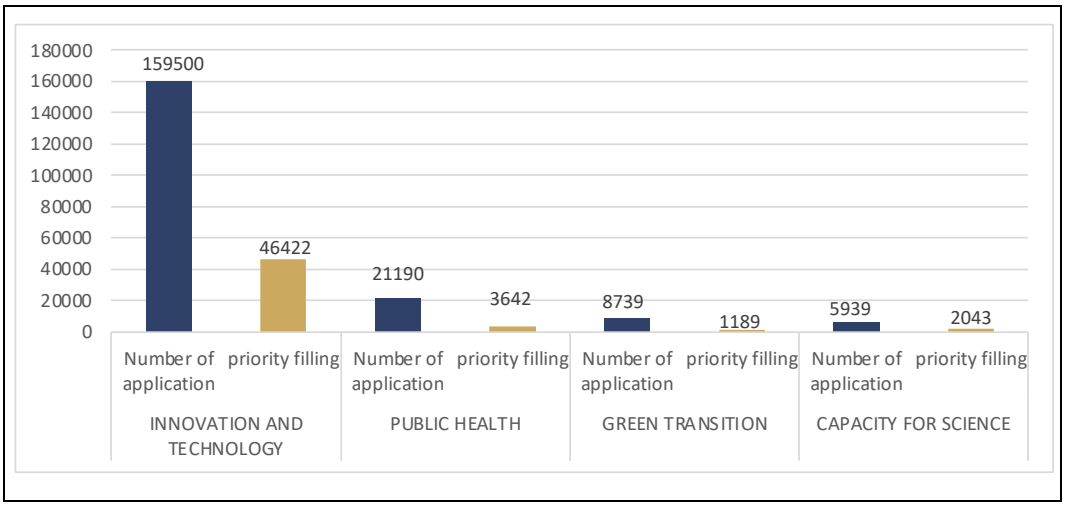
Number of patent applications filed in AU and EU (view on national and international applications) and number of patent applications filed in jointly by African and European organisations [all possibly disaggregated by thematic fields relevant to Agenda], between July 2023 and July 2024 (to be updated on a yearly basis)

Table 8 Patent data collection methodology

Thematic	Data extraction methods	Description
Innovation and Technology	All patents	N/A
Public Health	IPC code: A61	Medical Or Veterinary Science; Hygiene
Green Transition	CPC code: Y02	Technologies Or Applications For Mitigation Or Adaptation Against Climate Change
Capacities for Science	The' applicants' or inventors' provenance is a University	N/A

GSF 2024

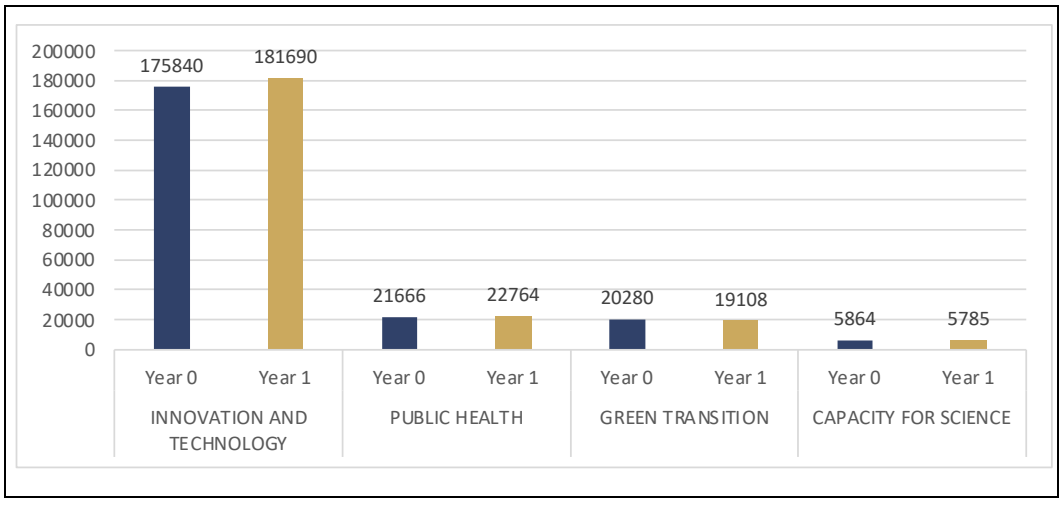
Figure 46 Patents applications by AU or EU applicants for the Agenda's priority area



GSF 2024, PATSTAT Autumn edition 2024

Number of patents granted in AU and EU countries (with view on national and international scope) and number of granted patents involving jointly African and European organisations [all possibly disaggregated by thematic fields relevant to Agenda], between July 2023 and July 2024 (to be updated on a yearly basis)

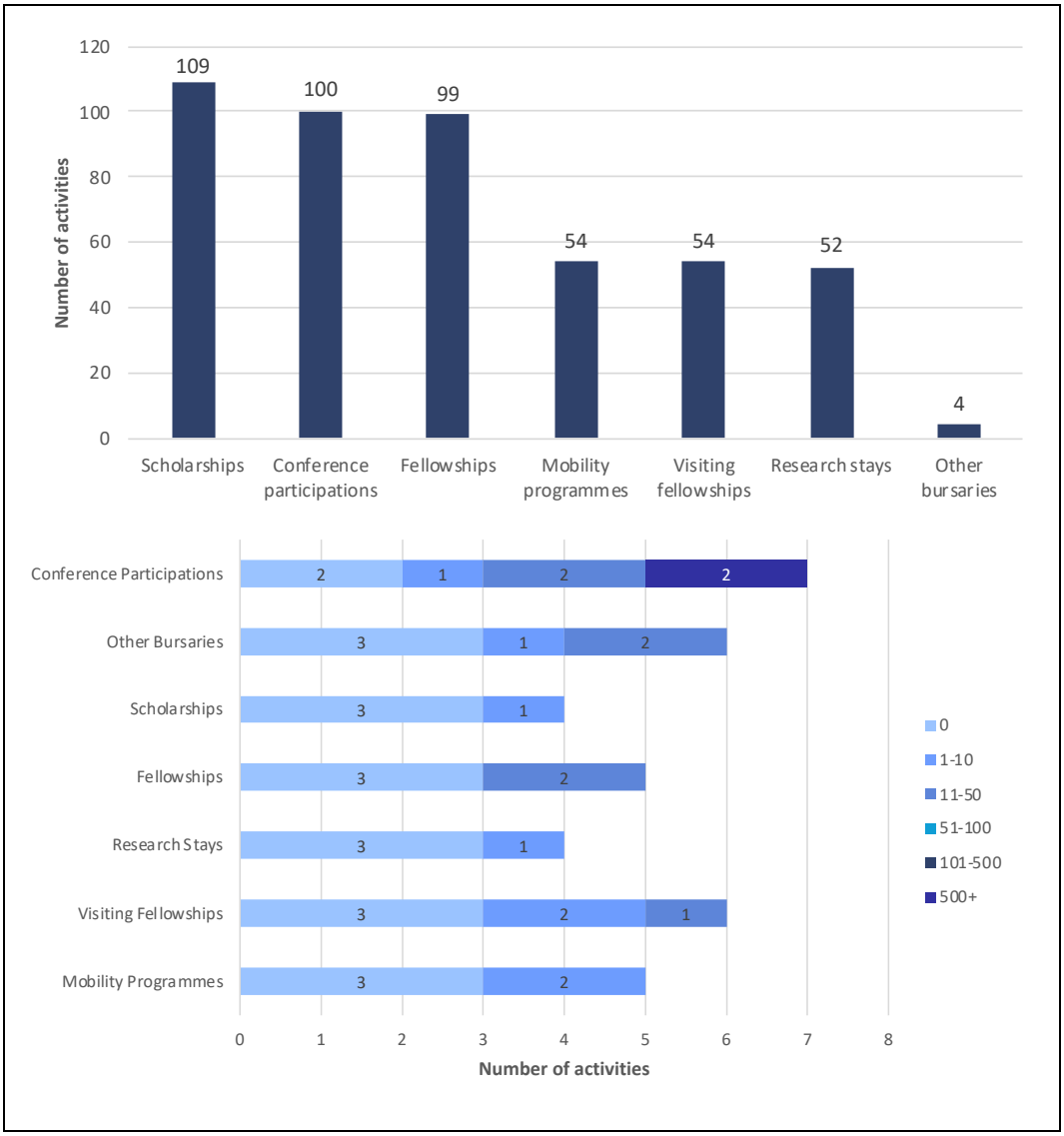
Figure 47 Patents granted to either AU or EU authors for the Agenda's priority area



GSF 2024, PATSTAT Autumn edition 2024

Number of knowledge exchange and experience-sharing initiatives launched (e.g. mobility programmes, visiting fellowships, scholarships, training courses and workshops, etc.) between and within AU and EU countries

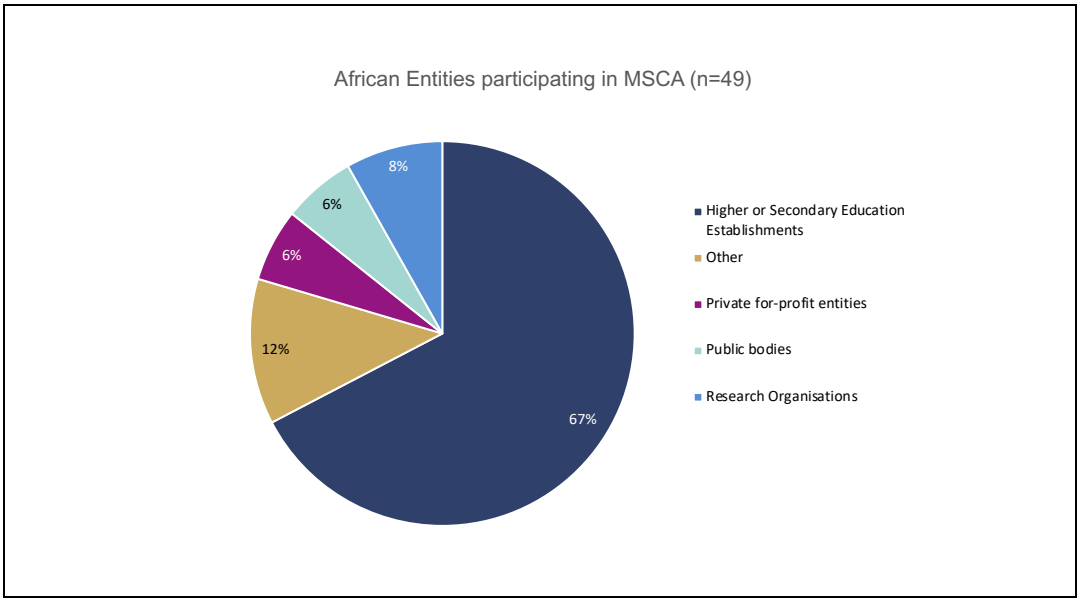
Figure 48 Survey question: Under your initiative, have you launched any of the following activities? (n=11)



GSF, 2024 using Data from survey of initiative coordinators.

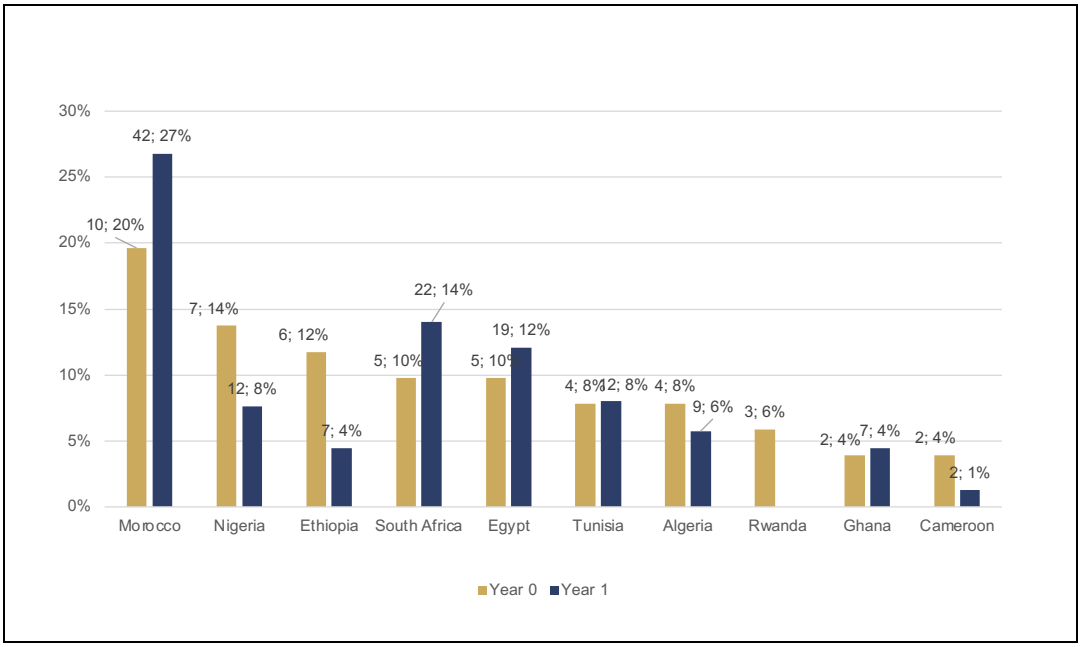
Number of Africans/African entities participating in MSCA (Marie-Curie Actions)

Figure 49 African entities participating in Marie-Curie Actions (MSCA) between July 2023-July 2024



GSF, 2024 using Cordis data.

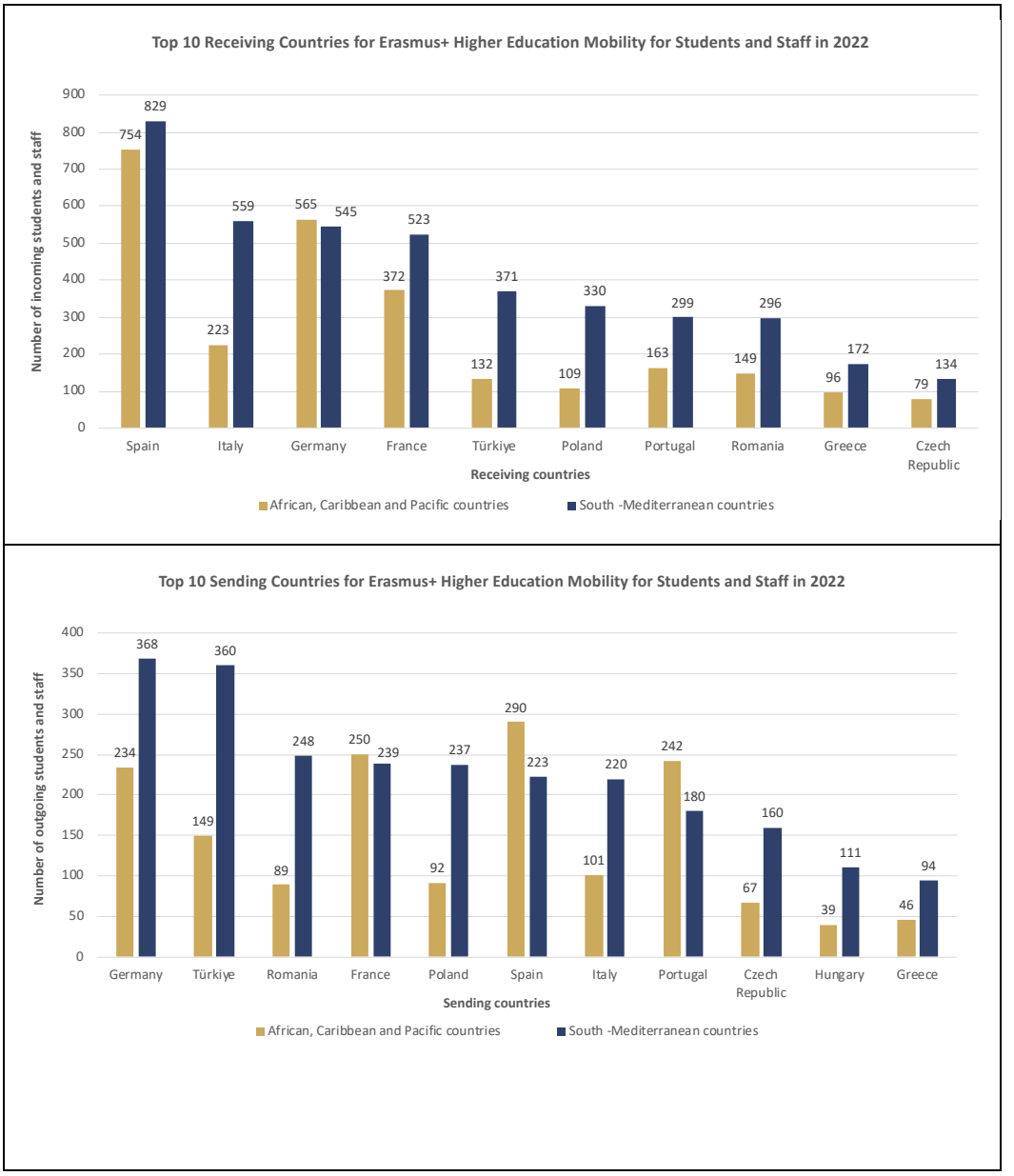
Figure 50 Top 10 African participants Marie-Curie Actions (MSCA) starting their mobility in Year 0 and Year 1



GSF, 2024 using eCorda data.

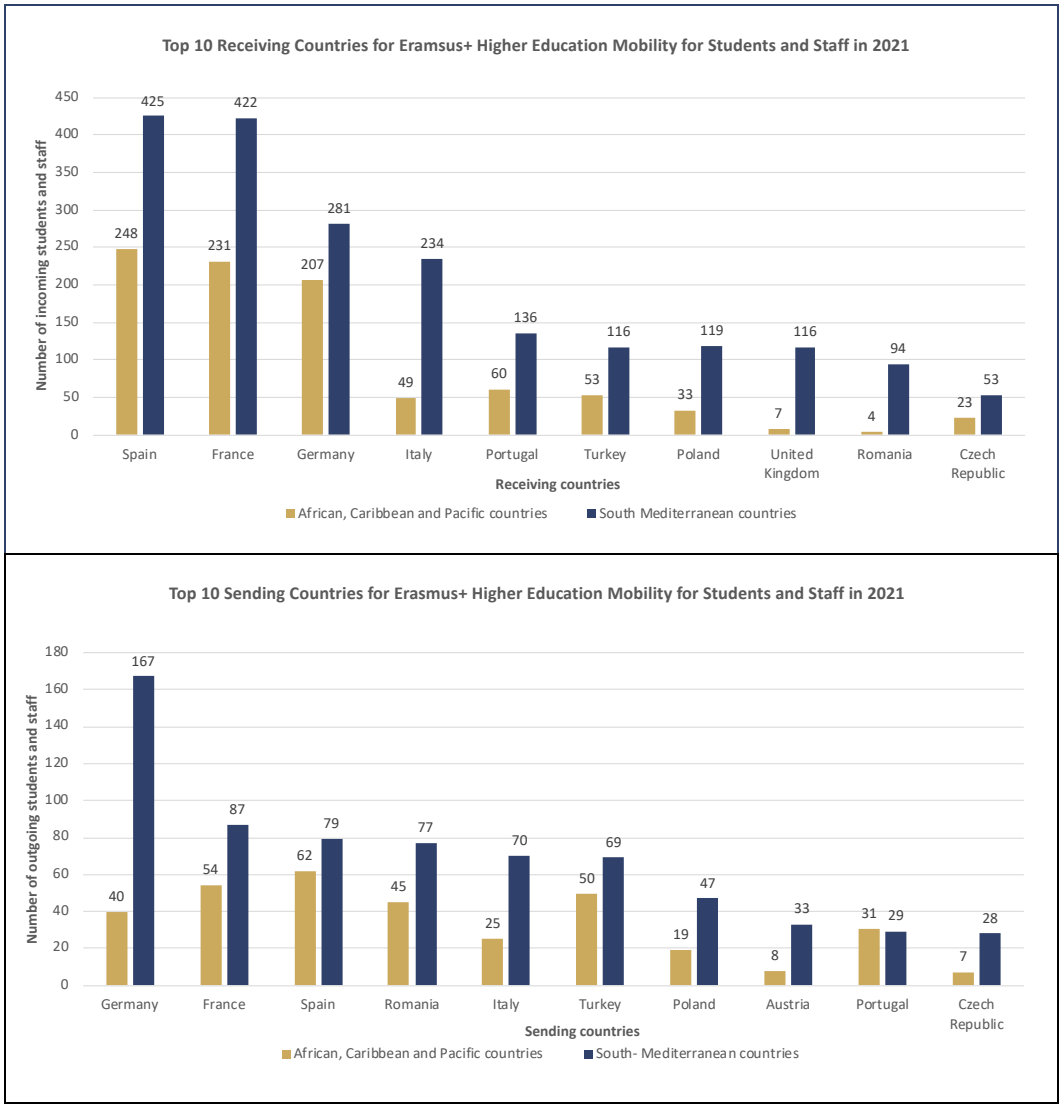
Number of Africans/African entities participating in Erasmus+

Figure 51 Erasmus+ Mobility of staff and students in 2022 between Africa and Europe



GSF, 2024 using data from Erasmus+ Annual Report 2022 Statistical Annex.

Figure 52 Erasmus+ Mobility of staff and students in 2021 between Africa and Europe



GSF, 2024 using data from Erasmus+ Annual Report 2021 Statistical Annex.

Table 9 Erasmus+ Mobility of staff and students: sending and receiving by EU countries

	2021				2022			
	Sending		Receiving		Sending		Receiving	
	South - Mediterranean countries	African, Caribbean and Pacific countries	South - Mediterranean countries	African, Caribbean and Pacific countries	South - Mediterranean countries	African, Caribbean and Pacific countries	South - Mediterranean countries	African, Caribbean and Pacific countries
Austria	33	8	47	10	90	65	113	56
Belgium	24	42	41	25	81	196	111	104
Bulgaria	10	1	24	1	61	22	62	15
Croatia	1	0	5	0	56	16	43	19
Cyprus	0	0	8	0	5	1	22	0
Czech Republic	28	7	53	23	160	67	134	79
Denmark	14	21	18	16	35	100	59	79
Estonia	1	1	5	2	19	24	24	4
Finland	7	6	22	9	19	66	90	92
France	87	54	422	231	239	250	523	372
Germany	167	40	281	207	368	234	545	565
Greece	7	14	37	16	94	46	172	96
Hungary	3	10	19	9	111	39	119	42
Iceland	0	2	6	1	3	19	8	5
Ireland	16	0	6	3	19	20	23	53
Italy	70	25	234	49	220	101	559	223
Latvia	3	0	21	1	31	18	39	15
Liechtenstein	1	0	1	0	3	5	2	4
Lithuania	10	2	24	4	88	16	77	25
Luxembourg	1	0	6	2	0	1	9	3
Malta	0	0	0	0	8	4	11	0
Netherlands	7	14	34	29	81	243	116	139
North Macedonia	4	0	0	0	2	0	1	0
Norway	4	0	11	9	34	34	21	53
Poland	47	19	119	33	237	92	330	109
Portugal	29	31	136	60	180	242	299	163
Romania	77	45	94	4	248	89	296	149
Serbia	4	0	1	1	13	2	23	0
Slovakia	7	6	4	0	25	14	30	16
Slovenia	11	0	27	8	27	3	41	5
Spain	79	62	425	248	223	290	829	754
Sweden	5	10	37	24	31	54	78	93
Türkiye	69	50	116	53	360	149	371	132

GSF, 2024 using data from Erasmus+ Annual Report 2021 Statistical Annex.

Relevant regions were selected for this: South Mediterranean (2022): Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, Syria and Tunisia. Sub-Saharan Africa (2022): African, Caribbean, and Pacific Island States: Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cabo Verde, Central African Republic, Chad, Comoros, Congo, Congo - Democratic Republic of the, Côte d'Ivoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Eswatini, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Tanzania, Togo, Uganda, Zambia, Zimbabwe.

African, Caribbean and Pacific Countries (2021): Angola, Antigua and Barbuda, Belize, Cape Verde, Comoros, Bahamas, Barbados, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo (Brazzaville), Congo (Kinshasa), Cook Islands, Cote d'Ivoire, Cuba*, Djibouti, Dominica, Dominican Republic, Eritrea, Ethiopia, Fiji, Gabon, Gambia, Ghana, Grenada, Republic of Guinea, Guinea-Bissau, Equatorial Guinea, Guyana, Haiti, Jamaica, Kenya, Kiribati, Lesotho, Liberia, Madagascar, Malawi, Mali, Marshall Islands, Mauritania, Mauritius, Micronesia, Mozambique, Namibia, Nauru, Niger, Nigeria, Niue, Palau, Papua New Guinea, Rwanda, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Solomon Islands, Samoa, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Suriname, Swaziland, Tanzania, Timor-Leste, Togo, Tonga, Trinidad and Tobago, Tuvalu, Uganda, Vanuatu, Zambia, Zimbabwe.

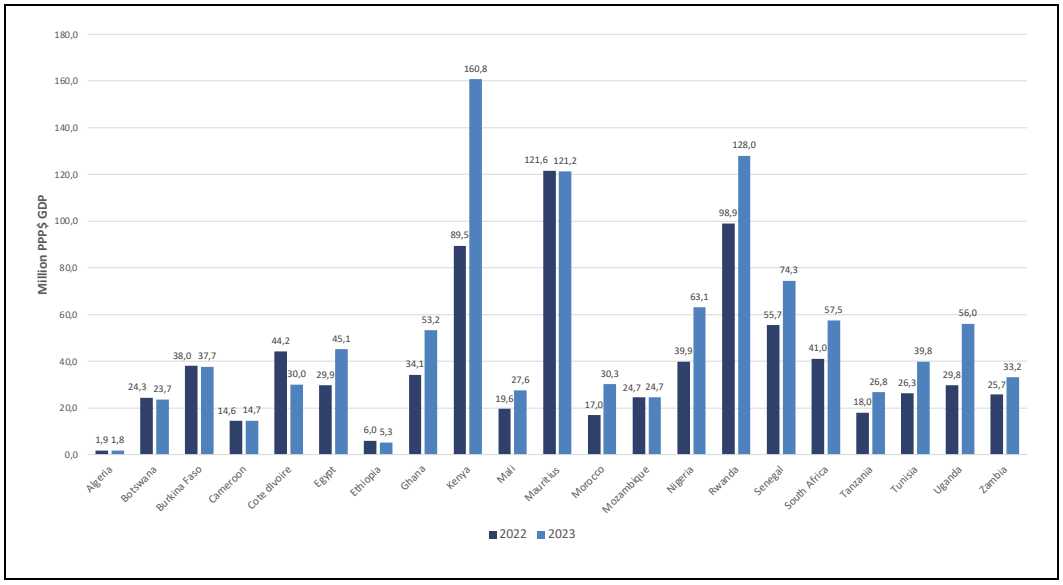
Number of initiatives seen as enabling the implementation of the actions foreseen by the Agenda

Table 10 Implementing entities of the Dashboard initiatives

Implementing entity	# of Init.	Budget (m€)
AUDA-NEPAD	1 (AU-3S)	9,3
EffizienzCluster Management GmbH	1 (DIGILOGIC)	2
Consortia of African and European universities and non-academic organisations	1 (CoRE)	17
African Academy of Sciences (AAS)	1 (ARISE-PP)	25
AICS, CIHEAM Bari (Italy)	1 (WATDEV)	7,5
AUDA-NEPAD, British Embassy Brasilia (FCDO), Brazilian Ministry of Foreign Affairs (Brazilian Cooperation Agency, ABC), Member States	1 (UK-Brazil-Africa)	0,5
AUDA-NEPAD, Lund University, Tshwane University of Techology, (UNESCO Chair) Member States, Regional Economic Communities (RECs) and AU Observatory of STI	1 (ASTII)	15,8
Development Finance Institutions (EIB, other)	1 (TEI on MAV+)	10
ENABEL (Belgium), AECID (Spain), LUXDEV (Luxembourg), ECOWAS	1 (PRISMA)	6
EU Delegations in Senegal, Rwanda, Ghana, South Africa, Nigeria, Egypt	1 (MAV+)	67
EU Joint Research Centre (JRC)	2 (AKP, STI4SDGs)	1,9
EU-Africa PerMed consortium	1	2
Eureka	1 (INNOWWIDE)	1,5
European Education and Culture Executive Agency (EACEA)	1 (Erasmus+)	34
GIZ	3 (prosilience, aedib|net, Green Infrastructure Corridors)	13,65
Innotec21 GmbH	1 (Hubiquitous)	2
INOVA+ Innovation Services, S.A.	1 (AfriConEu)	2
Italian Ministry of University and Research (MUR), Italian Ministry of Foreign Affairs and International Cooperation (MAECI)	1 (10 TNE)	50
LGI Sustainable Innovation (France), Department of Science and Innovation (South Africa)	1 (LEAP-RE)	35
OACPS	1 (OACPS)	60
PRIMA Foundation	1 (PRIMA)	484
Project consortium (coordinated by CIRAD)	1 (BIOSTAR)	9,4
Project consortium (coordinated by Steinbeis 2i GmbH)	1 (ENRICH in Africa)	3,6
Project consortium (coordinated by Università degli Studi di Genova)	1 (JUST-GREEN AFRH2ICA)	1
TBD	4 (AEDIB 2.0, Global Health EDCTP3, Africa Initiative II, Regional Centres of Excellence for Green Transition)	761
WHO, MPP	1 (MAV+)	12,5
Zentrum für Soziale Innovation GmbH - ZSI	1 (mAKE)	2

VC recipients, deals/bn PPP$ GDP

Figure 53 Total VC recipients by country in 2022 and 2023



GSF and WIPO GII 2019-2023, 2024.

VC in Europe and Africa in 2024

Methodology*:* To supplement the limited data extracted on VC received from the WIPO GII, additional research was carried out to identify the top African and European countries with different VC metrics.

For Europe, Statista's data on VC investments raised was consulted, and for Africa, the number of VC deals per country was consulted.

Table 11 VC Data on Top Performing African and European Countries

VC Investments Raised in 2024 in billion EUR (Statista)	# of VC deals per country (BB, 2024)
UK (16.2)	Kenya (697)
Germany (8.2)	Nigeria (692)
France (7.8)	South-Africa (524)
Switzerland (3.1)	Egypt (434)
Sweden (2.7)	Ghana (171)

GSF, Statista and Briter Bridges. 2024

Analysis: Additional data on VC trends on the African and European continent are summarised in Table 11 (this also serves as a proxy indicator to the number of tech hubs). In Africa, 2,189 companies provided VC type financing in 2024, 448 investments were made for a total amount of USD 2.2 b. This is a decrease from 2023 when more than USD 4 bn were invested through 599 transactions. The best year was 2021 with USD 5.3 bn invested through 795 deals (Briter Bridges, 2024).

Data on VC investments in Europe shows that the highest performers in this space are the UK, Germany, and France, with the UK lying far ahead, and Germany only receiving half of the UK's amount in VC in 2024 as outlined in Table 11. These data on top performing countries for VC investments also backs up the tech hub ranking from the Financial Times, in 2024, as described in

Figure 15, with an exception being that Switzerland received more VC than Spain, although Spain ranked higher as a tech hub in 2024). In Europe as well as the rest of the world, this falls on a backdrop of decreasing investments after peaking in 2021, influenced by wider macroeconomic factors (Djurickovic, 2023).

Take aways/Policy Implications

- The African Big Four and countries such as the UK, Germany, France, and Sweden are seen as the main players in the events around R&I cooperation. While these are the "usual suspects", other countries should also be included in developing their VC/start-up markets.

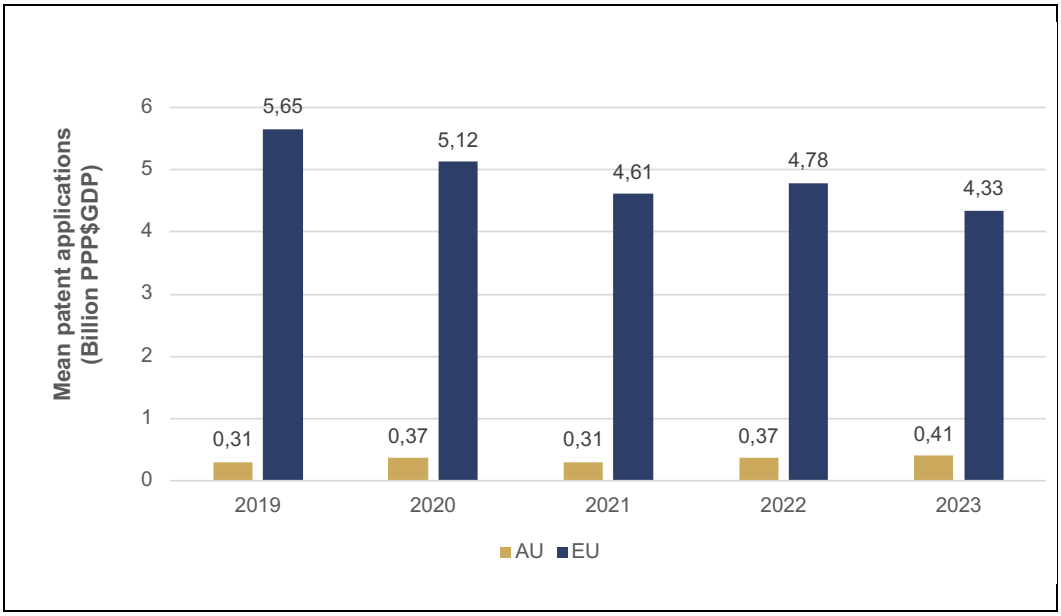
Patents by origin, deals/bn PPP$ GDP

Methodology*:* Data were sourced from the WIPO GII, and means were calculated according to continent (AU and EU). Countries with missing values were excluded from the analysis.

The adoption of the AU-EU Innovation Agenda was in 2023, and to portray the trends running up to the adoption, the starting point for this data has been set as 2019.

The latest information published by WIPO on this indicator dates to the publication of the GII report in September 2023. Information pertaining to 2024 will be included in the MEL report for Year 2 of implementation of the Agenda, so to provide for a comparison accordingly.

Figure 54 Patents by origin/bn PPP$ GDP



GSF and WIPO GII 2019-2023, 2024. AU countries (n=26); Algeria, Benin, Botswana, Burkina Faso, Cameroon, Cote d'Ivoire, Egypt, Ghana, Guinea, Kenya, Madagascar, Mali, Mauritius, Morocco, Mozambique, Niger, Nigeria, Rwanda, Senegal, South Africa, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe. EU countries (n=27): Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.

Analysis: The African data shows promise as there has been a significant growth rate in patent applications between 2019 and 2023, from 0.31 to 0.41 billion PPP $ GDP, while numbers of European patent applications are dropping. The African growth may be due to the fact that the data starts from a low value.

Take aways/Policy Implications

- As described in the indicators previously, patent applications are a relevant indicator for technology innovation outputs, but it is important to recognise that they are not sufficient as a standalone measure (Reeb and Zhao, 2021). These data should be considered in conjunction with other indicators.
- The European data shows greater fluctuation: On the European side, the 2021 dip may be partially attributed to the effects of the pandemic, although more of a rebound is expected in 2023 as there was in 2022. Other data, such as from the European Patent Office, states that patent applications have been increasing in the time period: in 2019, there were approximately 181,000 patent filings, and by 2023 this was approximately 199,000 filings (EPO, 2023). Reasons for the fluctuation in the figure above may therefore be due to the expression of this indicator in PPP $ GDP. What remains unclear in the GII's methodology for

patent by origin is the resident patent application and whether the patent filing by a non-European at, for example, the European Patent Office, affects the data.

- The process of patenting is often seen as a challenge and barrier to innovation outputs on the African side. In the AU-EU Innovation Agenda, the need to strengthen overall intellectual property protection and to develop a governance framework is explicitly mentioned, and in combination with the indicator on applied for/granted patents listed in this data will capture key trends on both continents.

Survey Questions

1	What is the name of the initiative?
2	Is your initiative on-going?
3	How large is the initiative's funding? (in EUR)
4	What field does your initiative work in?
5	You have selected "Other" on the previous question on the field in which your initiative works in. Please describe the field briefly:
6	What EU Countries are involved in the initiative?
7	Which AU Countries are involved in the initiative?
8	What EU countries/regions are targeted in the initiative?
9	Which AU Countries/regions are targeted in the initiative?
10	How many stakeholders/beneficiaries are benefitting from your initiative? (Approx. number: Business Entrepreneurship, Government Sector, Research Institute, Tertiary Institutions, Non-profit organisations)
11	How many projects are running under your initiative? If your initiative does not have any projects or programmes running under the auspices of the initiative, please leave 0.
12	Does your initiative work with start-ups, incubators, or innovation hubs?
13	How many start-ups, incubators, and innovation hubs were established and/or supported? (Number: please clarify which one of the two cases: whether 'established', 'supported', or 'established and supported')
14	Does your initiative also provide capacity building activities to existing AU-EU Innovation networks?
15	What kind of capacity building activities does your initiative provide to AU-EU Innovation networks?
16	How many entities would you estimate are involved in knowledge production under your initiative?
17	How many peer-reviewed publications on R&I have been published by members of the initiative?
18	How many of those are Open Access publications?
19	Please list the DOIs here. In case of multiple DOIs, please separate them with a ";".
20	How many of the following kinds of publications have been produced as part of your initiative to date? (Number: communication/marketing material, position papers, other)
21	Do you have any figures on the number of users of publications resulting from your initiative?
22	How many policy changes has your initiative contributed to?
23	How many events have been organised under your initiative that brought together policy makers, with an aim to inform policy making? This can include roundtables, stakeholder engagement meetings, etc. where at least one policy making body is represented (ministries, regulators, local governments, etc.)
24	How many events have been organised under your initiative that brought together representatives from one or several of these sectors: public sector, private sector, civil society to promote your initiative?
25	How many people in total attended all of these outreach events combined?
26	Please provide an estimate of the number of African and European stakeholders that have been brought together for the first time thanks to your initiative. This addresses any people brought together through activities such as events, meetings, etc.
27	Did these activities lead to new partnerships? Partnerships in this context mean: collaboration between two entities (AU/EU) that have taken on official deliverables/outputs (events, publications, product developments, etc)

28	What stakeholders are represented in these new partnerships?
29	Do you have any figures on the number of users of publications resulting from your initiative?
30	How many policy changes has your initiative contributed to?
31	How many events have been organised under your initiative that brought together policy makers, with an aim to inform policy making? This can include roundtables, stakeholder engagement meetings, etc. where at least one policy making body is represented (ministries, regulators, local governments, etc.)
32	How many R&I staff are involved in implementing your initiative, and what is the gender breakdown? (R&I Staff: Male, Female, Diverse)
33	How regularly do members of the initiatives meet to coordinate activities?
34	Which of the following barriers have you possibly faced (if any) in the coordination of bi-regional/lateral activities?
35	You have selected "Other" for the previous question on barriers to the coordination of bi-regional/lateral activities. Please provide a brief description of these other barriers.
36	Does your initiative have a dedicated office/room?
37	How many staff work on coordination/administration of the initiative (full-time equivalents)?
38	Does your initiative have a monitoring and evaluation framework?
39	Does this include a set of targets/key performance indicators or similar?
40	How many of these have already been achieved as of now?
41	Please name the most successful projects from your initiative with their key achievements.
42	Do you have research outputs and innovations that are measured with a Technology Readiness Level (TRL)?
43	How many of the research outputs and innovation are measured with a TRL of higher or equal to 5?
44	What was done and what is foreseen to ensure their "scale up"?
45	Do you have an official document/policy/strategy that addresses the topic of capacity building in the initiative?
46	How much budget does the initiative allocate to capacity building? (in EUR)
47	How much budget does the initiative allocate to building/maintaining innovation infrastructure? (in EUR) Innovation infrastructure refers to items such as equipment and infrastructure (laboratories, green houses, etc).
48	How many capacity building activities are planned as part of the initiative and how many have been completed? (Number: Planned capacity building activities, completed capacity building activities)
49	How many individuals were trained through the capacity building activities of the initiative in total so far?
50	Which of the following categories were addressed explicitly through capacity-building activities?
51	Did you explicitly target any of the following groups of people in your capacity-building activities?
52	Does your initiative have an explicit strategy for ensuring gender equality?
53	How many beneficiaries have attained formal academic qualifications in part thanks to your initiative? (Number: bachelors, masters, PhDs, postdocs, other diplomas)
54	How much additional funding has been secured since the launch of the initiative? (in EUR)
55	Where has the additional funding come from?
56	How many joint R&I proposals directly resulted from your initiative (e.g. by bringing together co-applicants in the initiative)?

57	Does your initiative include an advisory board or similar body?
58	Does the advisory board (or similar) include at least one member from each continent?
59	Under your initiative, have you launched any of the following activities? If so, how many? (Please leave 0 if not relevant) (Number of activities: mobility programmes, visiting fellowships, research stays, fellowships, scholarship, other bursaries, conference participations)
60	How many people have benefitted from the following activities in your initiative? (Please leave 0 if not relevant) (Number of people: mobility programmes, mobility programmes, visiting fellowships, research stays, fellowships, scholarship, other bursaries, conference participations)
61	How many jobs would you estimate were created directly or indirectly by your initiative? (Number: directly, indirectly)
62	How many businesses and enterprises would you estimate have been generated through the initiative?

Interview Questions

Introductions

- Can you shortly summarise the main goals of your initiative? Who are the main target groups?
- How have you engaged with the AU-EU Innovation Agenda so far?

Translation of results into tangible outputs

- What do you consider the most impactful research findings/innovation outputs of your initiative? What thematic area do they belong to? (Innovation Agenda's four priority areas include Green Transition, Public health, Capacities for Science, Innovation and Technology, and Cross-Cutting Issues)
- What are some success factors/potential barriers to the development of tangible outputs?

Uptake and Impact of knowledge and Research and Innovation findings

- How have your research outputs been taken up?
- Who has taken up the research outputs, and has the uptake varied by audience (has there been variance between the intended target group and others)? What are factors that enable/hinder uptake of research outputs?
- Can you give examples of your research outputs being taken up?
- What impact has the uptake of the research & innovation outputs led to?

Dissemination of knowledge

- Do you have a marketing/dissemination strategy for communicating the results of your initiative? How do you ensure to reach a broad audience for communicating the results of your work?

Stakeholder outreach and engagement:

- What kind of outreach events have you organised? Who did you try to target, and what was the aim?

Capacity to inform/influence policy and decision making

- What kind of policy impact has your initiative had? (This can be legislative, regulatory, community, etc.)

Strengthening of capacity building

- Does the initiative have/foresee an explicit strategy for capacity building?
- How much exchange exists between the AU and the EU as part of your initiative's capacity building component?
- What capacity building activities were organised/are planned by the initiative?

Sustained effects of AU-EU cooperation in innovation networks

- How important was the AU-EU cooperation component as part of your initiative? Did it strengthen the innovation networks to foster future collaboration?

Co-financing

- What efforts were taken by the initiative to attract additional funding/trigger co-financing mechanisms for your initiative (e.g. to ensure its sustainability and scale up)? Have any additional/other funding instruments been put in place?

Sharing and Transfer of Knowledge Outputs and Innovation

- Do you have any success stories of knowledge and technology exchanges?

Socio-economic Impact

- Do you know if your initiative has contributed to increased employment? Has it led to increased employment opportunities, job creation, business generation, new services being generated, etc?
- Has your initiative had social impact on outcomes such as education, health, environment, governance, etc?
- Does your initiative have a gender action plan or gender mainstreaming policy?

Co-ownership (AU-EU)

- How did/do partners from the AU and EU collaborate in the design of the proposal/initiative?
- Were there external mechanisms that supported the coordination between the AU and EU partners in your initiative?
- How frequently do you hold meetings between AU and EU partners?

Coordination Mechanism

- Did you set up any internal mechanisms to coordinate your initiative? Can you give examples of successes in this area? How could these mechanisms be potentially further improved?
- Has potential for further cooperation increased as a result of your initiative?"
- What direct benefits has the AU-EU collaboration brought the partners/leaders of the initiative?

Monitoring, Evaluation, and Learning

- Does your initiative have a Monitoring and Evaluation system?
- Was the MEL system able to provide any lessons for the initiative? What were they?

Scaling up of successful projects

- Has there been a successful "scaling up" of the initiative or of some of its projects, or is this planned for the future? If so, what does the scaling up entail and aim to achieve and what were factors that enabled or will enable the scaling up?

Wrap-up and conclusion

- Are there any other points you would like to raise as part of the monitoring and evaluation of the AU-EU Innovation Agenda?

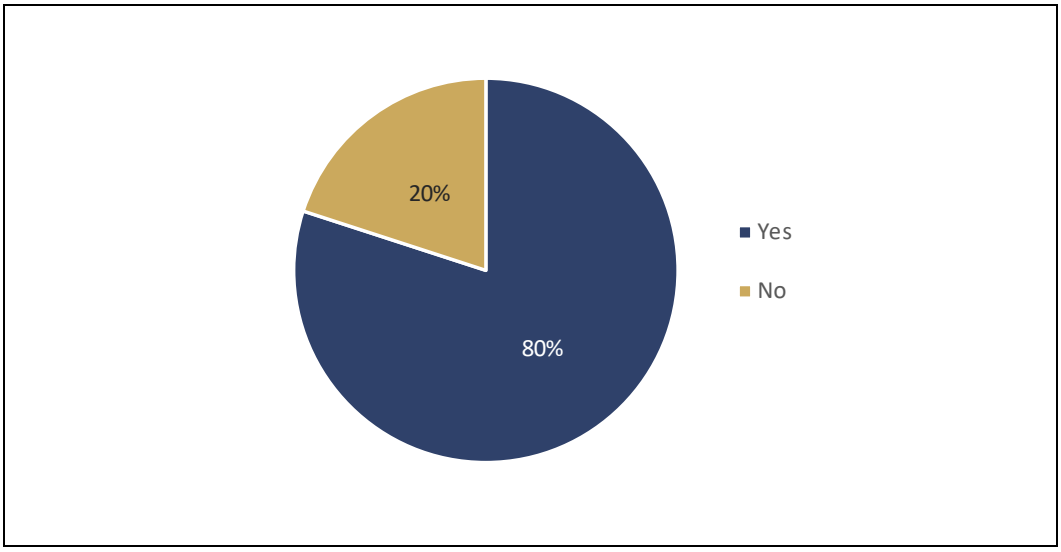
Additional survey graphics

Table 12 Survey question: What is the name of the initiative?

	Initiative
1	Special measure 2023 support to African countries under the Team Europe Initiative on Manufacturing and Access to Vaccines and Health technologies in Africa
2	AfriConEU
3	African Science, Technology and Innovation Indicators (ASTII) Programme
4	African European Digital Innovation Bridge Network (AEDIB|NET)
5	Global Health EDCTP3
6	Call Transnational education initiatives – TNE D.D. n. 167/2023
7	OACPS R&I
8	Erasmus+ Capacity Building in Higher Education (CBHE)
9	STI for SDGs Roadmaps in Africa
10	Africa Knowledge Platform
11	mAkE - African European Maker Innovation Ecosystem
12	MSME support for Green Infrastructure Corridor for Intra-African Trade
13	sust turismo
14	Eureka Innowwide - Africa
15	Strengthening the Europe-Africa Digital Ecosystem Through Increased R&I/Cooperation (SEADE)
16	Africa - Europe Clusters of Research Excellence; led by ARUA and The Guild
17	African Research Initiative for Scientific Excellence – ARISE
18	HUBiquitous
19	PRIMA Programme
20	Henddu
21	EU-Africa PerMed
22	PROJECT GREEN INITIATIVE
23	TALKAM Human Rights Initiative
24	DIGILOGIC
25	LEAP-RE

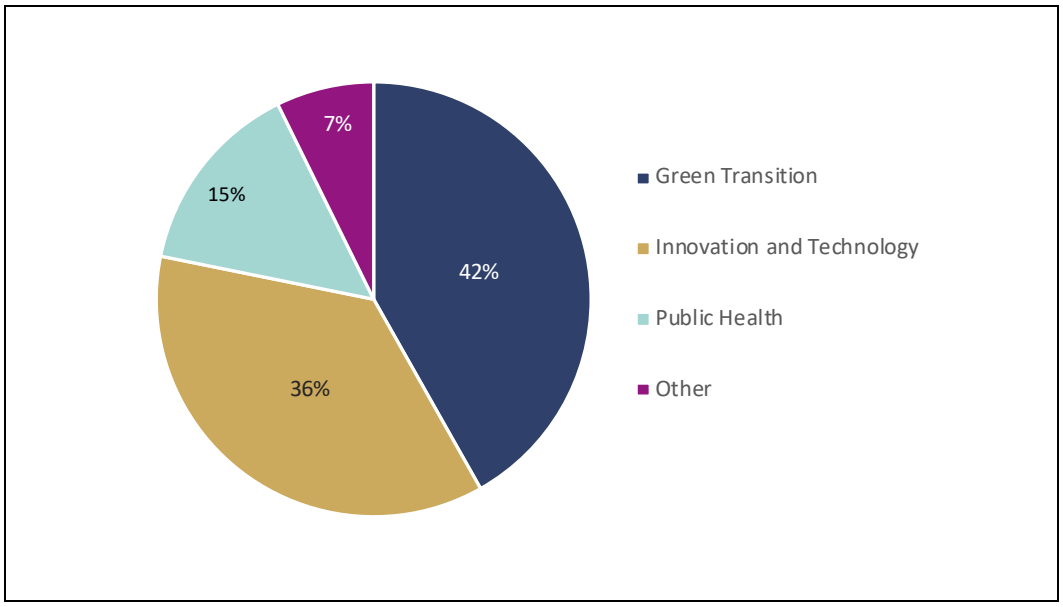
GSF, 2024. Data from survey of initiative coordinators.

Figure 55 Survey question: Is your initiative ongoing? (n=25)



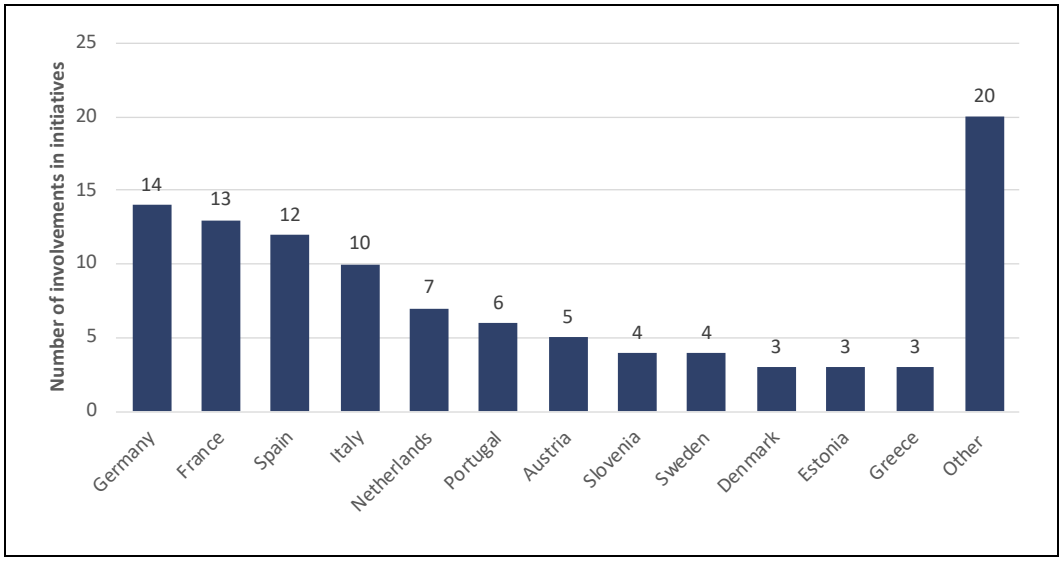
GSF, 2024. Data from survey of initiative coordinators.

Figure 56 Survey question: What field does your initiative work in? (n=25)



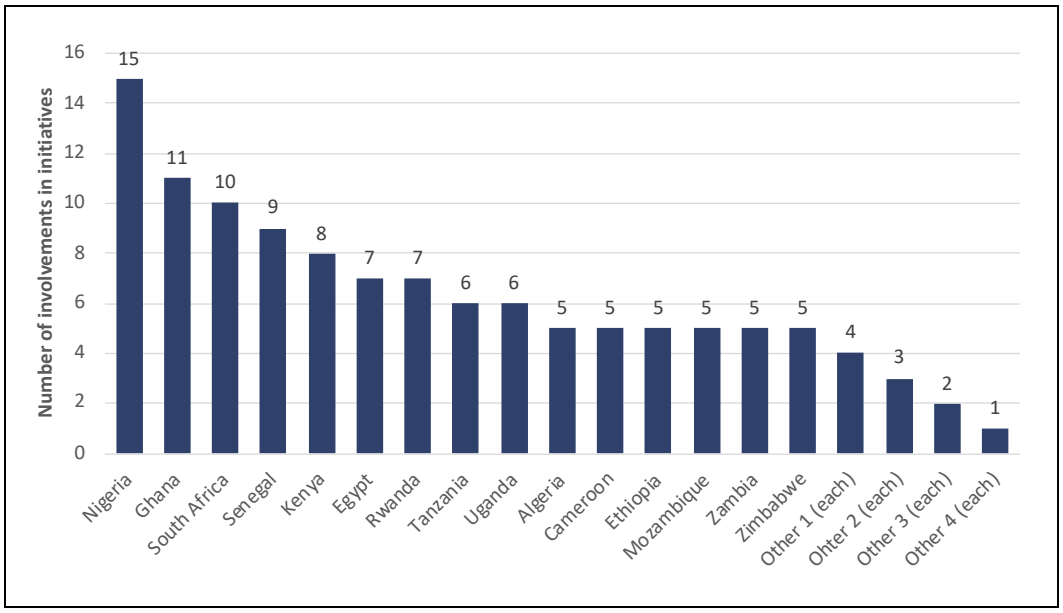
GSF, 2024. Data from survey of initiative coordinators.

Figure 57 Survey question: What EU countries are involved in the initiative? (n=22)



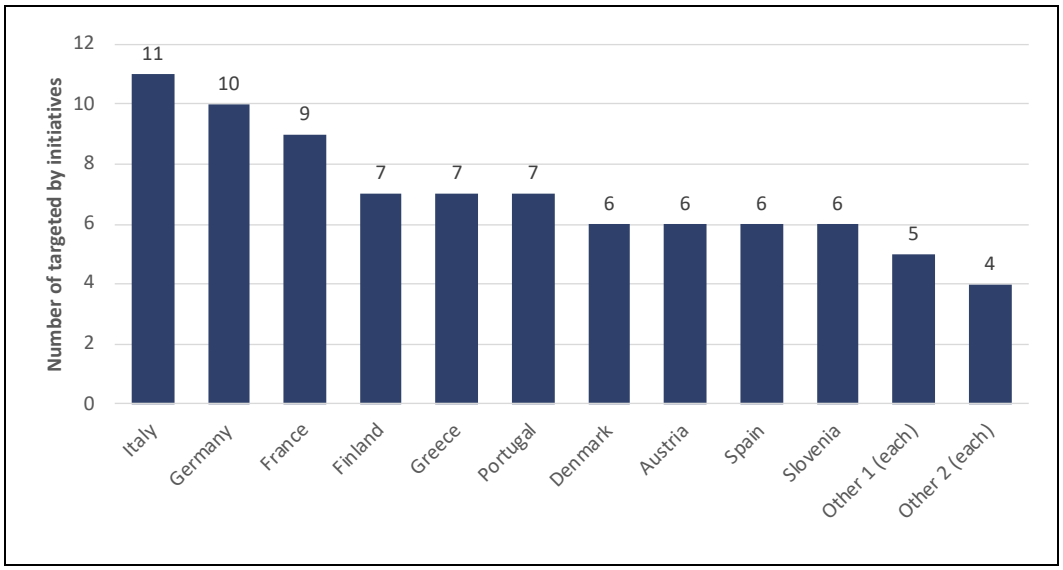
GSF, 2024. Data from survey of initiative coordinators. Other represents the sum of involvements of the following countries: Latvia, Lithuania, Czech Republic, Republic of Cyprus, Poland, Romania, Slovakia.

Figure 58 Survey question: What AU countries are involved in the initiative? (n=23)



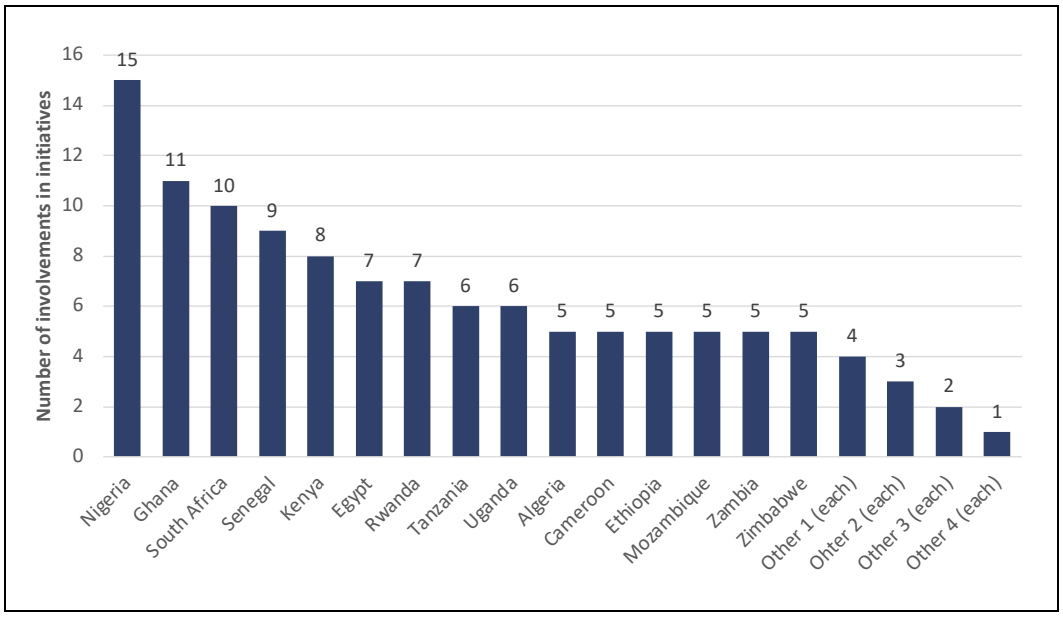
GSF, 2024. Data from survey of initiative coordinators. Other (each) represent a group of countries which were involved in the initiatives the respective number of times reflected on the top of the bar. Other 1: Benin, Botswana, Burkina Faso, Gambia, Malawi, Mauritius, Morocco, Niger, Somalia. Other 2: Angola, Mali, Namibia, Seychelles, Sierra Leone, Sudan, Togo, and Tunisia. Other 3: Burundi, Cape Verde, Comoros, Congo Republic, DR Congo, Equatorial Guinea, Eswatini, Gabon, Guinea, Ivory Coast, Lesotho, Liberia, and Madagascar. Other 4: Djibouti, Guinea-Bissau, Libya, and Mauritania.

Figure 59 Survey question: What AU countries are targeted in the initiative? (n=15)



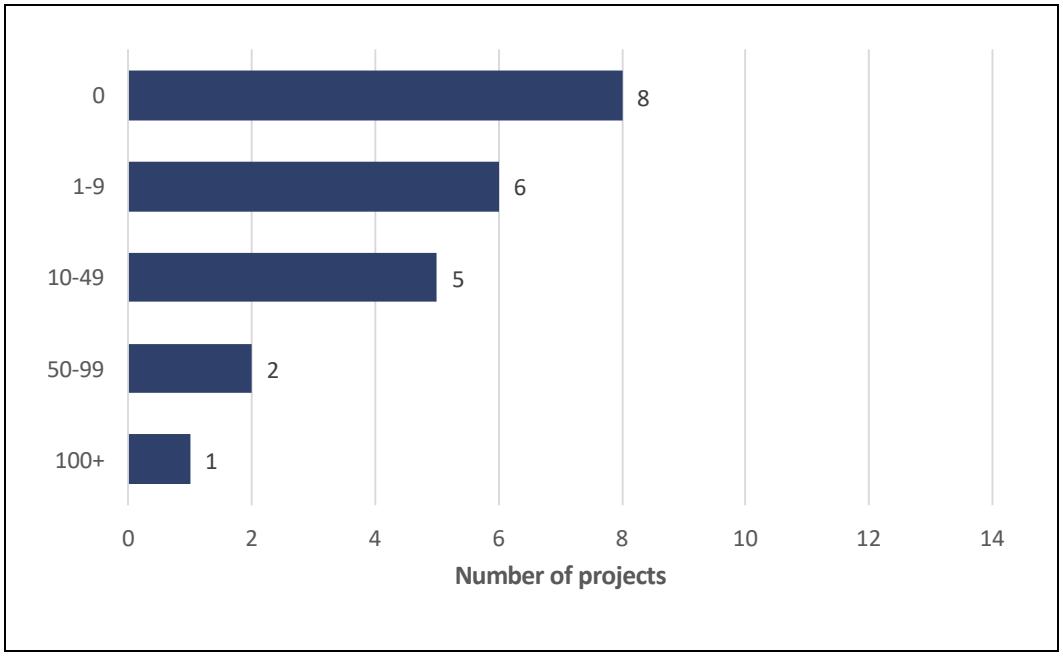
GSF, 2024. Data from survey of initiative coordinators. Other (each) represent a group of countries which were involved in the initiatives the respective number of times reflected on the top of the bar. Other 1: Hungary, Netherlands, Malta, Luxembourg, Sweden, Ireland, Estonia, Croatia, Bulgaria. Other 2: Latvia, Lithuania, Czech Republic, Republic of Cyprus, Poland, Romania, and Slovakia.

Figure 60 Survey question: What AU countries are targeted in the initiative? (n=23)



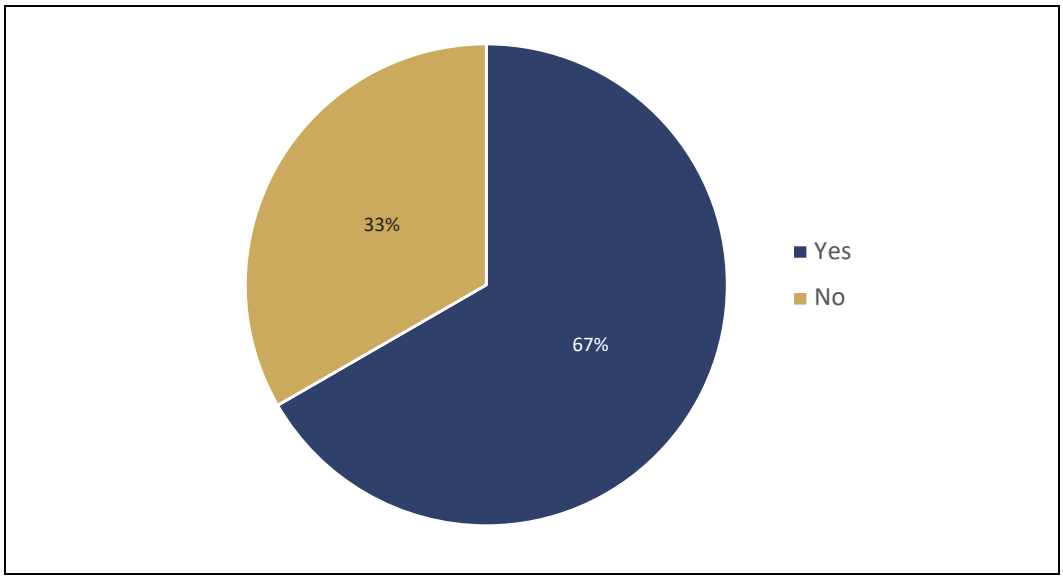
GSF, 2024. Data from survey of initiative coordinators. Other (each) represent a group of countries which were involved in the initiatives the respective number of times reflected on the top of the bar. Other 1: Botswana, Burundi, Cape Verde, Gambia, Malawi, Niger, Somalia, and Sudan. Other 2: Central African Republic, Chad, Comoros, Congo Republic, DR Congo, Ivory Coast, Madagascar, Mali, Morocco, Mozambique, and Tunisia. Other 3: Djibouti, Equatorial Guinea, Eritrea, Eswatini, Gabon, Guinea, Guinea-Bissau, Lesotho, Liberia, Mauritania, Mauritius, Namibia, Seychelles, Sierra Leone, South Sudan, and Togo. Other 4: Libya, Sahrawi Arab Democratic Republic, and São Tomé and Príncipe.

Figure 61 Survey question: How many projects are running under your initiative? (n=22)



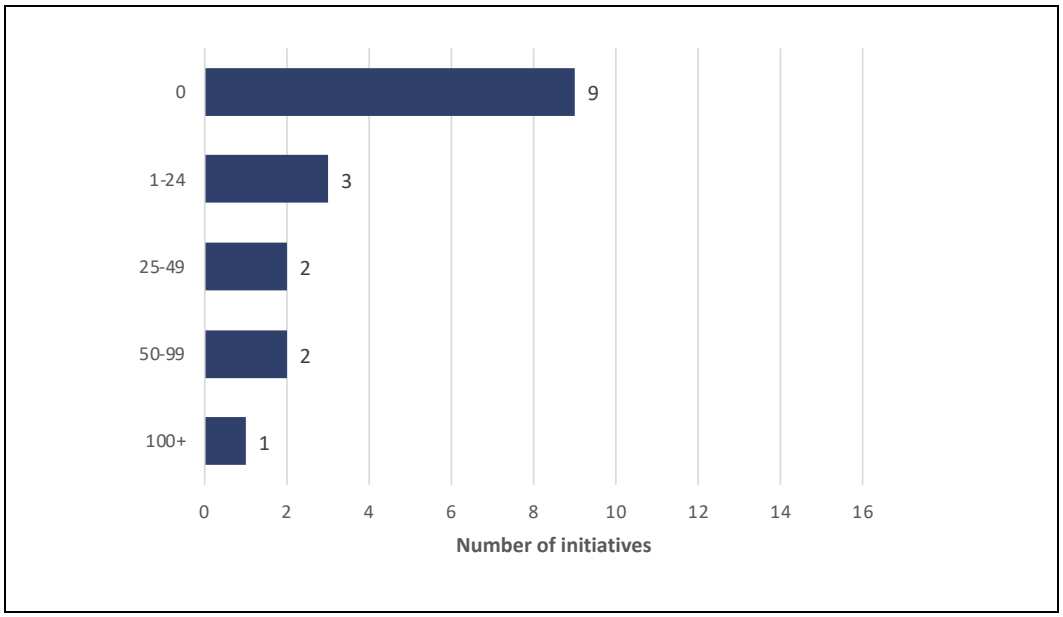
GSF, 2024. Data from survey of initiative coordinators.

Figure 62 Survey question: Does your initiative work with start-ups, incubators, or innovation hubs? (n=24)



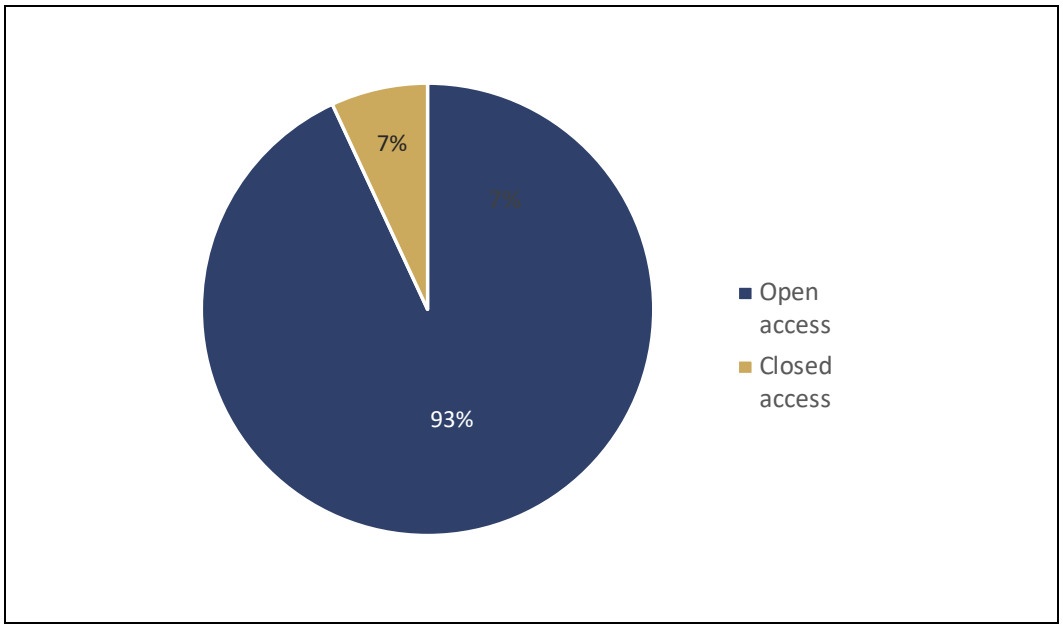
GSF, 2024. Data from survey of initiative coordinators.

Figure 63 Survey question: How many peer-reviewed publications on R&I have been published by members of the initiative? (n=17)



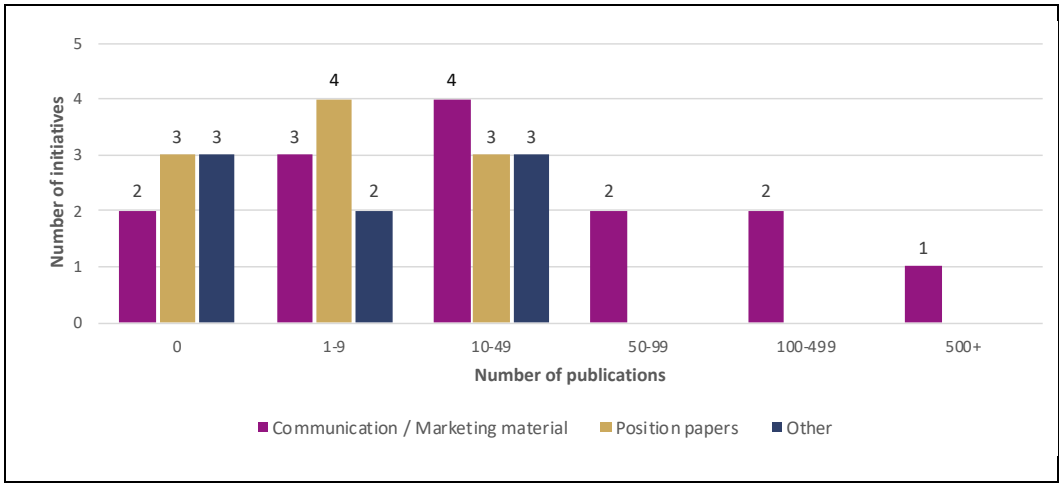
GSF, 2024. Data from survey of initiative coordinators.

Figure 64 Survey question: How many of those are open access? (n=17)



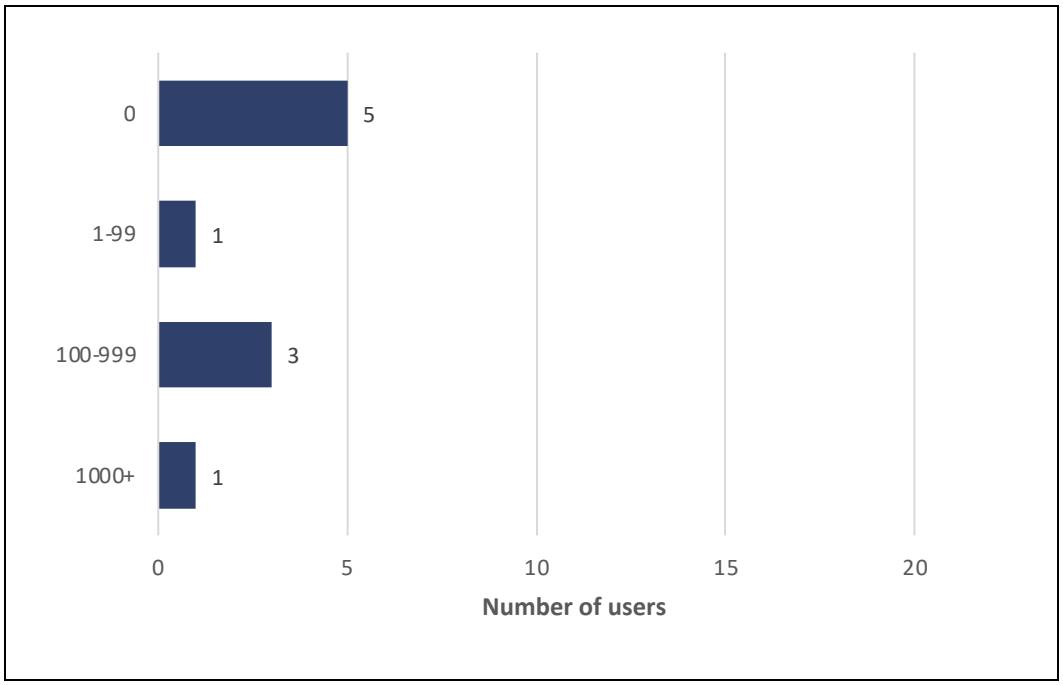
GSF, 2024. Data from survey of initiative coordinators. % calculated from number of open access publications from all publications published by initiatives. Total number of open access publications: 1224.

Figure 65 Survey question: How many of the following kinds of publications have been produced as part of your initiative to date? (n=13)



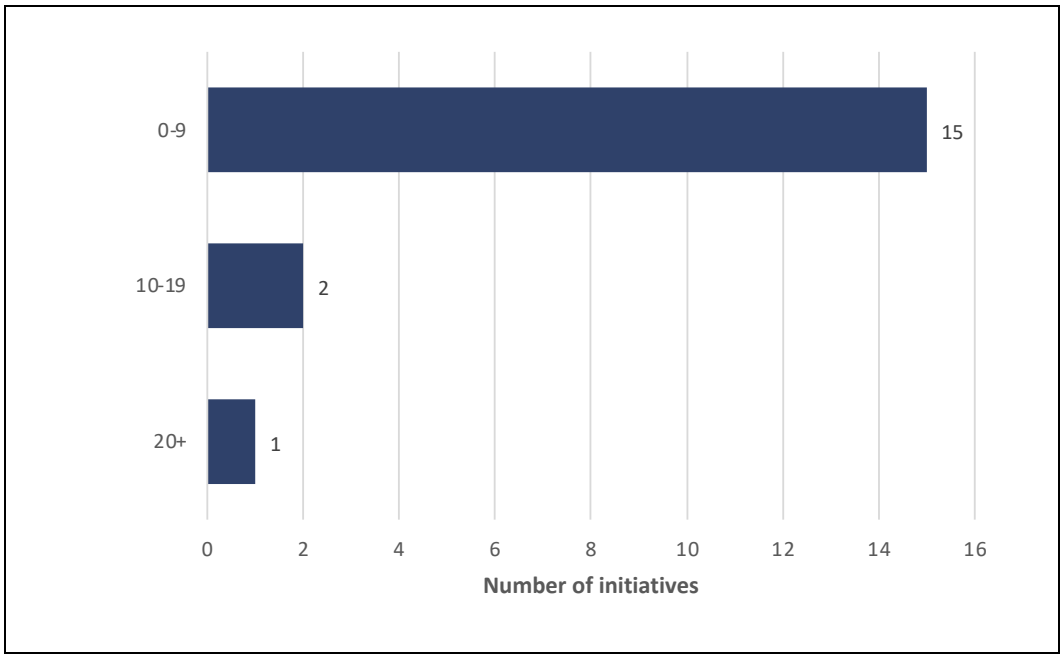
GSF, 2024. Data from survey of initiative coordinators. Total number of publications: 1319.

Figure 66 Survey question: Do you have any figures on the number of users of publications resulting from your initiative? (n=10)



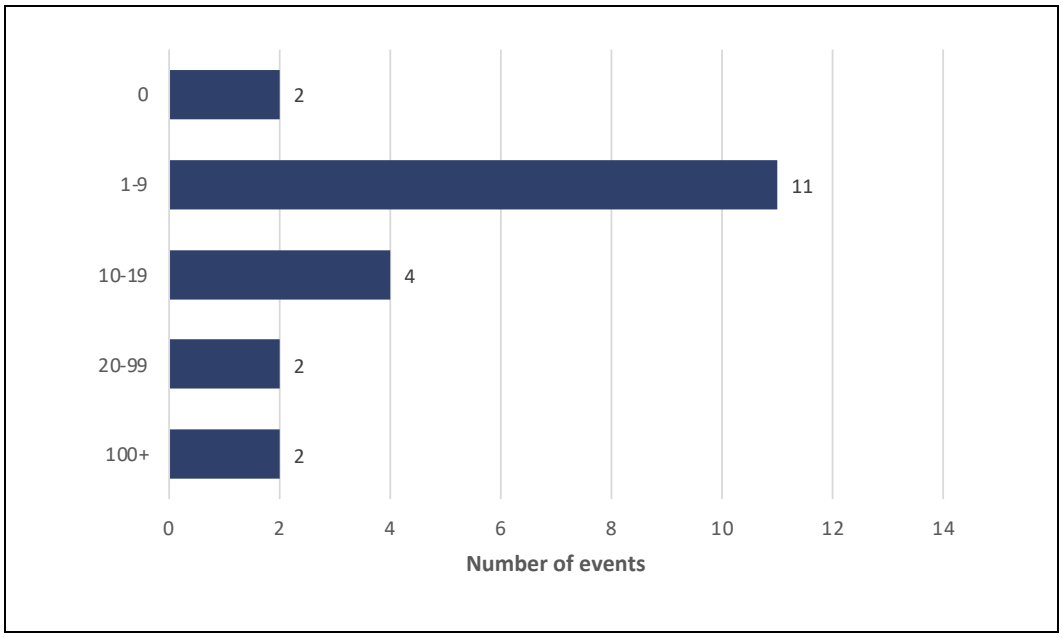
GSF, 2024. Data from survey of initiative coordinators. Total number of users of publications: 2043

Figure 67 Survey question: How many policy changes has your initiative contributed to? (n=18)



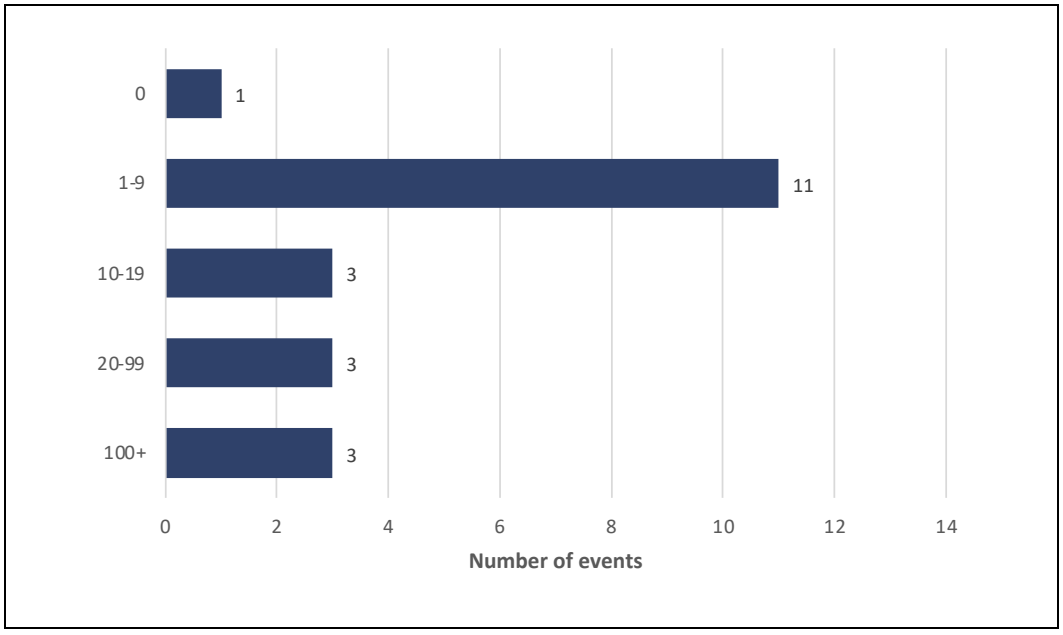
GSF, 2024. Data from survey of initiative coordinators.

Figure 68 Survey question: How many events have been organised under your initiative that brought together policy makers, with an aim to inform policy making? (n=22)



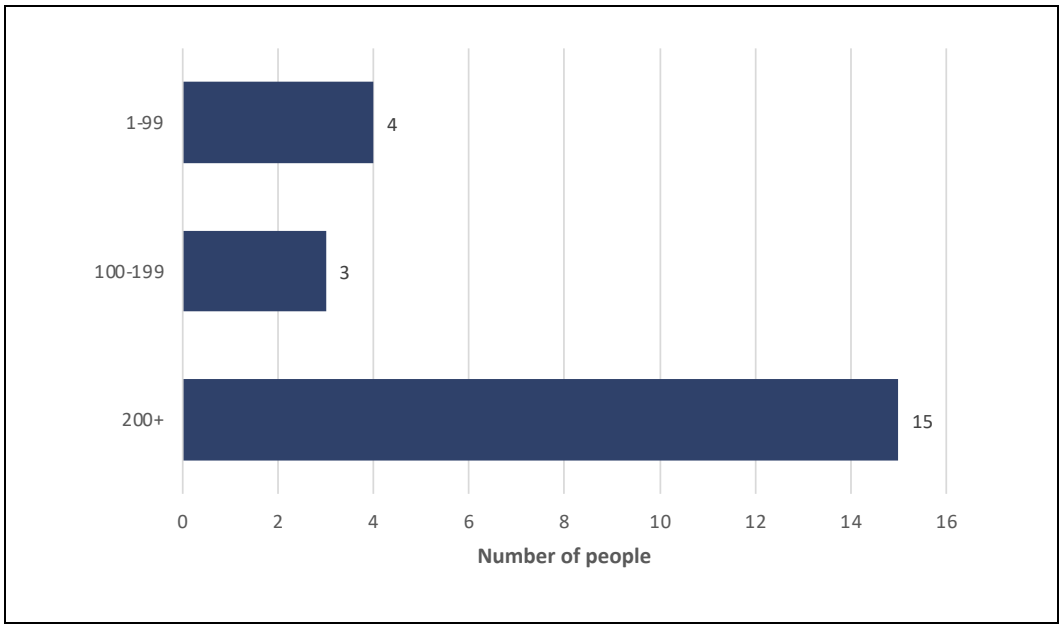
GSF, 2024. Data from survey of initiative coordinators. Footnote: This can include roundtables, stakeholder engagement meetings, etc. where at least one policy making body is represented (ministries, regulators, local governments, etc.)

Figure 69 Survey question: How many events have been organised under your initiative that brought together representatives from one or several of these sectors: public sector, private sector, civil society to promote your initiative? (n=21)



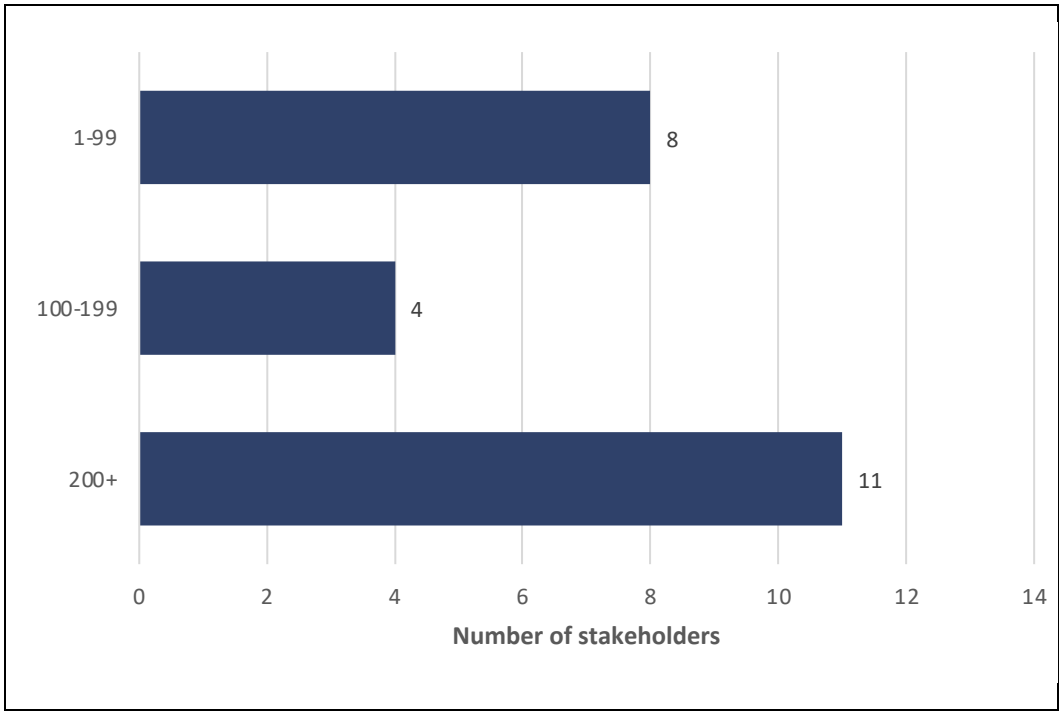
GSF, 2024. Data from survey of initiative coordinators.

Figure 70 Survey question: How many people in total attended all of these outreach events combined? (n=22)



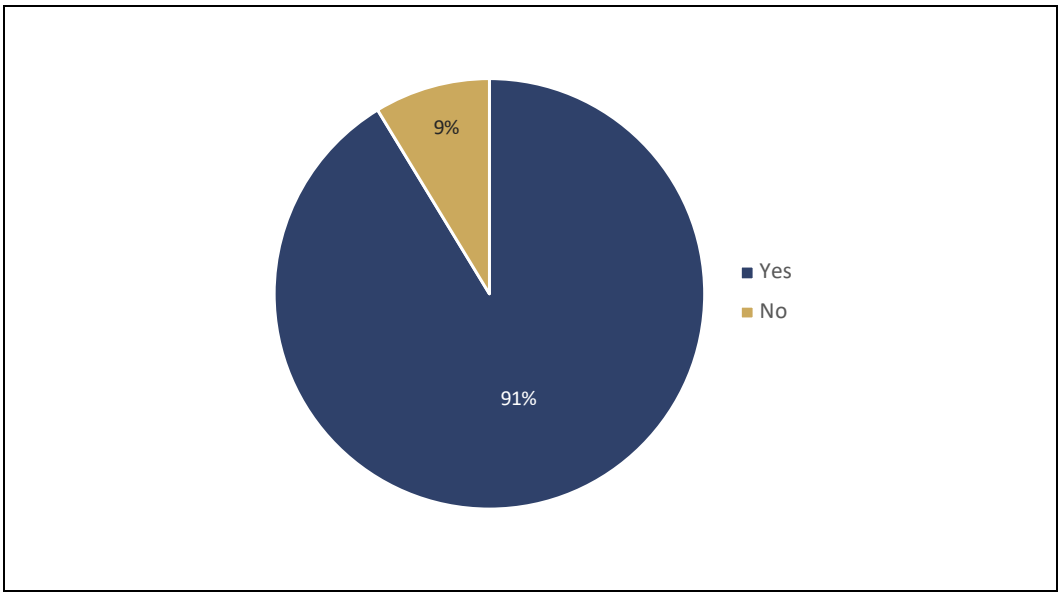
GSF, 2024. Data from survey of initiative coordinators.

Figure 71 Survey question: Please provide an estimate of the number of African and European stakeholders that have been brought together for the first time thanks to your initiative. This addresses any people brought together through activities such as events, meetings, etc. (n=25)



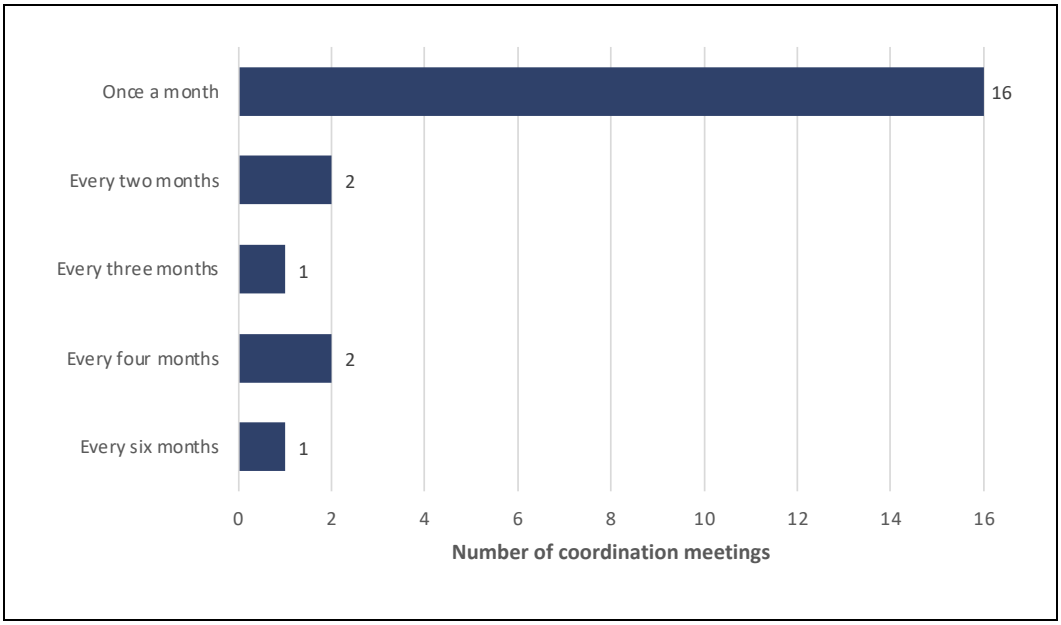
GSF, 2024. Data from survey of initiative coordinators.

Figure 72 Survey question: Did the activities of the initiative (e.g. events and meetings) lead to new partnerships? (n=23)



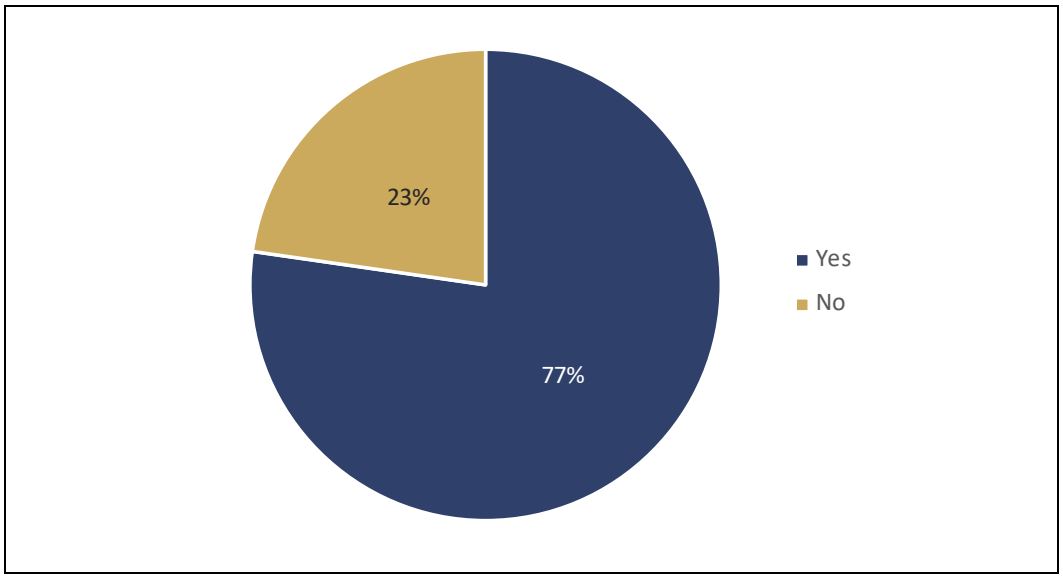
GSF, 2024. Data from survey of initiative coordinators.

Figure 73 Survey question: How regularly do members of the initiatives meet to coordinate activities? (n=22)



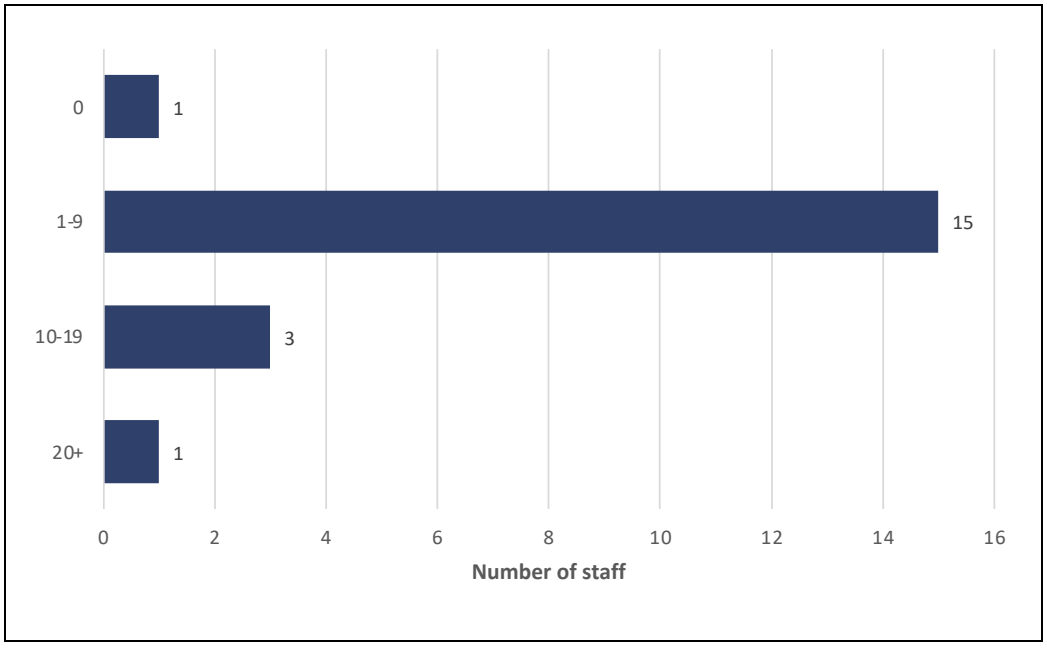
GSF, 2024. Data from survey of initiative coordinators.

Figure 74 Survey question: Does your initiative have a dedicated office/room? (n=22)



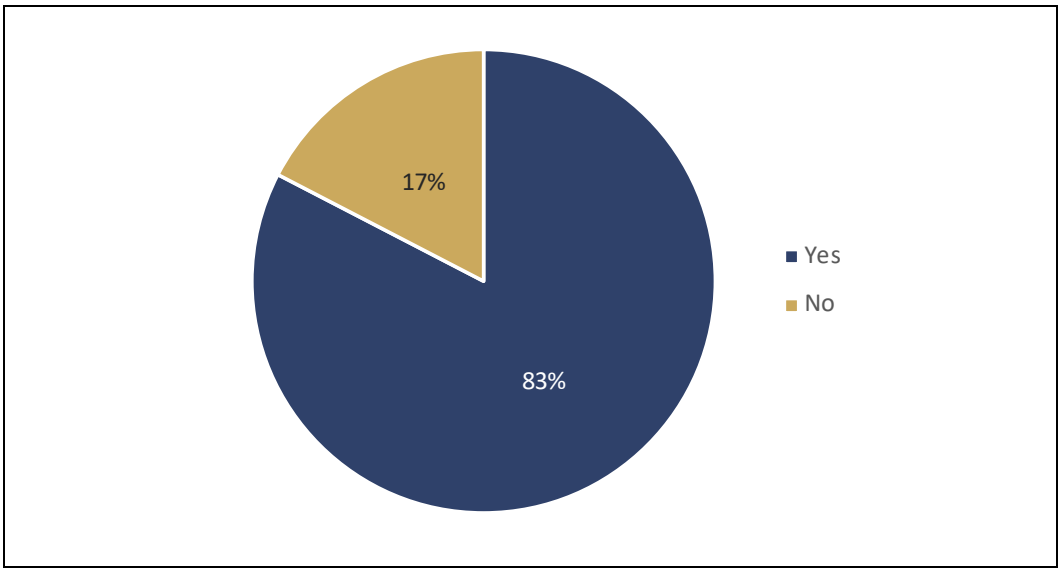
GSF 2024. Data from survey of initiative coordinators.

Figure 75 Survey question: How many staff work on coordination/administration of the initiative (full-time equivalents)? (n=20)



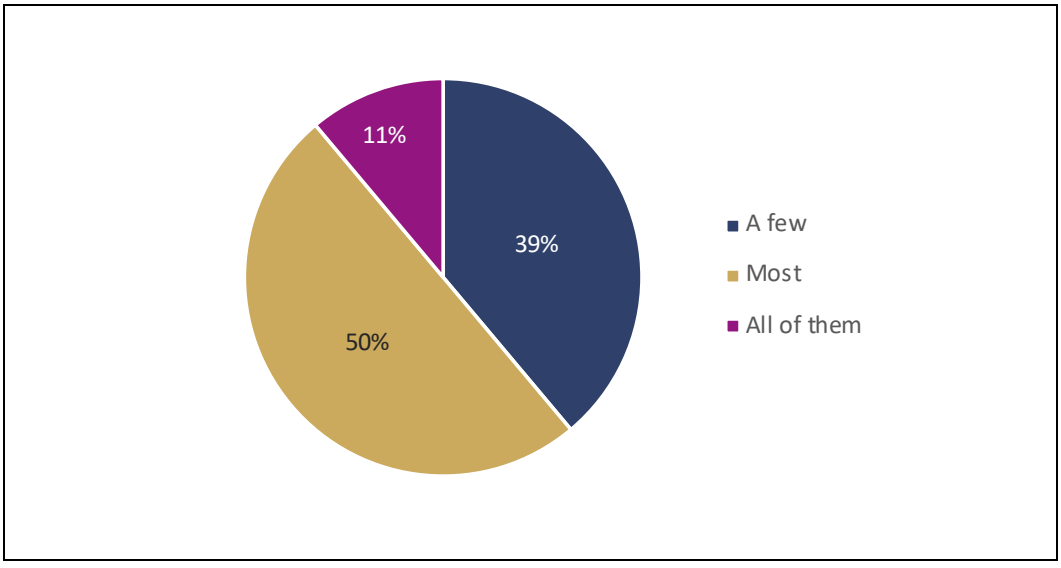
GSF, 2024. Data from survey of initiative coordinators.

Figure 76 Survey question: Does your initiative have and monitoring and evaluation framework? (n=23)



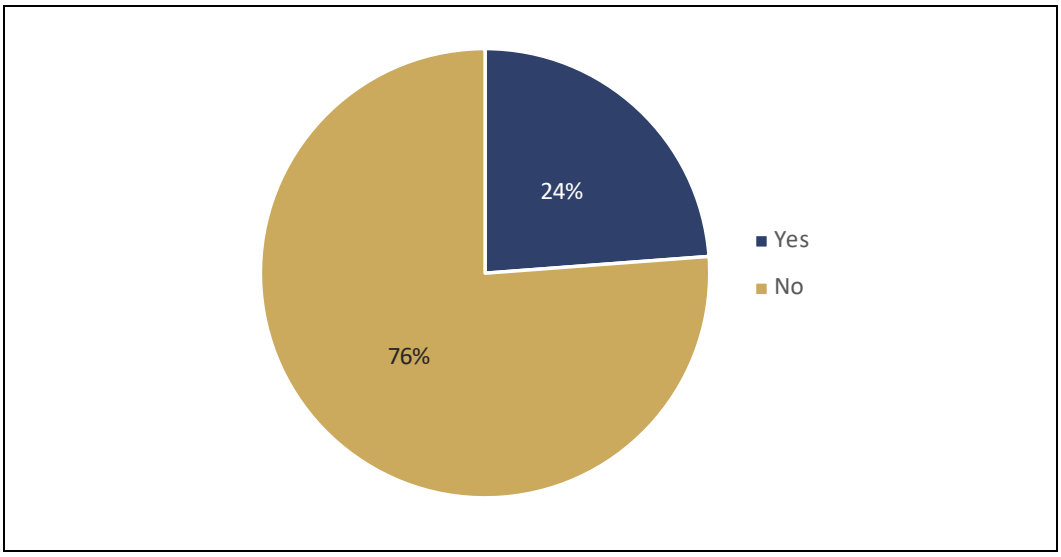
GSF, 2024. Data from survey of initiative coordinators.

Figure 77 Survey question: Does this include a set of targets/key performance indicators or similar, and how many of these have already been achieved as of now? (n=18)



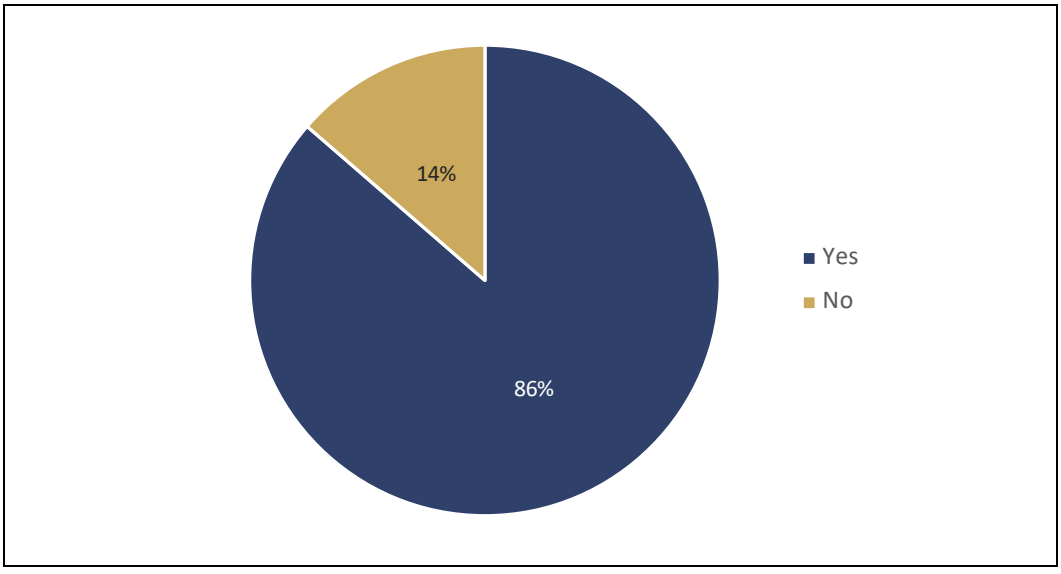
GSF, 2024. Data from survey of initiative coordinators. To question “Does this include a set of targets/key performance indicators or similar?” 19 respondents (n=19) have answered “Yes”. 18 of those respondents answered to the question “How many of these have already been achieved as of now?” (see figure).

Figure 78 Survey question: Do you have research outputs and innovations that are measured with a Technology Readiness Level (TRL)? (n=21)



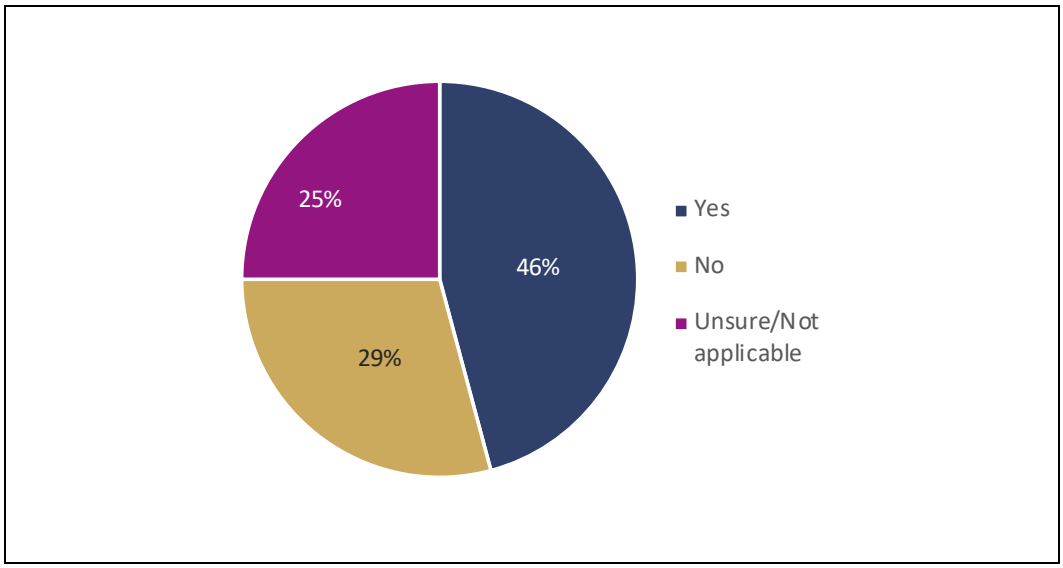
GSF, 2024. Data from survey of initiative coordinators. To the follow-up question "How many of the research outputs and innovation are measured with a TRL of higher or equal to 5?" 1 respondent answered "All of them" and 3 respondents answered "More than half" (n=4).

Figure 79 Survey question: Does your initiative include an advisory board or similar body? (n=22)



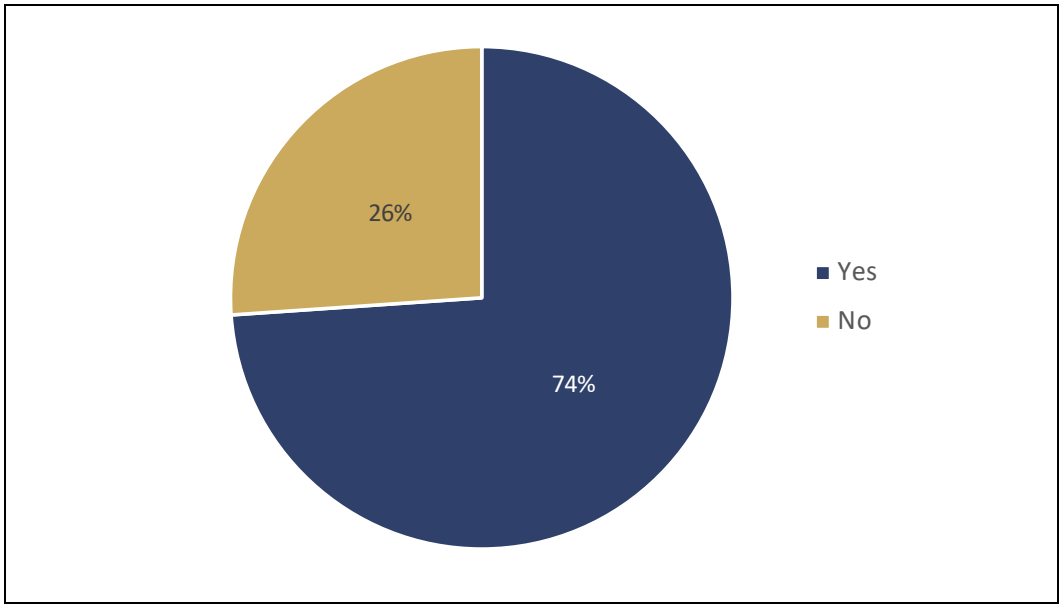
GSF, 2024. Data from survey of initiative coordinators.

Figure 80 Survey question: Do you have an official document/policy/strategy that addresses the topic of capacity building in the initiative? (n=24)



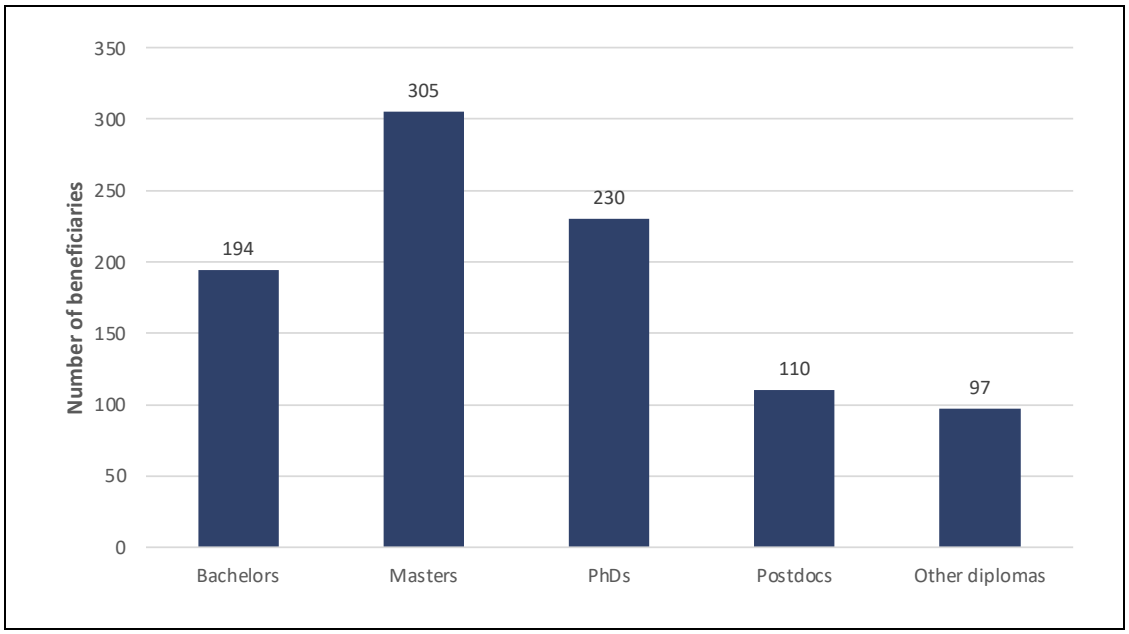
GSF, 2024. Data from survey of initiative coordinators.

Figure 81 Survey question: Does your initiative have an explicit strategy for ensuring gender equality? (n=23)



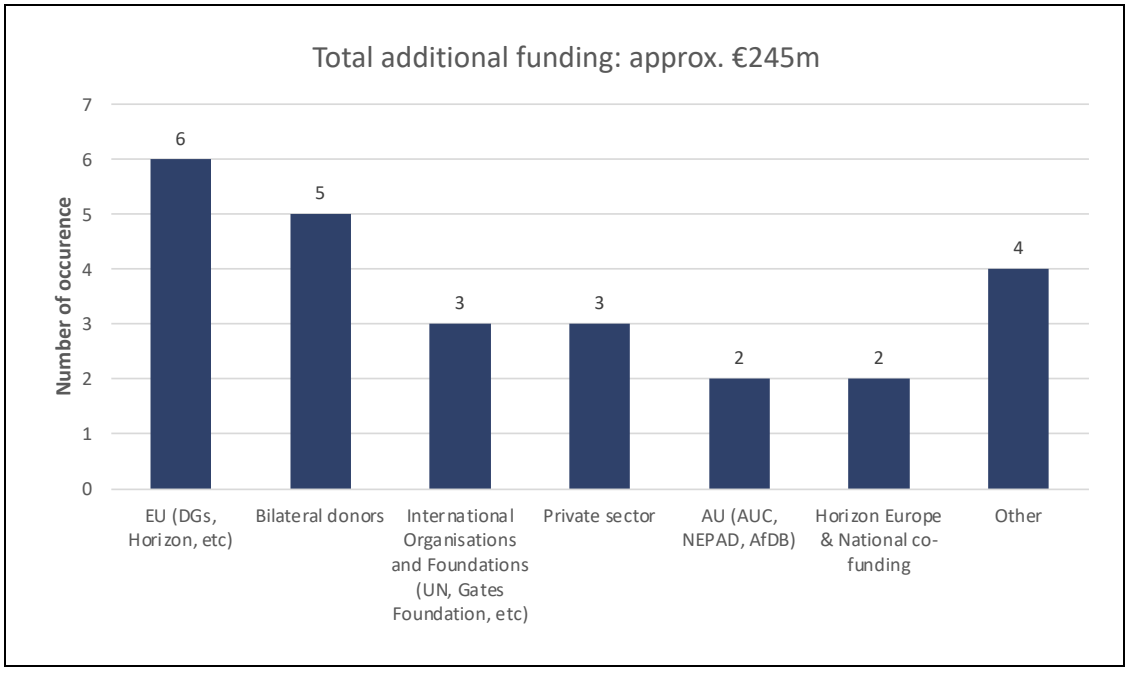
GSF, 2024. Data from survey of initiative coordinators.

Figure 82 Survey question: How many beneficiaries have attained formal academic qualifications in part thanks to your initiative? (n=7)



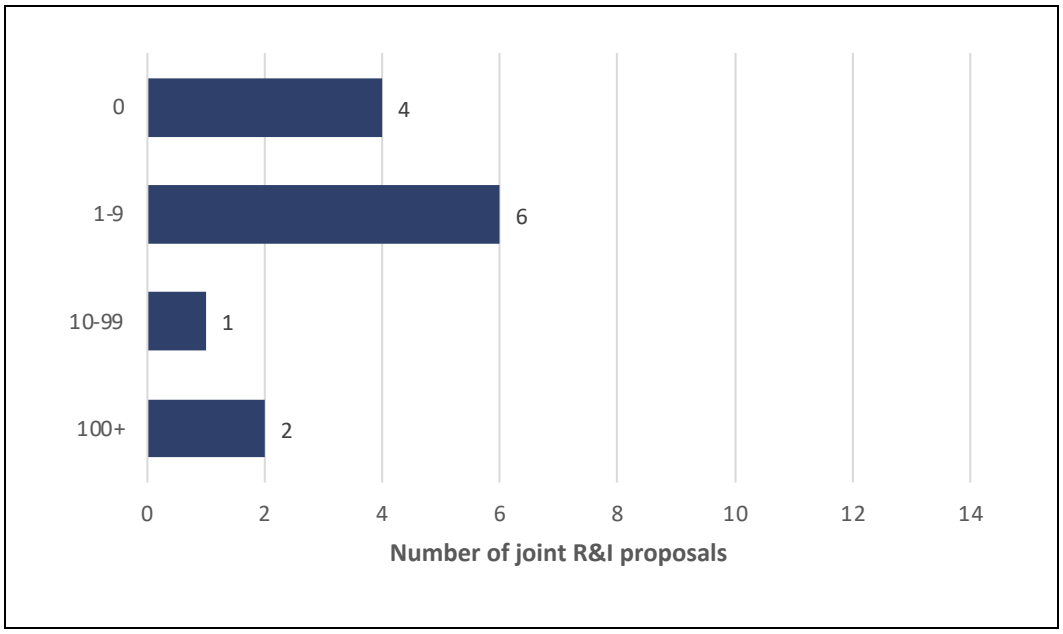
GSF, 2024. Data from survey of initiative coordinators.

Figure 83 Survey question: How much additional funding has been secured since the launch of the initiative? (n=14) Where has the additional funding come from? (n=25)



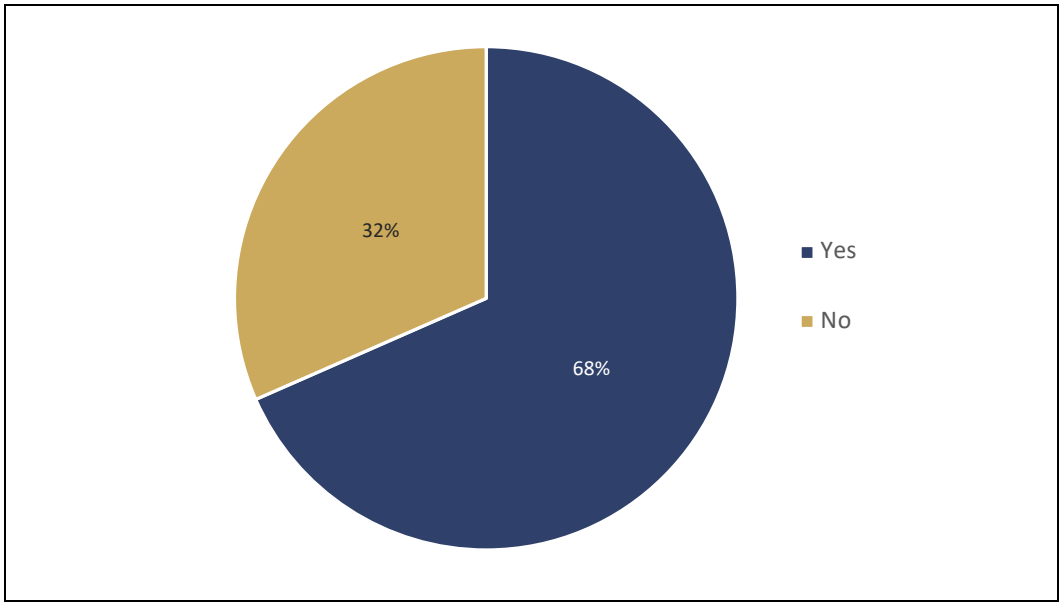
GSF, 2024. Data from survey of initiative coordinators.

Figure 84 Survey question: How many joint R&I proposals directly resulted from your initiative? (n=13)



GSF, 2024. Data from survey of initiative coordinators. Total number of joint R&I proposals: 866.

Figure 85 Survey question: [If your initiative has an advisory board or similar body], does the advisory board (or similar) include at least one member from each continent? (n=19)



GSF, 2024. Data from survey of initiative coordinators.

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This first-year Monitoring, Evaluation, and Learning (MEL) Report assesses the implementation of the AU–EU Innovation Agenda (2023–2033), adopted in July 2023 following the AU-EU Ministerial on Science, Technology and Innovation. The Agenda promotes translating Research and Innovation (R&I) into real-world impact, products, services, businesses, and jobs, across Africa and Europe. The report tracks key indicators aligned with its four objectives: 1) Make it real, 2) Generate impact by design, 3) Strengthen people, communities, and institutions, and 4) Learn, monitor, and scale. It draws on both primary (surveys and interviews) and secondary data, offering baseline insights ahead of ongoing annual assessments..

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