GLOBAL RESEARCH COUNCIL

Global Landscape of Multilateral Funding Mechanisms

By Multilateral Engagement Working Group
The Global Research Council
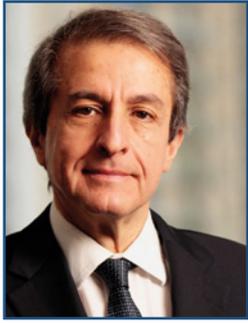
September 2025

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INTRODUCTORY REMARKS
by Dr. Alejandro Adem
Chair, Governing Board of the Global Research Council

It is with great pleasure that I introduce the Global Landscape of Multilateral Funding Mechanisms report, a timely and critical report by the Multilateral Engagement Working Group (MLE-WG) of the Global Research Council (GRC). This study represents a significant step forward in our collective efforts to understand, strengthen, and reimagine multilateral research collaboration across regions and disciplines.

As global challenges grow increasingly complex and interconnected, the need for inclusive, equitable, and resilient multilateral engagements has never been more urgent. This study not only maps the current landscape of multilateral funding mechanisms but also highlights systemic disparities, particularly in leadership and decision-making between the Global North and South. It underscores the importance of co-leadership, capacity building, and the development of flexible frameworks that can accommodate diverse priorities and administrative realities.

I commend the MLE-WG for its rigorous analysis and thoughtful recommendations. The report provides a foundation for the GRC to play a more active role in facilitating multilateral engagements by promoting shared values, reducing administrative burdens, and fostering mechanisms that reflect the needs of all regions.

I would also like to extend my appreciation to all participating agencies and individuals whose contributions made this study possible. Special recognition goes to previous and current co-chairs of the group for their leadership.

As we look ahead to the next phase of the MLE-WG's work, I am confident that this report will serve as a catalyst for meaningful change. Let us continue to build bridges across borders, disciplines, and communities to advance science for the benefit of all.

Regards,
Prof. Alejandro Adem, FRSC
President, Natural Sciences and Engineering Research Council of Canada
Chair of the Executive Board of GRC

INTRODUCTORY REMARKS FROM THE CO-CHAIRS OF THE MULTILATERAL ENGAGEMENT WORKING GROUP

We are pleased to present the report on the Global Landscape of Multilateral Funding Mechanisms, the first milestone of the Multilateral Engagement Working Group (MLE-WG), established under the Global Research Council (GRC) in 2023. This report marks the culmination of two years of collaborative effort, dialogue, and analysis aimed at understanding and mapping the multilateral research funding mechanisms worldwide.

This desktop study was initiated in response to the GRC's commitment to foster inclusive and effective multilateral collaboration. It examines the current landscape of multilateral funding mechanisms, identifies systemic challenges, and highlights opportunities for more equitable and impactful engagement. Drawing on 45 survey responses from 18 agencies, the report provides important insights into regional disparities in leadership, funding models, and administrative requirements.

This study also lays the foundation for the next phase of the MLE-WG's work: defining the role the GRC in facilitating Multilateral Engagements (MLE); identifying concrete and actionable steps; and developing an implementation roadmap. Through this process, the GRC seeks to advance inclusive, resilient, and responsible MLEs that can evolve into more effective platforms for international collaboration, grounded in equity, transparency, and shared purpose. The collaborative efforts of the MLE-WG members have ensured that the study reflects the diverse perspectives and experiences of research funders across regions. We extend our sincere gratitude to all participating agencies and individuals who generously contributed their time, expertise, and perspectives. Their input has been instrumental in shaping this report and setting the stage for future initiatives. We also acknowledge the thoughtful discussions, reviews, and feedback from the members that helped refine the findings presented herein.

Special thanks are extended to Ms Moana Minami Sato and Ms Felina Wittke, who have both served as the group's secretariat and made valuable contributions to the activities of the MLE. Their dedication and support have been essential to the success of the group. While both played an important role, Ms Sato's outstanding leadership in preparing this study report was particularly critical; her unwavering commitment and tireless efforts were central to ensuring its timely and successful completion. We are sincerely grateful to both Ms Sato and Ms Wittke for their dedication, with special appreciation to Ms Sato for her exceptional contribution to this report.

As co-chairs, we believe this report is not only a reflection of where we stand today but also a call to action. It invites the global research community to build on these insights, strengthen partnerships, and co-create mechanisms that are inclusive, transparent, and responsive to the needs of all regions.

We look forward to continued collaboration and to making further progress toward a more balanced, equitable, and resilient global research ecosystem.

2023–2025 Co-Chairs of the MLE-WG

Mr. Osamu Kobayashi
Director
Department of International Affairs
Japan Science and Technology Agency (JST)

Dr. Prudence Makhura
Executive Director
International Grants and Partnerships
National Research Foundation of South Africa (NRF)

Current Co-Chairs of the MLE-WG

Dr. Sharapiya Kakimova
Head
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Consultant
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King Abdulaziz City for Science and Technology of Saudi Arabia
(KACST)

INTRODUCTION

During the 10th GRC Annual Meeting in Panama, and its subsequent Regional Meetings in 2022, the participants considered the GRC's role in advocating for, brokering or providing mechanisms and tools for multilateral engagements (MLE).

There was a strong show of interest from the GRC participants to find ways to share information on MLEs and ways to facilitate them more widely under the umbrella of the GRC. In response, the Multilateral Engagement Working Group (MLE-WG) was established in June 2023 with the objectives of:
- Mapping the landscape of available multilateral funding mechanisms/programmes globally;
- Scoping possible roles for the GRC in facilitating multilateral engagement; and
- Developing options for respective implementations and a roadmap to achieve them.

As a first step to the achievement of these objectives, the MLE-WG decided to undertake a 'desktop survey' to compile existing multilateral engagement activities globally.

Background: Purpose and scope of the desktop survey

As a first step to the achievement of its objectives, the MLE-WG decided to undertake a desktop survey to compile existing multilateral engagement activities globally. The purpose of this survey was to understand comprehensively the MLEs currently undertaken by GRC participating organisations. It also aimed to uncover universal values, distinct mechanisms, and perspectives that can guide the development and implementation of future MLEs. This is useful not only for GRC participants, but also for non-GRC funders, and science, technology, and innovation-related stakeholders who are interested in MLEs. The research was conducted in the form of an online survey that was shared with all the MLE-WG members for completion where the respondents were asked a series of questions related to MLEs and instructed to apply these questions to, at most, three multilateral schemes they were involved in. Respondents did not need to be the lead in the scheme to include it as an example (see Annex I for the survey questions).

For the purpose of the analytical approach adopted in this report, the terms 'Global North' and 'Global South' are used. This report presents data compiled from the online survey[1] with 45 responses received, which are used in this report to illustrate current trends in MLEs. However, the report should not be considered a source of comprehensive statistical data nor is it a statistically reliable survey. Nevertheless, it is expected that the findings will be indicative of underlying trends and systemic characteristics that can be further scrutinised.

The analysis below is compiled in line with the questions of the online survey and points discussed within MLE WG meetings. Therefore, each section heading represents an online survey question and may include related discussion points.

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1   Distributed twice, from 03 August to 30 September 2023, and 19 February to 04 March 2024

ACRONYMS

EU	European Union
GRC	Global Research Council
HR	Human Resources
MENA	Middle East and North Africa Region
MLE-WG	Multilateral Engagement Working Group
R&D	Research and Development
SDGs	Sustainable Development Goals
SSH	Social Sciences and Humanities
UN	United Nations

DEFINITIONS

Bilateral Engagement: Joint research initiatives that involve one national research funding agency and another stakeholder who contribute either financially or effort wise.

Capability: Initiatives focused on developing expertise, technical skills, and practical know-how.

Capacity Building: Efforts aimed at enhancing skills, infrastructure, systems, and resources.

Global North: Countries listed in the United Nation's report World Economic Situation and Prospects 2024 (United Nations, 2024) as developed economies (Table A, p.135)

Global South: Countries listed in the United Nation's report World Economic Situation and Prospects 2024 (United Nations, 2024) as developing economies (Table C, p.136) and includes economies in transition (Table B, p.135).

Multilateral Engagement (MLE): Joint research initiatives that involve at least one national research funding agency and two or more other stakeholders who each contribute either financially or effort wise. Stakeholders can be comprised of any entities from academia, industry, government, the private sector, or even citizens. They can be located domestically or internationally, but for this survey we focused on those that are international in nature.

Primary Lead: An agency responsible for overseeing MLE schemes, typically acting as its coordinator or secretariat.

Sustainability: The ability to meet the needs of the present without compromising the ability of future generations to meet their own needs. It involves balancing environmental, social, and economic considerations to ensure long-term health and well-being for people and the planet.

ABSTRACT

This report presents the findings of a desktop study conducted by the Multilateral Engagement Working Group (MLE-WG) and its related discussions under the auspices of the Global Research Council (GRC). The study aims to explore the landscape of multilateral funding mechanisms for scientific research. It was initiated to develop insight on current multilateral research engagements (MLE), identify challenges, trends, and serve as a resource to help stakeholders better understand the fundamentals of MLEs. The study primarily relied on data collected via an online survey administered between August 2023 and March 2024, yielding 45 responses from the MLE-WG. In addition, discussions were conducted using the initial findings of the desktop study in order to better understand the challenges and trends in the MLE initiatives.

One of the key findings of the study indicates a notable regional disparity in leadership, with the majority of MLEs being led by Global North funders, comprising over 80% of the total responses, where the Global South agencies are primarily listed as participants in these schemes. This power imbalance can skew MLEs decision-making and not reflect interest of all involved actors.

The study identified significant research objectives addressed by MLEs that include global challenges, regional challenges, and promotion of research excellence. However, the study also revealed conflicts in the national interests of involved countries, where some may prioritize domestic agendas over collective goals. Of particular note, respondents from the Global South underscored the importance of local impacts such as capacity building and regional issues such as water security. In contrast, participants from the Global North emphasised broader goals, such as science diplomacy. The MLE group discussions had also underlined the importance of responsible international cooperation, science diplomacy and open science as they are essential pillars for effective multilateral engagement because they foster trust, transparency, and shared progress across borders.

The survey also identified that multilateral engagement—vital for tackling global challenges—faces a range of complex and evolving obstacles, including inconsistent funding mechanisms, differing administrative structures, and a lack of standardised processes, all of which impede effective collaboration. These challenges are particularly pronounced in the management of cross-border projects, where disparities in funding cycles, evaluation criteria, and application systems further exacerbate operational difficulties. Additionally, respondents emphasised the necessity for more coherent organisational frameworks, with many recommending the establishment of centralised secretariats to mitigate administrative workload and enhance coordination.

Based on the findings of this survey, for MLEs to achieve greater effectiveness, there is a necessity to create a flexible framework with 'standardised' elements, encourage co-leadership models that actively involve both Global North and South partners, and develop frameworks aimed at simplifying administrative processes.

Addressing these issues has the potential to enhance the inclusivity, efficiency, and impact of MLEs, thereby contributing to the advancement of global scientific cooperation.

In this context, the GRC, as an organisation that convenes research funders from around the world, holds a unique opportunity to address these challenges by developing mechanisms for MLEs that reflect the diverse interests of stakeholders across regions. Through the sharing of experiences and collaborative action, the GRC can promote transparency, inclusiveness, and accessibility, and lay the foundation for responsible international cooperation that is resilient and sustainable regardless of shifting political agendas.

ANALYSIS OF GRC MEMBERS´ MULTILATERAL ENGAGEMENTS

Trends in Regional Participation and Leadership of MLEs

The report is based on the online survey conducted between MLE-WG members where each had to respond several questions (See Annex I) related to the agency itself and MLE initiative/mechanisms they are involved in.
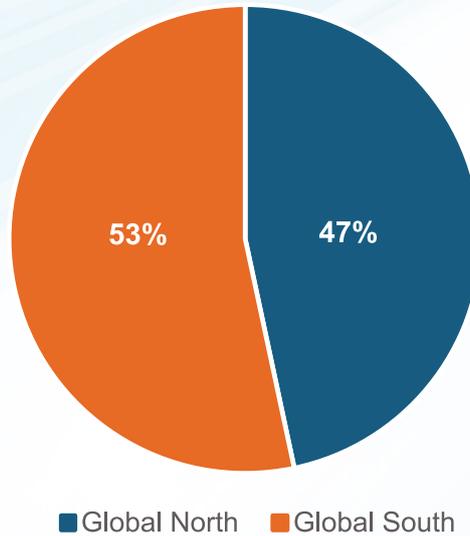

Figure 1: Regional Distribution of the Respondents Split by Global South and North

For the survey, a total of 45 responses were received from 18 agencies (See Annex V). There are more responses than agencies as respondents could submit one to three initiatives. In addition, being multilateral in nature, some of the initiatives were mentioned by more than one respondent which resulted in 40 unique initiatives out of 45 responses (See Annex II). The regional representation of responses was almost evenly split with a slight majority of 24 (53%) responses from the Global South to 21 (47%) from the Global North (Figure 1).

Figure 2 below shows that over 80% (36 out of 45) of the schemes reported were led by agencies from the Global North. In this study, the agency that led the MLEs—tasked with overseeing them and usually serving as the coordinator or secretariat—was classified as the 'Primary Lead'.
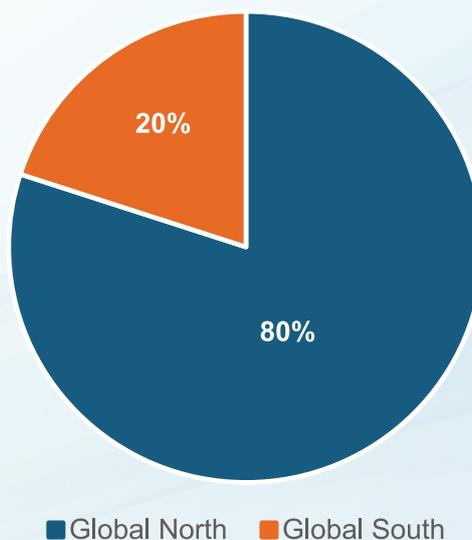

Figure 2: Regional Distribution of the Agencies Leading the Reported MLEs, Split by Global South and Global North

The findings also showed that out of 45 responses collected, 23 MLEs were reported by their Primary Leads with the following distribution by regions:

Table 1: Regional distribution of the lead agencies of the initiatives reported

Region	Number of Primary Leads (Global North/Global South)	% of the Total Primary Leads Reported
Americas	7 (4/3)	30 %
Europe	6 (6/0)	26 %
Asia-Pacific	5 (4/1)	22 %
MENA	3 (0/3)	13 %
Sub-Saharan Africa	2 (0/2)	9 %
TOTAL	**23 (14/9)**	**100%**

The table above demonstrates that agencies from all regions play leading roles in multilateral initiatives. However, in terms of the Global North and Global South divide, over 60% (14/23) of the initiatives reported were led by Global North agencies.

Out of all responses received, two-thirds of the respondents from the Global North were the Primary Leads to the MLEs they reported (Figure 3). Conversely, for respondents from the Global South, the majority of responses came from participants rather than Primary Leads (Figure 4). Based on Figures 3 and 4, the data suggests that most of the multilateral initiatives are designed and led by agencies from the Global North.
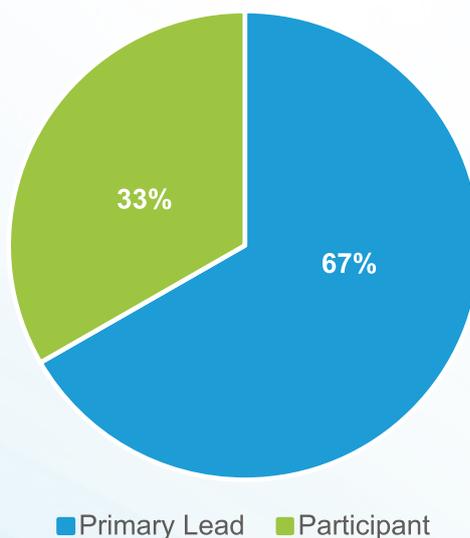

■Primary Lead ■Participant

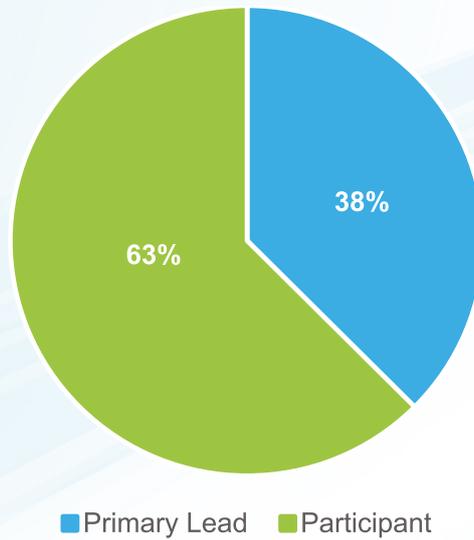*Figure 3: Role of Respondents in the MLEs Reported by the Global North*

Figure 4: Role of Respondents in the MLEs Reported by the Global South

Therefore, it is important to rethink how multilateral funding initiatives are designed and implemented in order to ensure higher participation of the Global South representatives in the discussion, so funding can reflect needs and challenges of all regions and countries from around the globe. This can lead into more equitable access for funding and seek better solutions for global challenges.

MLEs' Rationale and Their Purpose

Various reasons were reported in response to the question of why MLEs were initiated. This report will focus on the top five reasons mentioned by the respondents. As indicated in Figure 5 below, the top five reasons to start an MLE are to:

- Address global challenges;
- Address regional challenges[2];
- Promote research excellence;
- Establish MLE frameworks;
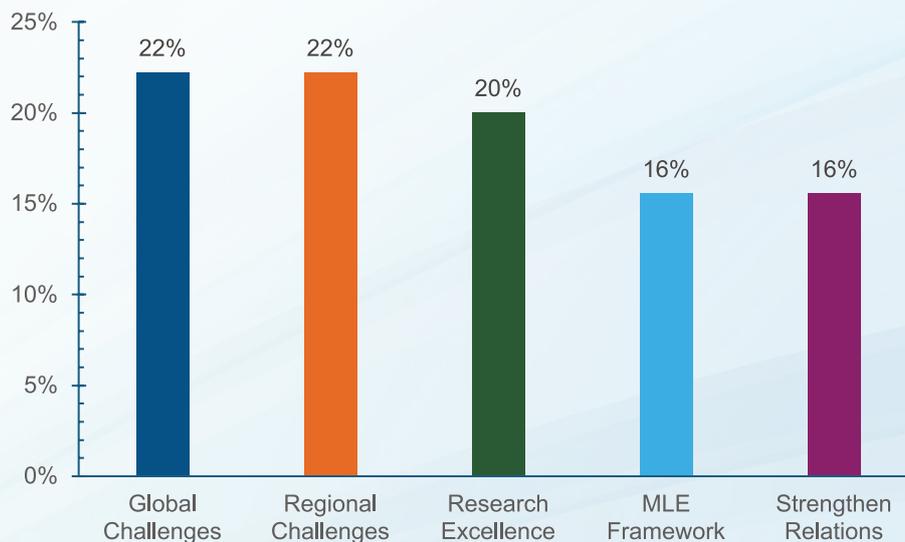- Strengthen relations.

Figure 5: Top 5 Most Frequently Cited Reasons for Starting MLEs in the Survey Responses

2   Hereby regional challenges respondents addressed geographical territories or regions.

It is clear from these responses that MLEs tend to address challenges that are cross-border by nature, such as global challenges or common regional challenges. Cooperation under an MLE scheme can produce more accurate results due to access to a larger data set. MLEs can also provide a deeper and more holistic view on a particular topic.

Interestingly, there were responses that indicated that the MLEs were started to create a framework to facilitate the engagements, which is why 'MLE Framework' was made one of the categories. While this may seem counterintuitive— since facilitating MLEs does not appear to be an end in itself—the responses were flagged for either of the following reasons:

1. The mechanism serves as an infrastructure to facilitate MLEs in general. For example, one response mentioned that the mechanism was put in place to reduce administrative burden of the researchers and funders to facilitate engagements.
2. As not all international cooperations are MLE, those agencies flagged as 'facilitating MLEs' typically had existing bilateral cooperations but lacked a framework to integrate additional parties.

Creating MLE schemes solely as an infrastructure tool without financial commitments could be used as an initial step to full scale MLEs. By doing so, funders will have the chance to discuss how they can operate the MLEs effectively in terms of administrative work. The administrative tasks tend to be neglected and create issues when trying to establish a new MLE (see Challenges).

Therefore, it can be concluded that MLEs are necessary not only to address challenges of global and regional scale, but also to build capacity within funding agencies to manage MLEs, foster existing international cooperation, and ensure excellence of research.

Common R&D Objectives of MLEs Identified in the Survey Responses

Figure 6 shows the most frequently mentioned MLE research objectives in the survey. If the response did not include the objective, additional information was obtained through the funder's websites. Since respondents were allowed to submit multiple objectives for each response, Figure 6 does not sum into 100% as it reflects how frequently the objectives were mentioned in the responses received (the same goes for Figure 6-1 and Figure 6-2).
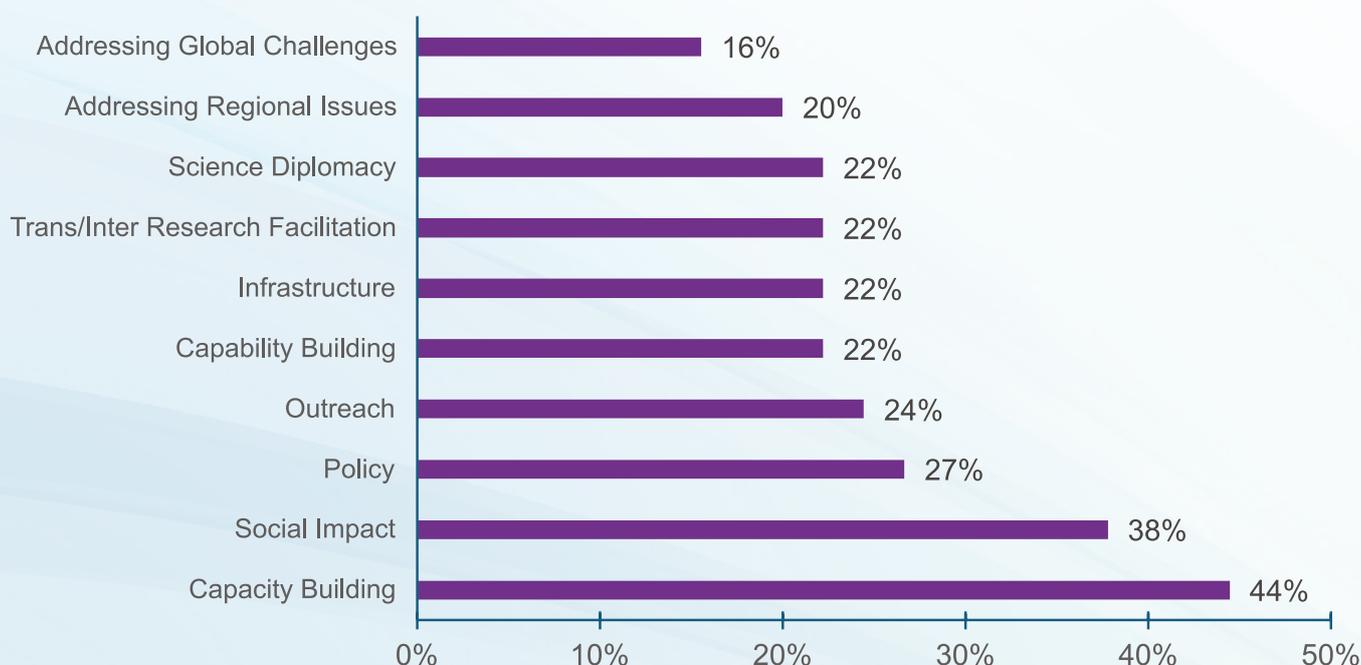

Figure 6: Top 10 Most Frequently Mentioned R&D Objectives by All Respondents

The most frequently mentioned objective were Capacity Building and Social Impact with 44% and 38% respectively. To highlight the differences in research objectives between the Global North and the Global South, the data were divided by region, revealing distinct priority orders (See Figure 6-1 and Figure 6-2):
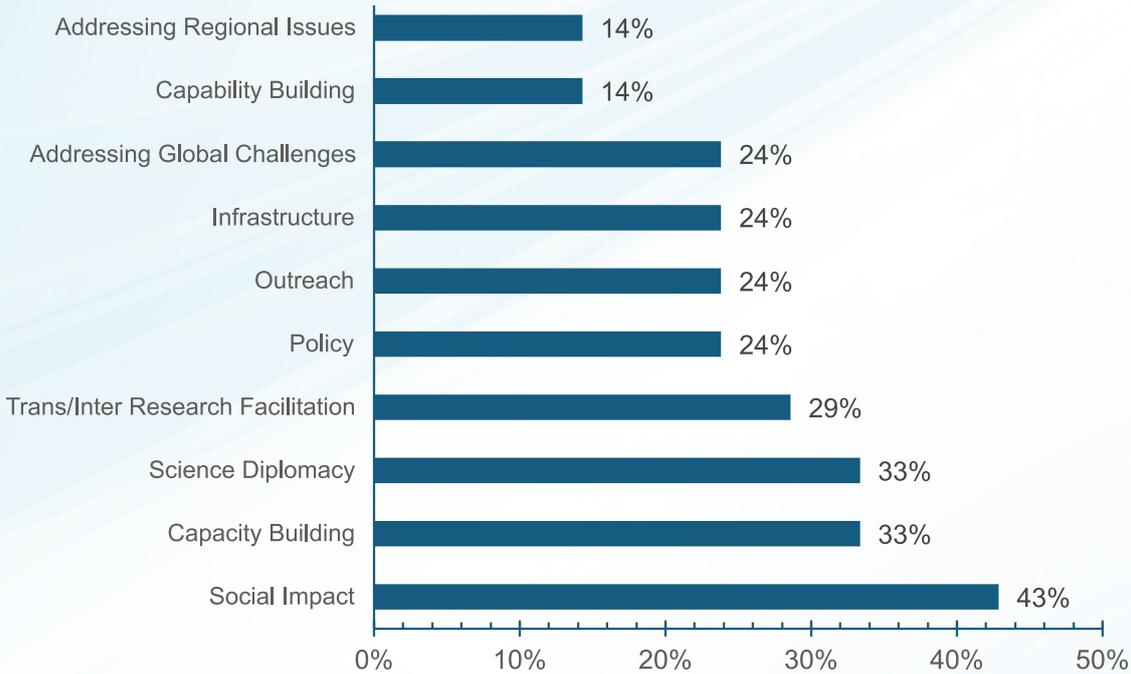
Figure 6-1: Top 10 Most Frequently Mentioned R&D Research Objectives by the Global North

Although capacity building and capability building often overlap, it was separated for this survey as it illustrates the difference of priorities between the Global North and South.
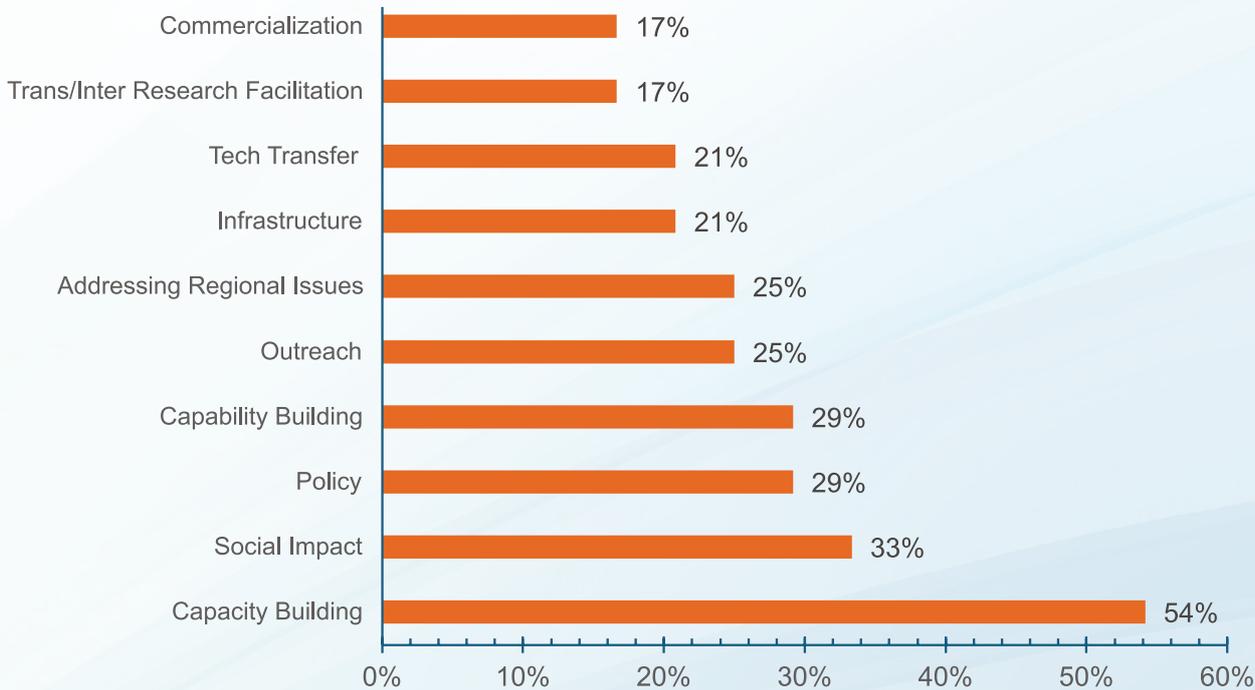

Figure 6-2: Top 10 Most Frequently Mentioned R&D Research Objective by the Global South

In this survey, capacity building refers to efforts aimed at enhancing skills, infrastructure, systems, and resources, whereas capability building denotes initiatives focused on developing expertise, technical skills, and practical know-

how. The data from the responses show that capability building is a low priority for the Global North when compared to the Global South, which may suggest a potential disconnect between the Global South's expressed priorities and the Global North's assumptions about their needs.

We can also see that the research objective priorities are quite different, for example, the Global South mentions industry-related areas, such as Commercialisation and Tech Transfer, whereas it is not in the top 10 research objectives of the Global North. Similarly, Science Diplomacy is not in the top 10 research objectives of the Global South.

R&D Common Areas of MLEs Identified in the Survey Responses

Figure 7 outlines the most frequently mentioned R&D areas of MLEs in the responses. Since respondents were allowed to submit multiple R&D areas for each response, Figure 7 does not sum into 100% as it reflects how frequently the objectives were mentioned in the responses received (the same goes for Figure 8 and Figure 9). In general, all respondents identified Energy and Health as most common areas for MLEs, while Sustainability and Climate Change are the second most mentioned sets of areas.
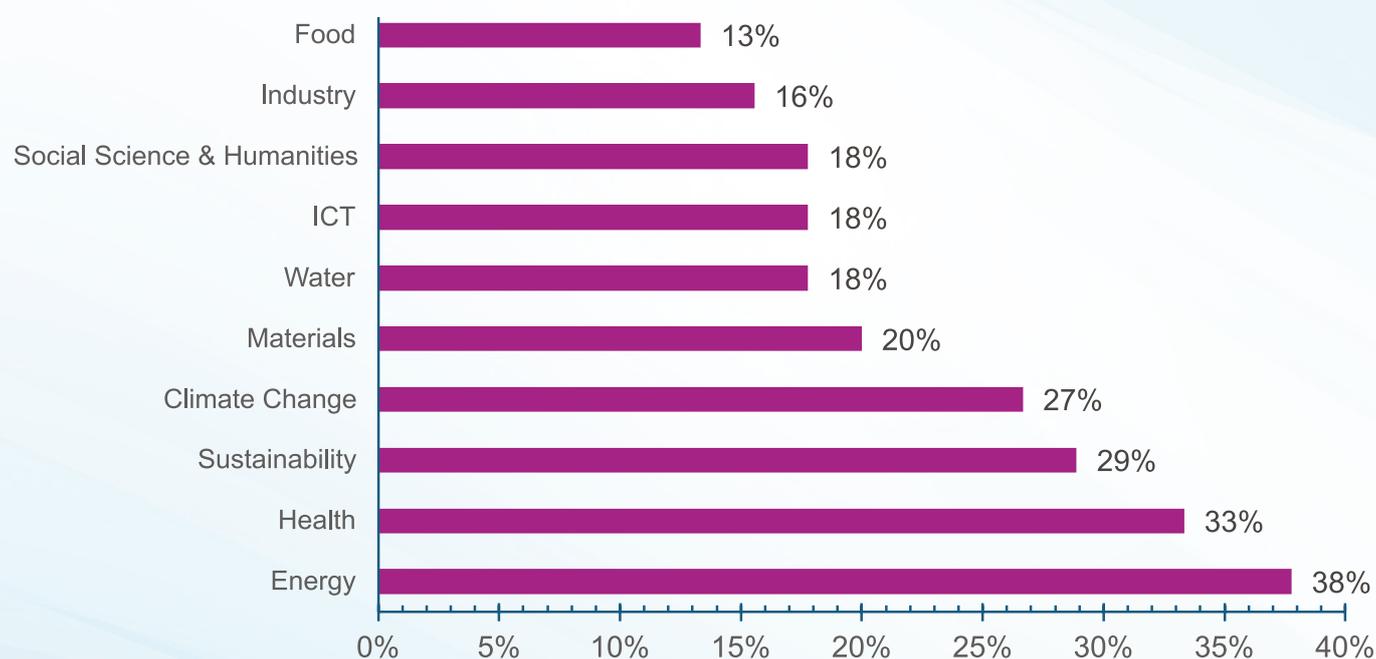
Figure 7: Top 10 Most Frequently Mentioned R&D Areas in the MLEs Reported

While it could be argued that Climate Change is the most frequently mentioned area, given its deep connections with many other research topics, a distinction was made between MLEs that directly aim to combat climate change and those that focus on responding to its effects and challenges. Similarly, the SDGs have been classified as a distinct research area, given that some MLEs explicitly aim to contribute to their achievement. In contrast, other MLE research areas may align with the SDGs only incidentally, rather than by intentional design. Although there are significant overlaps in research fields—especially since many schemes are transdisciplinary or interdisciplinary—attempts were made to clearly identify and categorise the primary focus areas of each scheme as much as possible.

Below, Figures 8 and 9 provide the separate analysis of the responses by the Global North and the Global South. The most common areas for the Global North are Energy and Health (Figure 8) and the most common areas for the Global South are Energy and Sustainability (Figure 9). This reflects the top three most common areas for MLEs: Energy and Health and Sustainability (Figure 7).

The respondents were divided most over the research areas: Social Science and Humanities (SSH) and Water. The

majority of those who responded SSH (75%) were from the North while most respondents who mentioned Water (75%) as the research area were from the South. Of these responses to Water, the research topics/themes were primarily related to clean water, sanitation, and freshwater security—challenges that are generally not in the agenda for the Global North. The research topics/themes that commonly overlapped for SSH were more conceptual and specific objectives were not mentioned.
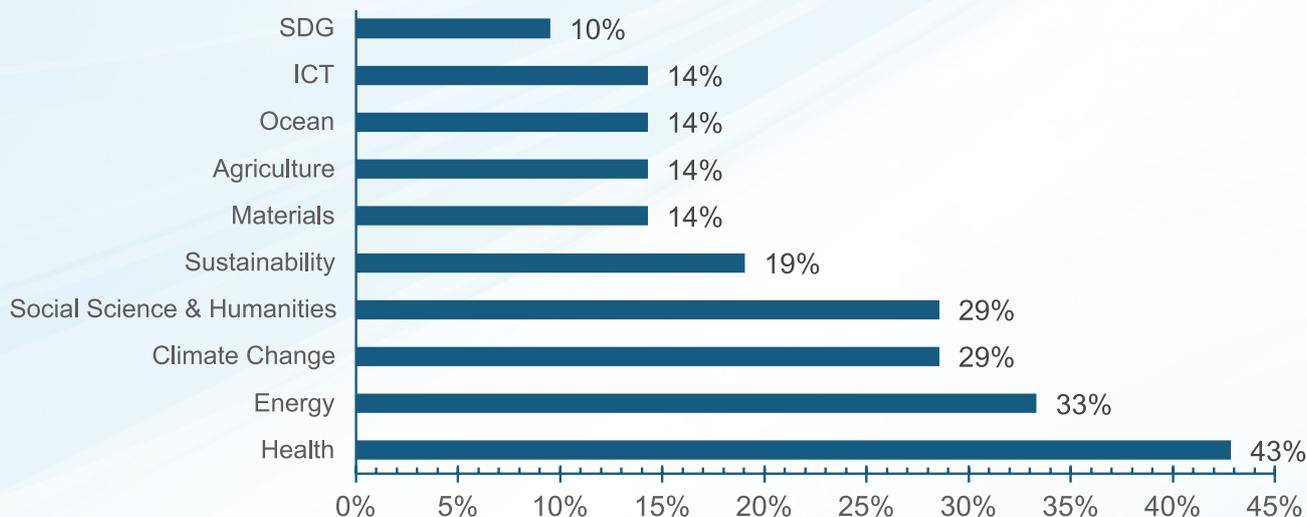
Figure 8: Top 10 Most Frequently Mentioned R&D Areas in the MLEs Reported by Respondents from the Global North
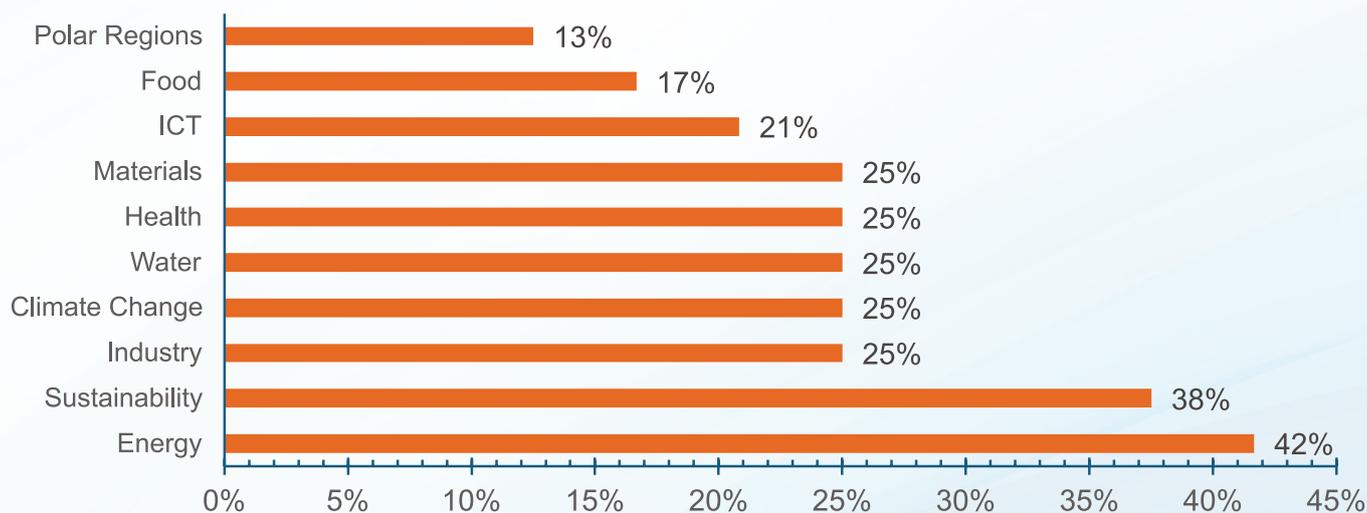
Figure 9: Top 10 Most Frequently Mentioned R&D Areas in the MLEs Reported by Respondents from the Global South

This divide over the research area may be a reflection of who is leading the MLEs. As noted at the beginning of this report, 80% of the MLEs reported in this study are led by funders in the Global North. The Global South most frequently mentions areas that are more 'concrete' whereas, many Global North respondents reported broader research areas, reflecting their leadership role in the schemes.
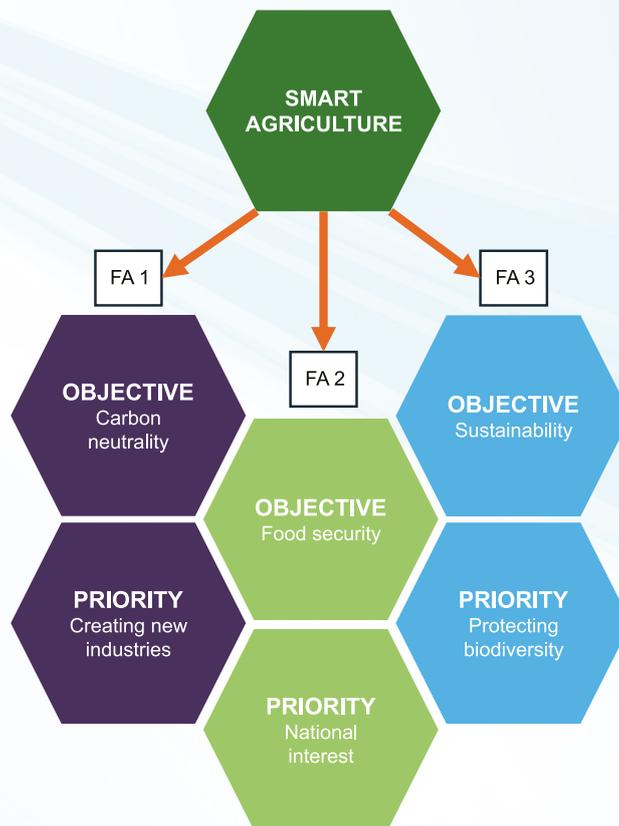
Figure 10: Example of a Thematic MLE Covering Different Objectives and Priorities of Each FA

In addition, based on MLE group discussion results, aligning priorities, whether it be the research objective or subject, is not always easy for funders due to a multitude of factors such as national or internal policies. To address this issue, it is recommended that the programs be thematic in nature instead of addressing a particular topic or that the schemes run regionally since there is greater opportunity to find common ground in the topics and more relevance. If the program is thematic, it can be a means to adjust funder preference as the research objective and priorities can be tailored, which allows cooperation to take place efficiently and smoothly by reducing the number of negotiations. See example in Figure 10 above.

Funding Decisions

A meaningful analysis of how funding decisions are made was not possible due to the wide variation in responses. This aligns with the finding that one of the biggest challenges that funders face in MLEs is the lack of a standardised process and organisation. While some processes appear straightforward, closer inspection reveals complexities. For example, decisions may be made by consensus, but the specifics of how that consensus is reached are often unclear (although some aspects, such as merit-based reviews, are well-defined). Another example is secretariates—many schemes mention that having a secretariate helps with the decision-making process. However, as one response mentions, the details of the secretariates' responsibilities and roles are not available. Therefore, without a clear guide, establishing a secretariate can be a challenge. Although many aspects of a MLE may be clear for those involved and with experience, if funders do not have the required expertise, starting MLEs, or even participating in one, this may pose a difficulty. While an international MLE framework covering everything from application processes to decision-making would be ideal, it is unrealistic due to the diverse priorities and governance structures of the funders. However, funders can seek to develop a standardised framework module that could offer a potential solution.

Funding Types

Respondents were also requested to provide information on the funding types they used to implement the MLEs. In some cases, in-kind funding would be implemented alongside the main funding type of the MLE which is why the graph does not sum up to 100%.

As seen in Figure 11 below, the Virtual Common Pot was the most common funding type for MLEs. There was insufficient data to determine relationships between funding types and the data derived from the other survey questions. However, this section will provide the definition for the funding types and outline their strengths and weaknesses which were extracted from the MLE-WG discussions.
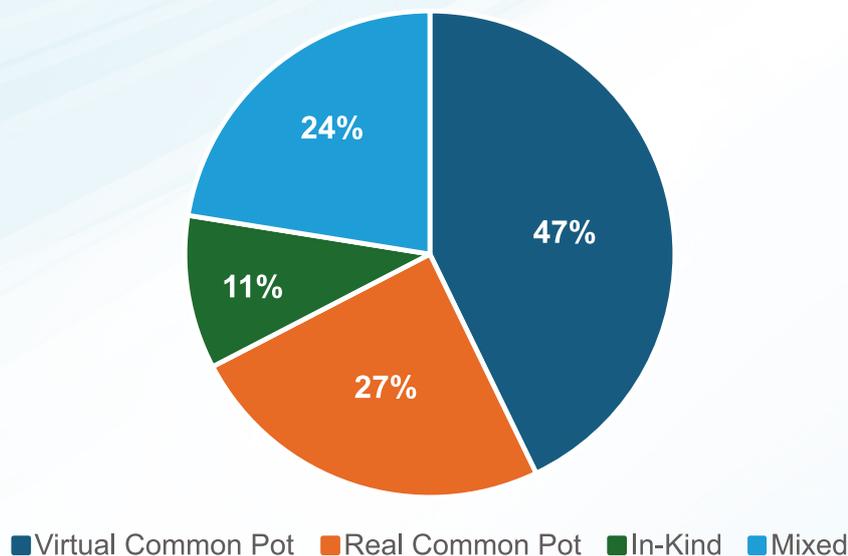

Figure 11: Funding Types Commonly Used in MLEs

For the definition of the funding types, the MLE-WG members agreed to refer to ERA-LEARN. ERA-LEARN is a support platform funded and established by the EU in 2009 and provides resources for the R&D community to facilitate partnerships by providing tools to all stakeholders involved in Horizon Europe. The platform provides tools and useful information, such as the definitions of terms associated with funding programs. Using established and widely used terms will assist with standardising terms and avoid miscommunication.

According to ERA-Learn (ERA-Learn, n.d.-a) the 'funding modes' (types) can be sorted into the following main categories:

- **Virtual Common Pot:** Funds are usually provided directly by the respective national/regional funding organisations to successful applicants. Consequently, in a next phase, the monitoring of funds is also done by the involved funding organisations.
- **Real Common Pot:** The programme owners agree to provide the financial contribution to a central unit, i.e. call secretariat. Funds are then distributed to the respective project consortia, and the funded project is further monitored by the secretariat.

In addition, ERA-Learn (ERA-Learn, n.d.-b, para.1) outlines the **mixed mode**, which pools national/regional budgets and EU co-funding to support the transnational projects selected in a call. The involved funding organisations use part of the total EU financial contribution as top-up funding to fund the selected projects.

However, it should be noted that the mixed mode is a funding type rarely found outside of the EU and virtual common pots can also have central units. Although central units in the virtual pot do not directly distribute funds or monitor each individual project, they play a crucial role in managing the MLE at a program level by overseeing administration and managing communications.

In addition, the MLE-WG has identified another funding type—**in-kind funding**. When participating in MLEs through in-kind funding, the participant does not provide monetary contributions but rather other resources such as human resources, data sets, access to field work locations, research infrastructure/equipment, etc. Such in-kind funding must be used in combination with the other type of funding.

Strengths and Weaknesses of the Funding Types

The following comments on the strengths and weaknesses of the funding types were not collected through the survey but are the result of further discussion and consensus reached by the MLE-WG during the first review meeting.

Real Common Pot is the easiest to manage. The best consortium gets the funds regardless of where they are from or the amount of funds contributed by their respective countries. However, for many funders it is difficult to participate in MLEs with this type of funding because their countries restrict cross-border use of public funds.

In Virtual Common Pot, participants receive back what they contributed (juste retour). This funding type usually is acceptable in all countries as the money never crosses borders. However, this funding type faces a bottleneck when contributions do not reflect the review results with respect to per-country budget needs. If countries are not able to contribute as suggested per review, the number of projects that can be funded may be limited, leaving available budgets from other funders unused. This is hard to manage, as there might be a problem for countries that have managed to come up with considerable funding.

Mixed Mode allows for a combination of common pot and virtual common pot. The Mixed Mode can only work if there is a third party with funding that can be used to top-up funds, such as the EU. The Mixed Mode makes it easier for countries to fund the best projects than the Virtual Common Pot as they can receive necessary top-up funds to match the contributions made.

As noted, some countries or agencies are limited to using specific funding types. Consequently, it is challenging to determine the appropriate funding types for an MLE before the participating countries or agencies are known.

Funding Duration of MLEs

As MLEs are designed and/or implemented by three or more funding agencies, duration of the MLE depends on each agency´s funds availability and national priorities.
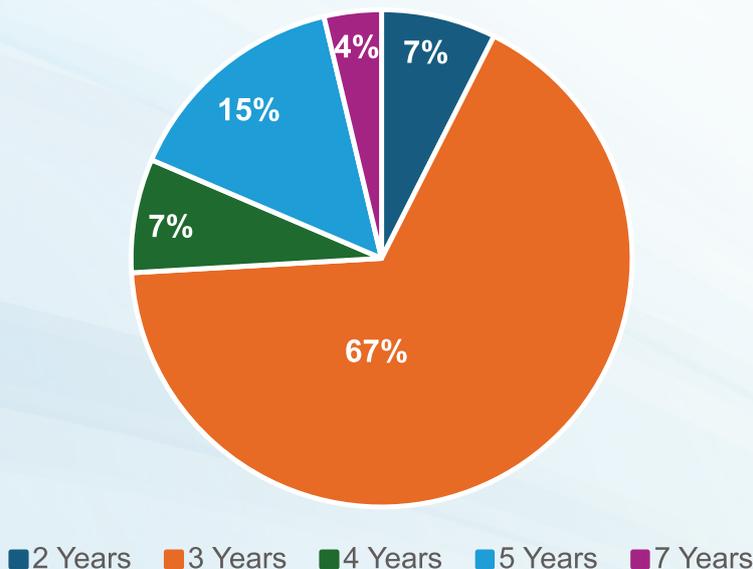

Figure 12: Max Project Duration

As indicated in Figure 12 above, the most common maximum duration of each MLE scheme mentioned by respondents is three years, but the duration can vary from two to seven years. Although there was insufficient data to determine relationships between MLE project durations and the data derived from the other survey questions, the report has collected information on what to consider when choosing project durations from the MLE-WG members. The remarks below were collected separately from the survey during the first landscape report draft review meeting and the contents agreed upon by the MLE members during further discussion.

Considerations for Determining MLE Project Durations
Short Durations (Three years or less)

● Strengths
- Good for initiating cooperation and identifying demand
- Project goals more focused and achievable
- Easier to manage—fewer financial resources and the contents can be easily adjusted and evaluated rapidly
● Weaknesses
- Shorter time to build cooperative relations
- Research outcomes may not be as conclusive compared to longer schemes
- Number of publications may be limited
- Limits continuity of projects

Long Durations (4+ years)

● Strengths
- Enhance long-standing cooperation relationships in strategic long-term areas
- Allows flexibility for unexpected events, such as delays
- Allows for a more thorough approach
- Potential for higher number of publications
- Opportunity to collect more data that may lead to more conclusive and accurate research outcomes
● Weaknesses
- Higher management workloads as requires more coordination, keeping focus, etc.
- More resources are necessary (financial, human resources, etc.)
- Challenging without pre-existing relations
- Higher possibility of changes within teams (staff or researchers)
- Longer period for delivery of results and impact evaluation

As can be seen from the strengths and weaknesses mentioned in this section, an initiative's duration will depend on the collective decisions of the agencies involved in the MLE. For example, long-term MLEs may need more resources, which could be challenging for some countries and agencies. Out of 45 responses collected, only one initiative[3] has a duration of seven years and four initiatives have duration of five years. Based on this survey data, three years was the most popular duration for an MLE, with two-thirds of the initiatives (30 out of 45) selecting a three-year duration for their projects' execution period.

Challenges Faced in MLEs

As shown in Figures 2 and 3 respectively, 80% of the MLEs reported in the survey are led by the Global North, with over 60% of the Global North respondents serving as the MLEs Primary Lead. This demonstrates the leadership by the Global North. In contrast, responses from the Global South were often of North-led MLEs in which they were participants, shedding light on the challenges encountered by the Global South when participating in Global

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3   Biodiversa + by the German Research Foundation (DFG)

North-led MLEs. It's evident that timing, budget differences, and conflicting priorities pose significant challenges for anyone involved in MLEs (see Figure 13 below). This unsurprising, given that each funder has its own priorities and governance structures that are difficult to alter. The flexibility with which these parameters can be interpreted is also limited. Timing is particularly challenging logistically from the macro to local level, such as the funding cycles/fiscal years differing between funders/regions and coordinating work while navigating different time zones.
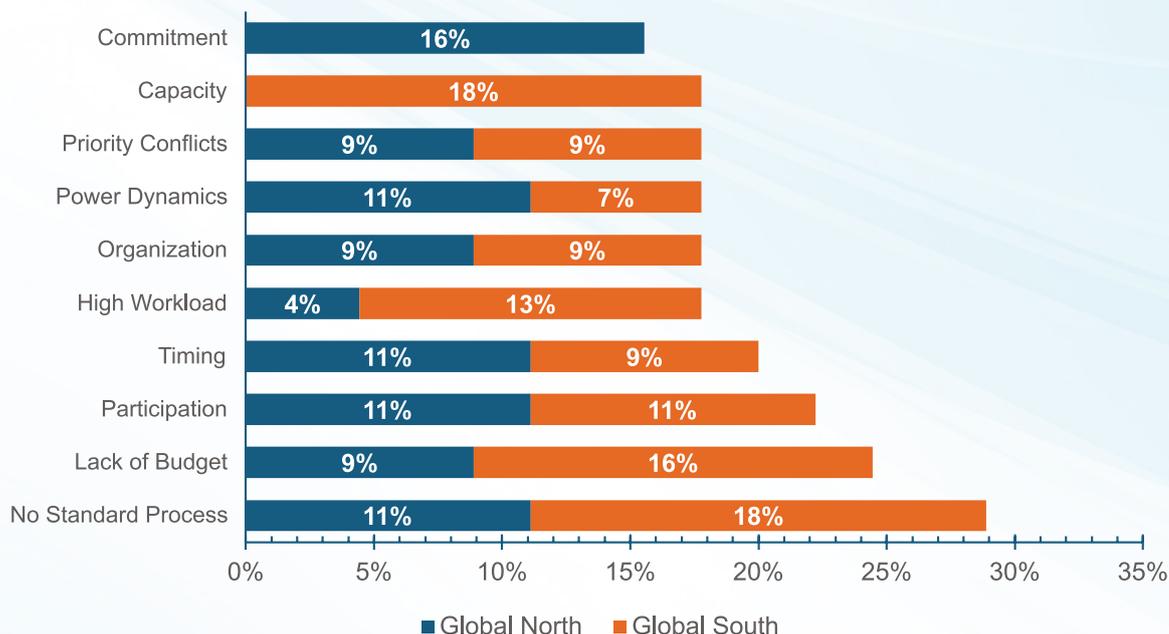

Challenge	Global North	Global South
Commitment	16%	
Capacity		18%
Priority Conflicts	9%	9%
Power Dynamics	11%	7%
Organization	9%	9%
High Workload	4%	13%
Timing	11%	9%
Participation	11%	11%
Lack of Budget	9%	16%
No Standard Process	11%	18%

Figure 13: Top 10 Most Frequently Reported Challenges in the Responses

These issues contribute to a broader problem—the lack of a standardised process for MLEs. Conflicts of priority, for example, do not always pertain to research areas but can also involve discrepancies in project evaluation criteria among funders. While some funders might be able to navigate these differences, others may lack the capacity or resources to do so.

Survey responses also highlighted logistical challenges, such as the absence of a uniform application system, which places an extra burden on both the funders and the researchers. Two of the schemes mentioned in the responses were specifically designed to address the systems to facilitate MLEs and can be highlighted as efforts to resolve the logistical challenges.

Although budget differences and lack of funding might seem similar, it is important to distinguish between the two. Budget differences do not necessarily indicate an inability to secure funding but rather relate to how the scheme is financed. These can include differences in fiscal year, transaction periods and regulations; diverse accountability procedures; reporting schemes; etc. For instance, if funders are required to match funds, this can become challenging if the agencies differ in their budget, decision making processes, and institutional size. Even if the level of interest and priority is the same, smaller agencies may struggle to match the funding because their overall budget is insufficient and the procedures for funding approval may differ and be extensive.

To better understand the challenges faced by MLEs, the separate analysis for the Global North and the Global South is presented below.

Challenges of the Global North: Lack of commitment and lack of participation

Lack of commitment and lack of participation can overlap but for this survey, 'commitment' is defined as long-term and steady commitments of funds and human resources, and 'participation' is about finding partners and keeping the partners active and involved.

Budget size inequalities between the parties involved and the political landscape will always influence the ability for long-term involvement in both commitment and participation. For countries in the Global North, the primary challenge was not identifying partners for MLEs, but rather encouraging partners to positively engage when initiatives involved a mixture of countries at various stages of development (in terms of economy and science and technology capacity etc.). An interesting result of this survey was that one of the challenges faced by the North was often a difficulty in finding people from the North to consistently commit to administrative tasks, such as taking on the role of secretariat or volunteering as the handling/lead agencies.

Challenges of the Global South: High workload and organisation

The most mentioned challenge of 'High Workload' for the Global South, was administration work related to MLEs. For example, many respondents mentioned that they had more workload when joining a scheme because they were not part of a consortium with established mechanisms to carry out administration tasks, i.e. the EU. Others mentioned that volunteering for a position, i.e. secretariat, was initially manageable but then became increasingly challenging as the schemes grew, i.e. number of partners and projects, leading to increased workload and complexity. This is especially relevant as there is usually no budget available for additional human resources to manage the administrative workload needed to participate in the MLE, i.e. inability to set aside budget to incentivise volunteering.

Many respondents from the South mentioned that they had to be strategic with how active they were in MLEs due to the limits of human resources and thus, administrative capacity. This can be related to the challenge faced by the North—lack of active participation and commitment. There was no lack of enthusiasm or interest demonstrated in the survey, but rather a limit because of human resource capacities/capabilities in both the Global South and the Global North.

Another challenge mentioned by Global South respondents was 'Organisation'. This relates to managing/organising the MLE schemes structures and establishing clear procedures, rather than the organisational challenge of coordination, i.e. timing, standard processes. For example, one of the responses noted that agreement on the MLE structures and procedures in a short period of time was difficult, especially since several funding agencies were involved. Extending the planning period was not an option since it could result in exceeding the planned budget cycle.

Global South respondents that started their own MLE schemes, expressed that organisation is very challenging as there is no guide on how to establish a MLE (terms of reference, best practices, etc.); which resulted in a slow process to establish and implement the MLE. Both the South and the North have echoed the opinion that having a central secretariat is a way to mitigate these issues.

CONCLUSION

This desktop study reaffirms the pivotal role of MLEs in advancing collaborative research to tackle global and regional challenges. Drawing on extensive survey data and group discussions, the study highlights both the promise and the complexity of MLEs.

A key finding is the imbalance in leadership, with most MLEs led by agencies from the Global North, while Global South agencies often participate without decision-making authority. This asymmetry limits the inclusivity and responsiveness of MLEs to diverse regional priorities.

The study also highlighted how the research objectives vary between the Global North and Global South agencies. Respondents from the Global South emphasised capacity building, regional issues, and industry-related outcomes, whereas Global North agencies focus on science diplomacy and broader global challenges. These differences likely reflect disparities in resources, strategic interests, and institutional capacities.

Operational challenges, such as lack of standardised processes, inconsistent funding mechanisms, and high administrative workloads, further hinder the effectiveness of MLEs.

By addressing these challenges and implementing structured solutions, MLEs can become more inclusive, efficient, and impactful—ultimately strengthening global scientific cooperation. To tackle this problem, the MLE-WG will scope out possible roles for the GRC to facilitate MLEs; identify actionable steps for the role; and create an implementation plan in its next phase of operations. When scoping the role of the GRC, the WG will consider the following questions derived from the challenges identified in the desktop study:

- What are ways to ensure balanced participation and decision-making between all participants, especially in the context of the Global South and Global North?
- What are ways to address and incorporate different priorities of each stakeholder?
- How can administrative burdens be reduced for MLEs?
- Are there elements of MLEs that are universal and could be standardised to streamline processes for agencies to establish and implement MLES?
- What are best practices and lessons learned that could assist stakeholders in making informed decisions on MLEs?

The GRC is uniquely positioned to lead the efforts in promoting MLEs as it facilitates dialogue and the sharing of best practices between national funders worldwide. Through the GRC, the MLE-WG aims to foster inclusive and resilient MLEs that can grow into more effective platforms for international collaboration, grounded in equity, transparency, and shared purpose.

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ANNEXURES

Annexure I

Survey questions given to the MLE members:
1. Name of your organization
2. Region
3. Name of MLE
4. Why was the MLE started? What is the purpose of the MLE?
5. How does the funding mechanism of your MLE work? How are funding decisions made?
6. What is the R&D priorities (basic/applied, or development research etc.), objectives (scientific breakthrough, societal impact, and/or capacity building etc.), and research areas (topics or research fields/disciplines)?
7. Budget size: average budgetary contribution from each funding agency to one project (please indicate the currency)
8. Who are the partners other than organisers represented in your initiative if any?
9. Any particular challenges you are facing?
10. Are there any research opportunities within the scope of this programme which are not covered (e.g. due to the way it is conceived, the (kinds of) partners involved, the implemented funding mechanism, etc.)?
11. Any special features or unique points?

Annexure II

List of unique MLEs reported - In alphabetical order (# of times mentioned)
1. 2023 International Joint Initiative for Research in Climate Change Adaptation and Mitigation Competition
2. Africa Japan Collaborative Research (AJ-CORE)
3. Amazon + 10
4. Belmont - Collaborative Research Action on Climate and Cultural Heritage (CCH2023)
5. Belmont Forum (2)
6. Biodiversa+
7. BRICS Multilateral Research Programme (2)
8. BRICS STI Framework Programme
9. Clean Energy Transition Partnership (CETPartnership)
10. e-ASIA Joint Research Program
11. EIG CONCERT Japan (European Interest Group Connecting and Coordinating European Research and Technology Development with Japan)
12. Eranet FLAG-ERA
13. EUREKA
14. EUREKA-EUROSTARS
15. European Partnership Driving Urban Transitions (DUT)
16. Falling Walls Lab
17. Global Alliance for Chronic Diseases (GACD)
18. Global Centers (GC): Use-Inspired Research Addressing Global Challenges in Climate Change and Clean Energy (2)
19. Global Cleantech Innovation Programme (GCIP)
20. Grant-in-Aid Programme for Bilateral Program
21. GRC Sustainable Development Goals (SDGs) Pilot Call (2)
22. Human Frontier Science Program (HFSP)
23. Humanities in the European Research Area (HERA)
24. International Joint Initiative for Research on Climate Change Adaptation and Mitigation
25. Joint Centers of Excellence Program (JCEP)

26. Key Digital Technologies Joint Undertaking (KDT JU)
27. Multilateral Call on Artificial Intelligence
28. NordForsk
29. Open Research Area for the Social Sciences
30. PRIMA (Partnership for Research and Innovation in the Mediterranean Area)
31. Research Grants and Flagship Projects, two programs within the Research Directorate at KFAS
32. STAND "Science, Technology and Action Nexus for Development"
33. Subatomic Physics (SAP) Discovery Grants
34. Support Program for Increasing the Capacity to Benefit from International Research Funds and Participation in International R&D Cooperation
35. Sustainable Blue Economy Partnership (SBEP)
36. Trans-Atlantic Platform (T-AP) for Humanities and the Social Sciences (HSS) (3)
37. TÜBİTAK International Industrial R&D Projects Grant Programme
38. US-Ireland Trilateral R&D Partnership - 2 separate programming strands
39. The Water4All Partnership (WATER4ALL)
40. Weave Lead Agency Initiative (not a programme, but a Lead Agency procedure)

Annexure III

List of unique research areas mentioned and their definitions*:
1. **Agriculture:** The science and practice of cultivating soil, growing crops, and raising animals for resources.
2. **AI (Artificial Intelligence):** The development of computer systems capable of performing tasks that typically require human intelligence, such as learning, reasoning, and decision-making.
3. **Architecture:** The art and science of designing and constructing buildings and physical structures.
4. **Biodiversity:** The variety of life forms within ecosystems, including species diversity, genetic variation, and ecosystem richness.
5. **Biotechnology:** The use of biological systems, organisms, or processes in developing technologies and products for health, agriculture, and industry.
6. **Climate Change:** Long-term shifts in global or regional climate patterns, primarily driven by human activities such as greenhouse gas emissions.
7. **Cultural Heritage:** The legacy of physical artifacts and intangible attributes of a group or society inherited from past generations, including traditions, language, and art.
8. **Cybersecurity:** The practice of protecting systems, networks, and data from digital attacks, unauthorised access, or damage.
9. **Digitalization:** The integration of digital technologies into everyday processes, transforming industries, services, and communication.
10. **Digital Society:** A society shaped by digital technologies where information, communication, and services are accessed and mediated through digital platforms.
11. **Ecosystems:** Complex communities of living organisms interacting with their physical environment as a functional unit.
12. **Education:** The structured process of facilitating learning, acquiring knowledge, skills, values, and critical thinking across all stages of life.
13. **Energy:** In this survey energy encompasses renewable, alternative, and clean energy.
14. **Engineering:** The application of scientific and mathematical principles to design, build, and optimise systems, machines, structures, and technologies.
15. **Environment:** The natural world and its components, including air, water, land, and ecosystems, as well as their interactions with human activity.
16. **Food:** For this survey, this denoted food security and food systems.
17. Geomatics: The science and technology of gathering, analysing, and interpreting spatial data, including geospatial mapping and remote sensing.

18. **Health:** In this survey health is encompasses physical health, such as medicine and infectious diseases, but excludes wellbeing which encompasses mental health.
19. **ICT (Information and Communication Technology):** Technologies that provide access to information and facilitate communication, including the internet, computers, mobile devices, and software.
20. **Industry:** The sector of the economy concerned with the production of goods and services through manufacturing and related processes.
21. **Infrastructure:** The foundational physical and organisational structures needed for the operation of society, including transport, energy, water, and communication systems.
22. **Legal Amazon:** A socio-geographic and administrative region in Brazil defined for development and conservation purposes, encompassing nine states in the Amazon basin.
23. **Life Sciences:** The study of living organisms and life processes, including biology, genetics, medicine, and ecology.
24. **Manufacturing:** The industrial production of goods using labour, machines, tools, and chemical or biological processing.
25. **Materials:** Substances or matter used in the creation of products or structures, often studied for their properties and performance in various applications.
26. **Mining:** The extraction of minerals and other geological materials from the earth for use in construction, energy, and manufacturing.
27. **Nanotechnology:** The manipulation and application of materials at the atomic or molecular scale, often at dimensions less than 100 nanometers.
28. **Natural Disasters:** Severe and sudden environmental events such as earthquakes, floods, hurricanes, or wildfires that result in significant damage or loss of life.
29. **Neutron:** A subatomic particle with no electric charge, found in the nucleus of atoms, essential in nuclear reactions and scientific research.
30. **Nuclear:** Relating to the energy released from atomic nuclei through fission or fusion, often used for power generation or medical applications.
31. **Ocean:** In this survey ocean denotes anything related to the oceans but excludes polar science although they are interconnected.
32. **Physics:** The natural science that studies matter, energy, and the fundamental forces and laws governing the Universe.
33. **Polar Regions:** The Earth's Arctic and Antarctic areas, characterised by extreme climates, unique ecosystems, and sensitivity to climate change.
34. **SDGs (Sustainable Development Goals):** A global framework of 17 interconnected goals established by the United Nations to promote peace, prosperity, and environmental sustainability by 2030.
35. **Semiconductors:** Materials with electrical conductivity between conductors and insulators, critical to modern electronics and computing technologies.
36. **Sensors:** Devices that detect and respond to physical inputs from the environment, converting them into signals for monitoring or control.
37. **Social Science & Humanities:** Disciplines that study human behaviour, society, culture, and history, offering insight into the social and ethical dimensions of knowledge and technology.
38. **Space:** The physical universe beyond Earth's atmosphere, studied for exploration, observation, and technological advancement.
39. **Sustainability:** The capacity to meet present needs without compromising the ability of future generations to meet theirs, balancing environmental, economic, and social concerns.
40. **Sustainable Cities:** Urban areas designed or managed to reduce environmental impact while supporting economic growth and quality of life.
41. **Transportation:** The systems and infrastructure that enable the movement of people and goods by land, air, or sea.
42. **Urban Development:** The planning and growth of urban areas to improve living conditions, infrastructure, and economic opportunities in cities.
43. **Water:** In this survey water encompasses water security, sanitation, systems, and management but excludes ocean/marine science.
44. **Wellbeing:** In this survey wellbeing addresses mental, and emotional health, as well as life satisfaction and

quality of life but not physical health.

* Portions of the definitions and explanatory text included in Annex III were developed with the assistance of ChatGPT, an AI language model developed by OpenAI. While care has been taken to verify the accuracy and appropriateness of this content, readers are advised to consult primary sources or subject matter experts for definitive interpretations.

Annexure IV

List of unique MLE objectives mentioned and their definitions*:

1. **Additional Funding:** Provides additional funding to projects already funded.
2. **Addressing Global Challenges:** Aims to solve large-scale issues that affect the global community, such as climate change, pandemics, or food security.
3. **Addressing Regional Issues:** Aims to address problems or priorities that are specific to a particular geographic region, informed by local contexts and needs.
4. **Advocacy:** The strategic effort to influence public opinion, policy, or decision-making in support of a particular cause or issue.
5. **Capacity Building:** Developing and strengthening the overall systems, structures, and institutions needed to sustain effective operations and long-term growth.
6. **Capability Building:** Enhancing the technical expertise, skills, and resources of individuals or organisations to improve performance in specific domains.
7. **Commercialisation:** The process of transforming research or innovation into market-ready products, services, or technologies.
8. **Industry Collaboration:** Partner with private-sector companies to co-develop research, innovation, or practical applications.
9. **Infrastructure:** The physical, digital, and organisational systems and facilities necessary to support research, innovation, or societal functions.
10. **Open Science:** Promotes transparency, accessibility, and collaboration in scientific research through open data, methods, publications, and peer review.
11. **Outreach:** Efforts to engage and communicate with the public or specific communities to share knowledge, raise awareness, or foster participation.
12. **Policy:** The research aims to inform, shape, and contribute to the development of policy.
13. **Protecting the Vulnerable:** Designing and implementing actions or policies to safeguard the rights, well-being, and livelihoods of marginalised or at-risk populations.
14. **Science Diplomacy:** The use of scientific collaboration and exchange to foster international relations, build trust, and address shared global challenges.
15. **SDGs (Sustainable Development Goals):** Collection of 17 global objectives set by the United Nations to promote peace, prosperity, and sustainability by 2030.
16. **Social Impact:** The measurable effect that research, policies, or initiatives have on improving the well-being and conditions of individuals or communities.
17. **Tech Transfer (Technology Transfer):** The process of moving scientific discoveries, innovations, or intellectual property from research institutions into practical use by industry or society.
18. **Trans/Inter Research Facilitation:** Support for research that crosses disciplinary boundaries (interdisciplinary) or transcends traditional fields (transdisciplinary), enabling integrated approaches to complex problems.

* Portions of the definitions and explanatory text included in Annex IV were developed with the assistance of ChatGPT, an AI language model developed by OpenAI. While care has been taken to verify the accuracy and appropriateness of this content, readers are advised to consult primary sources or subject matter experts for definitive interpretations.

Annexure V

List of Respondent Agencies (Alphabetically Ordered):

1. Department of Science and Technology - Philippine Council for Industry, Energy and Emerging Technology Research and Development (DOST-PCIEERD), The Philippines
2. Fundação de Amparo à Pesquisa do estado de São Paulo - São Paulo State Funding Agency (FAPESP), Brazil
3. German Research Foundation (DFG), Germany
4. Japan Science and Technology Agency (JST), Japan
5. King Abdulaziz City for Science and Technology (KACST), Saudi Arabia
6. Kuwait Foundation for the Advancement of Sciences (KFAS), Kuwait
7. National Natural Science Foundation of China (NSFC), China
8. National Agency for Research and Development (ANID), Chile
9. National Agency for Research and Inovation (ANII), Uruguay
10. National Research Foundation (NRF), South Africa
11. Natural Sciences and Engineering Research Council of Canada (NSERC), Canada
12. The Research Council of Norway (RCN), Norway
13. The Scientific and Technological Research Council of Türkiye (TÜBİTAK), Türkiye
14. Social Sciences and Humanities Research Council of Canada (SSHRC), Canada
15. Taighde Éireann | Research Ireland, (Formerly: Science Foundation Ireland), Ireland
16. Thailand Science Research and Innovation (TSRI), Thailand
17. UK Research and Innovation (UKRI), The United Kingdom
18. US National Science Foundation (NSF), the United States

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