

2020/1 GRC Statement of Principles on Mission-Oriented Research

Preamble

Mission-oriented research is an emerging model for addressing a wide range of modern global grand challenges, which are increasingly varied, complex and interconnected, and therefore require a broad and global multidisciplinary and multisectoral response. Mission-oriented research offers one potential mechanism for creating change in, or impact on, society's ambitions for addressing these challenges. These ambitions are best realised in collaboration and consultation with a range of societal actors, from identifying the priorities through to delivering their solutions.

Mission-oriented research seeks to provide a systemic and broad approach towards achieving a specific goal, using solution-based, outcome-oriented approaches: 'Big science, deployed to meet big problems'. Such an approach for designing and implementing research initiatives has emerged as a model with the potential to harness the capabilities and interest of the global research community to work together towards an agreed and evidence-based set of end points, or 'missions'.

The COVID-19 pandemic is a timely example of a global challenge being addressed through mission-oriented research. A coordinated effort across funding organisations is critical to ensuring adequate resources are mobilised to control and ultimately eradicate the virus. A flexible approach to addressing such challenges will thus enable the research community to adapt to the ever-changing needs of society.

The United Nation's Sustainable Development Goals (SDGs) – established as part of the UN's Agenda 2030 – provide one particular example from a variety of different frameworks. In 2019, the UN held its first SDG Summit since the adoption of Agenda 2030, which committed to solving challenges through international cooperation and enhancing global partnerships. The international science, technology and innovation community has an important role to play in addressing the challenges articulated by the SDGs and promoting the use of scientific evidence from all fields to enable transformations to sustainable development'.

GRC participants recognise, respect, and value the diversity and pluralism of the global research and innovation eco-system, and the subsequent variety in understandings, approaches and priorities towards the attainment of global grand challenges. Moreover, this pluralistic nature of research, and the variety of global grand challenges faced, ensure that comparing and learning from a range of experiences and approaches between GRC participants is essential to addressing such challenges.

Principles and approach of mission-oriented research

GRC participants agree that:

1. missions should be broad, long-term and outcome-oriented commitments which allow for a range of potential approaches and solutions in addressing a particular challenge. Missions should therefore be flexible and allow for the reprioritisation and/or expansion of the missions' scope as required.
2. missions will require new, innovative and inclusive models for research funding which integrate capacities from a broad range of stakeholders, scientific disciplines and sectors, adopting new modalities and developing new capacities, underpinned by effective and mutually reciprocal knowledge exchange practices.
3. a broad approach to accomplishing missions – that encompasses the full spectrum of scientific disciplines and encompass both the fundamental sciences as well as applied sciences – is required. The role of the social sciences and humanities, as well as multidisciplinary research, is crucial in providing an effective and holistic approach.
4. Commonalities and diversities of countries should also be taken into account in the design and implementation of missions.
5. missions should also provide opportunities for and relate to curiosity-driven science as well as strategic research.
6. national and local priorities, contexts, capabilities and strategies must also be appropriately recognised and integrated into the scope and approaches of the missions, alongside the broader regional and global frameworks.
7. using broader global frameworks, such as the Sustainable Development Goals, as well as regional frameworks like the African Union's Agenda 2063, can help steer the strategic approach of missions by providing possible frameworks around which to develop and cluster these missions.
8. whilst the Sustainable Development Goals represent one particular framework that can be utilised for mission-oriented research, a range of frameworks exist that could be adapted to serve as a foundation for such missions. For example, the Convergence Accelerator, funded by the USA's National Science Foundation, leverages partnerships across a wide range of sectors to support use-inspired research in areas of national and global importance.
9. monitoring and evaluation of missions, as well as effective communication of their impacts, is needed to effectively demonstrate the benefit and value of these missions to wider stakeholders, as well as to garner their wider support and collaboration.

Principles for mission-oriented research and its relationship to the GRC theme on public engagement

GRC participants recognise that:

10. there is a strong and mutually inclusive relationship between the mission-oriented research and public engagement themes, with public engagement recognised as an important component to the design and implementation of missions that are responsive to the needs and interests of the global citizenry.
11. a wide range of publics – such as citizens, but also various civil society formations, the variety of branches of the state, the private and public enterprise sectors, and a myriad of scholarly and academic organisations – are effectively engaged in the identification, development and delivery of

missions, as well as benefit from their outcomes and are essential to ensuring consensus and inclusive public engagement with missions.

12. while research can make contributions towards specific goals, it cannot solve societal and global grand challenges alone, and therefore mission-oriented research must be connected to policymaking, education, governance, and dialogue with society.
13. capacity-building and knowledge exchange initiatives, including those engaging underserved communities, would help further bolster the quality and investment to the missions.

Principles for the role of the GRC and its participating organisations

GRC participants affirm that:

14. whilst recognising the limits of funding agencies in delivering these ambitions, they can support the continuing development and use of mission-oriented research by providing long-term, sustainable mechanisms for the funding contributions to these missions, as well as shorter-term mechanisms which are flexible and responsive to the dynamic and fast-changing nature of global grand challenges.
15. fostering increasing international collaboration between GRC participants is crucial in enabling countries to better respond to emerging challenges through mission-oriented research frameworks, by bringing together a wide range of unique skills, expertise and resources to help address global grand challenges.
16. the role of the GRC in supporting and promoting mission-oriented research is to provide a strong, collective voice in discussions with wider stakeholders, as well as by fostering a common understanding and framework for developing effective missions through the publication and endorsement of Statements of Principles.

Further considerations for the desire and need for a collaborative approach by GRC participants in addressing global grand challenges

GRC participants also acknowledge moving forwards:

1. the need for funding agencies to work together in support of the accomplishment of missions that seek the attainment of global grand challenges.
2. the continuing ambition of these agencies to pursue shared objectives and voluntary collaboration, in line with the GRC's *Statement of Principles on Capacity Building and Connectivity Among Granting Agencies Worldwide* (2017).
3. the United Nation's 2030 Agenda for Sustainable Development, underpinned through the SDG framework, offer a timely and important opportunity from which to develop a common understanding and approach towards collaborative activity.
4. Identifying and developing opportunities for concerted collaborative action between GRC participants – either through the GRC or outside of it – will further advance the attainment of the SDGs, and in turn harness the opportunity presented by the UN's Agenda 2030.
5. The ever-changing nature of global grand challenges requires funding agencies to rapidly adapt and respond in a coordinated fashion. The COVID-19 pandemic has highlighted the importance for this coordinated global research funding and collaboration.