

Dissemination and Outreach in Research and Innovation Lessons from Science Granting Councils Initiative (SGCI)-Phase II

Prepared for International Development Research Centre (IDRC)

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Synthesis Report
March 2026

ACKNOWLEDGMENT

The African Centre for Technology Studies (ACTS) sincerely appreciates the support of its funding partners: International Development Research Centre (IDRC), the UK's Foreign, Commonwealth & Development Office (FCDO), South Africa's National Research Foundation (NRF), the Swedish International Development Cooperation Agency (Sida), Deutsche Forschungsgemeinschaft (DFG) - German Research Foundation, and the Norwegian Agency for Development Cooperation (Norad).

We also thank the leadership and staff of the Science Granting Councils (SGCs) for providing the information that formed the basis of this synthesis and for their commitment to strengthening evidence-based national innovation systems. Appreciation is extended to the Collaborating Technical Agencies (CTAs) for their expertise in policy, monitoring and evaluation, research management, gender inclusion, science communication, and innovation, which greatly supported capacity building within the SGCs. We also acknowledge the researchers, innovators, policymakers, and private sector actors whose contributions demonstrate the impact of Science Granting Councils Initiative (SGCI) in advancing African science for sustainable development.

Finally, we thank the research team for their dedication in compiling this synthesis and its key lessons.

EXECUTIVE SUMMARY

The Science Granting Councils Initiative (SGCI) in Sub-Saharan Africa aims to strengthen the capacities of science granting councils in sub-Saharan Africa in order to support research and evidence-based policies that will contribute to the continent's economic and social development. This report is a synthesis of dissemination and outreach activities undertaken under the Science Granting Councils Initiative Phase 2 (SGCI-2) implemented between 2020 and 2023, with a specific focus on how research outputs/results were communicated. The primary objective of the synthesis was to examine the strategies employed in dissemination and outreach for research projects under SGCI-2 and their effectiveness in translating scientific knowledge into usable, accessible and policy relevant outputs.

Key Findings

The findings from the synthesis reveal a rich blend communication products, channels and strategies to disseminate outputs and outcomes of research projects under SGCI-2 including journals, policy briefs, technical reports, institutional websites, social media, community engagement sessions/trainings, workshops, webinars, trade and science fairs, conferences and exhibitions. These communication products and channels were used to engage stakeholders i.e. policy makers, researchers, members of the public, private sector, academia, industry and local communities, leading to stronger research collaborations, improving uptake of research outputs and catalyzing adoption of new technologies. Additionally, the dissemination and outreach activities influenced national policies and enhanced visibility of the projects.

This report also highlights some of the best practices on dissemination and outreach employed by SGCI-2 research projects. Uganda projects stood out as having effectively utilized a blend of traditional and modern communication channels, combining social media, journals, institutional websites and local/international media to disseminate research findings. This multi-platform approach ensured accessibility of research findings to academic, policy, and public audiences. In Malawi, a major milestone was the operationalization of the national Science and Technology Fund, which had been dormant since 2003. Persistent advocacy by NCST, bolstered by research dissemination efforts, resulted in Treasury funding of MK 291 million and MK450 million in successive years. In Tanzania, Sunflower and avocado processing technologies were piloted in community-accessible areas, allowing user feedback and practical demonstrations. This encouraged adoption by SMEs and local producers.

However, despite the positive outcomes, inconsistent dissemination planning, limited use of outcome-based monitoring, uneven dissemination and outreach across Councils as well as well as limited private sector involvement undermined the effectiveness of dissemination and outreach activities of research projects under SGCI-2. Measuring the impact of the dissemination and outreach efforts also proved a major challenge.

Recommendations

Based on the analysis of dissemination and outreach activities under SGCI-2, the following recommendations are proposed.

Challenge: Though SGCI-2 projects made great efforts to disseminate research results, to maximize, there is a need to move from ad hoc dissemination to a more strategic, evaluated, and institutionalized practice.

Recommendation 1: SGCI-2 projects should develop a comprehensive dissemination and outreach plan with clear objectives, target audiences, key messages and communication channels.

Challenge: While there are instances of presentations and reports, systematic documentation and collation of project processes, lessons learned and success stories is lacking.

Recommendation 2: Create a centralized repository or digital portal and Ensure all technical reports and outputs are uploaded

Challenge: There's minimal mention of how the success of outreach efforts were measured, and where they were mentioned, they were not standardized.

Recommendation 3: Develop and adopt a standardized M&E framework across all councils to track the reach and effectiveness of dissemination and outreach efforts.

Challenge: The SGCI-2 research projects seem not to have had a forum for cross-country and cross-project learning and sharing.

Recommendation 4: SGCI-2 projects should plan for annual cross-country learning symposium or webinars for knowledge exchange among SGCI partners.

Challenge: While several projects developed great products and technologies, communication and outreach activities were not commensurate.

Recommendation 5: Councils should provide training in digital communication strategies to ensure effective messaging and engagement and publication writing workshops and mentorship to improve output quality of dissemination products.

Challenge: Though there were partnerships between councils and projects with policymakers, they were not institutionalized and formal.

Recommendation 6: Create formal engagement pathways between researchers and decision-makers by institutionalizing regular policy dialogues, linked to project milestones.

Challenge:

Recommendation 7: Formalize partnerships with private sector entities through innovation platforms or business incubators to facilitate commercialization and sustainability of technologies.

Challenge:

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ABBREVIATIONS

AI	Artificial intelligence
AJIE	African Journal of Innovation and Entrepreneurship
AJSTID	African Journal of Science, Technology, Innovation and Development
BMJ	British Medical Journal
CBPR	Community-Based Participatory Research
CoP	Community of Practice
ICT	Information and Communication Technology
IDRC	International Development Research Centre
IR	Institutional Repository
ISF	Interactive Systems Framework
KTA	Knowledge-to-Action Framework
M&E	Monitoring and Evaluation
MDPI	Multidisciplinary Digital Publishing Institute
MK	Malawian Kwacha (currency)
MOU	Memorandum of Understanding
NCST	National Commission for Science and Technology (Malawi)
NGO	Non-Governmental Organization
ORCID	Open Researcher and Contributor ID
PPP	Public-Private Partnership
RE-AIM	Reach, Effectiveness, Adoption, Implementation, Maintenance
RIM	Research and Innovation Management
SGC	Science Granting Council
SGCI	Science Granting Councils Initiative
SGCI-2	Science Granting Councils Initiative Phase 2
STI	Science, Technology and Innovation
WADR	West Africa Democracy Radio

1. BACKGROUND AND CONTEXT

1.1 Introduction

One of the main goals of scientific research is to expand our understanding of the natural world and to develop new technologies, medicines, and solutions to pressing problems. However, this knowledge is of little use if it remains confined to the narrow circle of researchers. Dissemination and outreach are essential to ensure that scientific knowledge reaches a broader audience, including other scientists, policymakers, practitioners, educators, and the general public. By disseminating their findings, scientists can solicit feedback, collaboration, and support, and contribute to the growth of knowledge in their field.¹ Effective dissemination and outreach promotes evidence-based decision-making, facilitates policy influence, fosters innovation, and enhances collaboration among diverse stakeholders.

Both scientific dissemination and outreach are communications activities. Scientific articles currently constitute a type of written discourse with specific form and content conditions that make it possible to fulfil the final objective of communicating and disseminating the results of a scientific project to the scientific community. These publications form part of a researcher's professional curriculum vitae and constitute an essential part of their research activity. Outreach activities provide visibility through different types of communications media; they target general public in order to make scientific knowledge accessible to society and citizens.²

Dissemination of research findings refers specifically to the process of sharing research findings – data and information – with target audiences. This includes publishing in academic journals, manuscripts, presenting at conferences and distributing reports or policy briefs and reports. The goal is to inform, influence, or enable use of the research, often within scholarly, policy, or professional circles. Dissemination is most often addressed by researchers through scientific manuscript publications and presentations. These publications form part of a researcher's professional curriculum vitae and constitute an essential part of their research activity.³

Meanwhile, research outreach is broader and involves engaging with the public, communities, or stakeholders beyond academia and creating partnerships and collaborations. It aims to build relationships, raise awareness and often foster dialogue or collaboration. Outreach may include public talks, workshops, community-based activities, media appearances, or social media engagement. Outreach can enhance dissemination by making research findings more visible and relevant to a wider audience. In summary, **dissemination** is about **getting the message out**, while **outreach** is about **connecting with people** and often encouraging action or participation. Outreach programs, such as science museums, public lectures, and school visits, are another way to disseminate scientific knowledge to the general public. These programs aim to increase public understanding and appreciation of science, inspire young people to pursue scientific careers, and promote scientific literacy and critical thinking skills. Outreach programs have several advantages, including making science more accessible, engaging, and relevant to diverse audiences, fostering dialogue and trust between scientists and the public, and improving the reputation and visibility of science.⁴ The purpose of outreach activities is to give visibility through different types of communications media and they are aimed at a more general public in order to make scientific knowledge accessible to society and citizens.⁵

Essentially, research dissemination and outreach refers to the activities researchers undertake to communicate their work to audiences outside the traditional academic community. The goal is to make

1 <https://opusproject.eu/openscience-news/dissemination-of-scientific-knowledge/>

2 <https://iqs.edu/en/iqs/news/scientific-dissemination-and-outreach/>

3 <https://iqs.edu/en/iqs/news/scientific-dissemination-and-outreach/>

4 <https://opusproject.eu/openscience-news/dissemination-of-scientific-knowledge/>

5 <https://iqs.edu/en/iqs/news/scientific-dissemination-and-outreach/>

research accessible, relevant, and impactful to the public, policymakers, industry, educators, and other stakeholders. It bridges the gap between complex scientific findings and societal understanding or application. **The goal of dissemination and outreach is to enhance the awareness and uptake of research findings.** Communicating research findings beyond traditional academic and scientific communities is a vital component to research dissemination and outreach.⁶ As with virtually all areas of life, research dissemination has been disrupted by the internet and digitally networked technologies. The last two decades have seen the majority of scholarly journals move online, and scholarly books are increasingly found online as well as in print. However, these traditional communication vehicles have largely retained similar functions and formats during this transition.⁷ However, there is a paradox at play: while there are more avenues for the widespread dissemination of research outputs, researchers tend nonetheless to value and focus upon just a few traditional outputs - journal articles, books, and conference presentations.

According to Grant (2021), conducting research is challenging. It takes a great deal of hard work and effort. Yet, research findings can influence policy and practice positively, but only if the results reach a broad audience. Hence, widely disseminating findings can significantly increase the impact of the research. Therefore, before the research project begins, the strategy for dissemination should be considered. Developing an effective plan to disseminate the results is essential and will give funders/sponsors confidence in their research investment. In addition, some research funders/sponsors require research they sponsor to make results available to the public (i.e., open-access publication – the process of allowing published articles free of charge and available online) (McGrath, 2016).

1.2 Why is Dissemination and Outreach for Research Results Important?

Scientific research is the driving force behind many advancements, from healthcare to technology and beyond. However, **the true impact can only be realised when it reaches a wider audience through the effective dissemination of scientific knowledge,** becoming accessible to scientists, policy makers, practitioners, and the general public. This wider access to scientific research fosters collaboration, innovation, informed decision-making and trust. Transparency of intent is as important as the research itself. It lets the public and other stakeholders know the limitations being adhered to, and the goals scientists are aiming to achieve.⁸

Dissemination and outreach for research results is an important aspect of the research process because it ensures that the benefits of the study are passed on to others and that it is put to good use. A research's proper dissemination and outreach is supposed to draw the attention of governments or stakeholders to the research's outcomes, giving a social, political, or economic impact.⁹ Dissemination and communication of research should be considered as an integral part of any research project. Both help in increasing the visibility of research outputs, public engagement in science and innovation, and confidence of society in research. Effective dissemination and outreach are vital to ensure that the conducted research has a social, political, or economic impact. They draw attention of governments and stakeholders to research results and conclusions, enhancing their visibility, comprehension, and implementation.¹⁰

Dissemination and outreach helps to ensure that the results of a research project are widely available and accessible to other researchers and practitioners. This is important because it enables others to build upon the work that has been done, and to develop new ideas and innovations based on the findings of the research. This can lead to new discoveries and breakthroughs, and help to drive the field forward. Another key benefit of dissemination and outreach is that it helps to increase the visibility and impact of a research project. By publishing the results of a research project in peer-reviewed journals or presenting them at

6 <https://victor.vumc.org/dissemination-of-research-results/#:~:text=Simply%20put%2C%20dissemination%20is%20about,can%20benefit%20from%20those%20findings.>

7 <https://pmc.ncbi.nlm.nih.gov/articles/PMC7161944/>

8 <https://sciencepod.net/why-is-scientific-dissemination-important/>

9 <https://mindthegraph.com/blog/dissemination-of-research/>

10 <https://pubmed.ncbi.nlm.nih.gov/27799595/>

conferences, researchers can reach a wider audience and generate more interest in their work. This can help to raise the profile of the research and its authors, and increase the chances of securing future funding or collaborations. In addition, dissemination can also help to increase the impact of a research project by bringing the results to the attention of practitioners, policymakers, and the public. This helps ensure that the research is used to address real-world problems, and that it has a direct and tangible impact on society.¹¹

1.3 About the Science Granting Councils Initiative (SGCI)

The Science Granting Councils Initiative (SGCI) in sub-Saharan Africa is focused on strengthening the capacities of councils to support research and evidence-based policies that will contribute to economic and social development. During 2020-2023, twelve Science Granting Councils (Botswana, Burkina Faso, Cote d'Ivoire, Malawi, Mozambique, Namibia, Rwanda, Senegal, Tanzania, Uganda, Zambia and Zimbabwe) participated in Theme 3 of the phase two of the Science Granting Councils Initiative (SGCI-2) focusing on strengthening Science, Granting Councils to manage research competitions for impact and development). The goal of this project was to increase the capacity of the Councils to manage research calls, predominantly through learning by doing. Four indicators were used to track and assess the progress towards achieving this goal: number of projects funded, addressing the needs of private sector, mainstreaming gender and inclusivity in research, and managing collaborative calls and projects. The objectives of the Science Granting Councils Initiative include strengthening the ability of science granting councils to:¹²

- i. Manage research.
- ii. Design and monitor research programmes based on the use of robust STI indicators.
- iii. Support knowledge exchange with the private sector.
- iv. Establish partnerships between councils and other science system actors.

The SGCI-2 has played a pivotal role in strengthening the research and innovation ecosystem across Africa. The second phase of the initiative supported numerous projects between 2020 and 2023, fostering collaboration among researchers, institutions, and industry while advancing national and continental development agendas. As many of these projects have concluded, synthesizing their key outcomes and impacts is essential to generate evidence for policy and funding decisions, improve research implementation, and enhance knowledge-sharing among stakeholders.

The primary objective of this synthesis study is to assess the strategies, effectiveness, and outcomes of communication, dissemination and outreach activities employed by SGCI-2-supported projects in engaging policymakers, communities, and industry stakeholders. Specifically, the synthesis aims to:

- i. To explore the strategies and tools for dissemination and outreach employed by SGCI 2 research projects.
- ii. Document the outcomes of dissemination and outreach efforts under SGCI -2 projects.
- iii. Examine the role of technology in enhancing dissemination and outreach efforts.
- iv. Identify barriers, lessons and best practices relating to dissemination and outreach activities for SGCI research projects.
- v. Provide practical recommendations for improving the effectiveness, efficiency and impact of dissemination and outreach activities under SGCI-2

This review draws on existing theoretical frameworks, including the Knowledge-to-Action (KTA) framework, which emphasizes the process of translating research findings into actionable knowledge, and the Diffusion of Innovations Theory, which explains how new ideas and findings spread across various audiences. Other theoretical frameworks that forms the basis of this synthesis include Reach, Effectiveness, Adoption, Implementation and Maintenance (RE-AIM) framework, Social Marketing Theory, the Interactive Systems Framework (ISF) for Dissemination and Implementation and Communities of Practice Model. By synthesizing

11 <https://lifeadaptablues.eu/dissemination-as-a-key-factor-of-research-projects/>

12 African Technology Policy Studies Network (ATPS) & The Scinnovent Centre, 2017.

existing research on dissemination and outreach, this review provides insights into best practices, challenges, and opportunities for enhancing the impact of SGCI projects through effective communication strategies.

1.4 Key Research Questions

The synthesis study focused on the following key questions:

1. How did SGCI projects communicate their work to relevant audiences: policymakers, communities, and industries? What channels were used? How effective were they?
2. Did the projects have ways of measuring communication and outreach activities on public understanding, policy changes, and research collaborations?
3. What role did digital tools, online platforms, or social media play in reaching broader audiences and how did the projects innovate in using technology for science communication?
4. What were the outcomes of dissemination and outreach activities?
5. What barriers/challenges were encountered in dissemination, how were they addressed and what lessons can we learn?
6. What best practices on dissemination and outreach can be glimpsed from the research projects?
7. What recommendations can help improve communication and outreach in future SGCI-supported initiatives?

1.5 Methodology

This landscape analysis and literature review adopt a desk-based research methodology, which involves the systematic identification, review, and synthesis of existing literature and documented evidence on research dissemination and outreach. Key steps in the methodology include:

- ▶ **Literature Search and Selection:** Relevant academic articles, policy reports, institutional documents, and best-practice case studies were identified through databases such as Google Scholar, Scopus, and Web of Science.
- ▶ **Thematic Analysis:** The collected literature was analyzed to identify recurring themes, best practices, challenges, and theoretical frameworks related to dissemination and outreach.
- ▶ **Comparative Analysis:** Existing dissemination strategies were compared to evaluate their effectiveness, with a focus on the SGCI-2 context.
- ▶ **Validation and Triangulation:** Findings were cross-referenced with multiple sources to ensure reliability and validity.

1.6 Synthesis Conceptual Framework

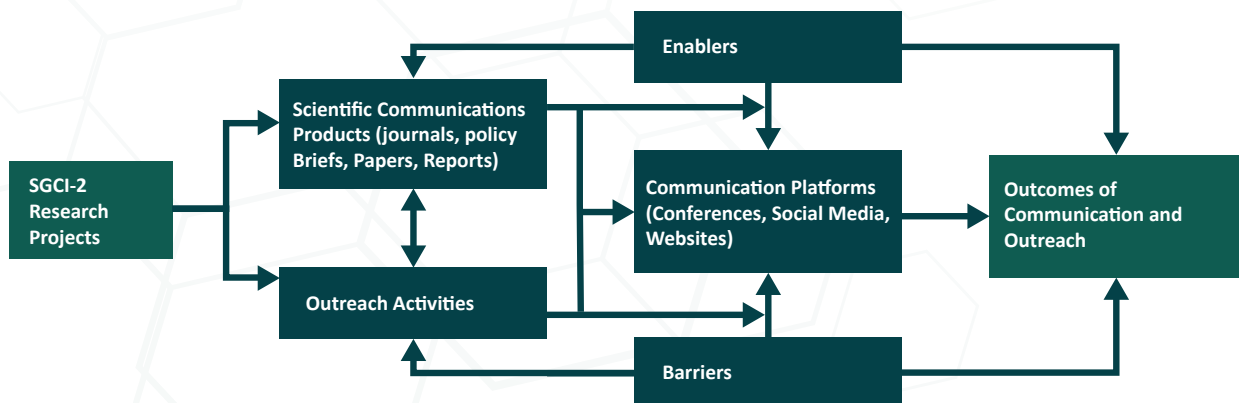


Figure 1: Synthesis conceptual framework

2. LANDSCAPE REVIEW

2.1 Introduction

The push towards greater public understanding of science and research since the 1980s, and an emphasis on engagement and participation of non-research audiences have brought about new forms of dissemination. These approaches include popular science magazines and science shows on television and the radio. In recent years, new types of events have emerged that aim at involving the general public within the research process itself, including science slams and open lab days. With science cafés and hackerspaces, novel, participatory spaces for research production and dissemination are emerging – both online and offline. Powerful trends towards responsible research and innovation, the increasing globalization of research, and the emergence and inclusion of new or previously excluded stakeholders or communities are also reshaping the purposes of dissemination as well as the scope and nature of its audiences. (Stilgoe, Lock, and Wilsdon, 2014).

Many now view wider dissemination and public engagement with science to be a fundamental element of open science. However, while there have never been more avenues for the widespread dissemination of research, researchers tend nonetheless to value and focus upon just a few traditional outputs: journal articles, books, and conference presentations. (Sengupta and Shanahan, 2017). McCormack, et al (2013) argue that researchers often have limited exposure to methods that offer them guidance in communicating and disseminating study findings in ways likely to improve awareness, adoption, and use of their findings. Researchers also lack expertise in using communication channels such as traditional journalism platforms, live or face-to-face events such as public festivals, lectures, and panels, and online interactions (Wilson et al, 2010). In addition, few strategies provide guidance for researchers about how to develop communications that are audience-centered, contain plain language, create awareness of the influence of findings on participant or population health, and increase the likelihood of enrollment in future studies. Consequently, researchers often rely on traditional methods (e.g., presentations at scientific meetings and publication of study findings in peer-reviewed journals) despite evidence suggesting their limited reach and/or impact among professional/scientific and/or lay audiences. (Bultitude, 2010; Brownson et al, 2008). Research findings are disseminated through various channels, each suited to different target audiences. Traditional channels include academic publications, policy briefs, technical reports, workshops, and conferences, which remain essential for credibility and engagement with policymakers and scholars (Brownson et al., 2018). Additionally, public lectures, print media, and community-based meetings serve as important conduits for reaching broader societal groups.

2.1.1 Planning for Dissemination and Outreach

Effective dissemination of findings is a cornerstone of the research partnership and a proxy indicator of research impact (Harris and Tanner, 2000). Dissemination should be considered from the beginning of the research project. Planning how research will be shared can help guide the research process and maintain focus on the project's ultimate goal. And depending on the nature of the research, some information may be communicated before the entire project is completed. (e.g., news releases may be sent out at various stages of the project to generate interest and update the public on what's happening.¹³ Though libraries and journalists have served as knowledge intermediary historically, their effectiveness in the present day has become questionable. They are often not utilized presently by researchers or policy makers since they do not find those areas adequate place to source for evidence-based research. These traditional platforms do not attract the traffic of readers they used to enjoy due to the surge in online platforms. This calls for exploring multi dynamic ways of processing and sharing research output. This multi-dynamic approach calls for a conceptualization of how outreach can be made effective. More to this daunting task remains

13 <https://www.american.edu/provost/ogps/graduate-studies/upload/dissemination-toolkit.pdf>

the issue of not incorporating research communication, dissemination and uptake in the larger project planning phase. The general thinking has been that, academics are only knowledge generators or producers. Other groups or entities should take it upon themselves to access that knowledge produced and make it usable for the larger community. The demerit of this argument is the unresolved question of what the merit is in strenuously conducting cutting edge research only for the findings to remain within the academic walls if researchers decide not to communicate or disseminate.¹⁴

2.1.2 Public Engagement and Collaboration

One of the most powerful ways to maximize the impact of research is by engaging with the public. While publishing in academic journals is crucial for reaching fellow researchers, the general public can also benefit from your work through blog posts, create infographics, or give public lectures. Researchers can also utilize social media platforms to share snippets of research, discuss its relevance, and interact with a wider audience and or reach out to journalists and media outlets to help translate research into news stories, interviews, or features. Traditional academic publishing can be restrictive in terms of access, as many research papers are locked behind paywalls. Open access publishing models are gaining popularity because they make research freely available to anyone with an internet connection.¹⁵

Collaboration and networking are also essential for disseminating research effectively. This can be done through partnering with researchers from different institutions, disciplines, or countries; presenting research at conferences, providing an excellent opportunity for dissemination; and participating in research networks and organizations related to a particular field of study. Many funding agencies and organizations offer grants specifically for public engagement and outreach. These grants can support activities such as science festivals, educational programs, and exhibitions related to your research. It is important to note that research can have a significant impact on policy decisions and advocacy efforts through publication of policy briefs, which are then shared with relevant government agencies and advocacy groups; establishing connections with policymakers and engage in discussions about how research can inform policy decisions; and Partnering with advocacy organizations that align with research goals. They can help amplify key messages and reach a broader audience of stakeholders. Another effective way to disseminate research findings is through educational outreach by creating educational materials, lesson plans, or online courses based on research materials; organizing workshops or training sessions for educators to help them incorporate research into their teaching; and partnering with local schools, colleges, and universities to give guest lectures, offer research opportunities to students, and collaborate on educational initiatives. Engaging the public in the research process itself can be a powerful form of dissemination. Citizen science projects and crowdsourcing initiatives involve non-experts in data collection, analysis, and problem-solving. By involving the public, you can increase the reach and impact of your research while also fostering a sense of ownership and engagement. Platforms like Zooniverse and Foldit offer opportunities for such collaborations.¹⁶

14 https://www.researchgate.net/profile/Seth-Christopher-Yaw-Appiah/publication/309182457_Reflections_on_Research_Communication_Dissemination_and_Uptake_to_Impact_Outreach/links/580917bd08ae993dc0509f20/Reflections-on-Research-Communication-Dissemination-and-Uptake-to-Impact-Outreach.pdf

15 <https://ecorrector.com/maximizing-impact-strategies-for-disseminating-your-research-beyond-publications/>

16 Ibid

2.2 Theoretical Frameworks in Research Dissemination and Outreach

Several theoretical models underpin effective dissemination and outreach strategies in research projects. These frameworks help explain how knowledge is transferred, adopted, and applied in various contexts, ensuring that research findings reach the intended audiences and lead to meaningful changes.

2.2.1 RE-AIM Framework

Reach, Effectiveness, Adoption, Implementation and Maintenance (RE-AIM) framework was originally developed as a framework for consistent reporting of research results and later used to organize reviews of the existing literature on health promotion and disease management in different settings. More recently, RE-AIM has been used to translate research into practice and to help plan programs and improve their chances of working in “real-world” settings. The framework has also been used to understand the relative strengths and weaknesses of different approaches to health promotion and chronic disease self-management—such as in-person counseling, group education classes, telephone counseling, and internet resources. The goal of RE-AIM is to encourage program planners, evaluators, readers of journal articles, funders, and policy-makers to pay more attention to essential program elements including external validity that can improve the sustainable adoption and implementation of effective, generalizable, evidence-based interventions. According to this framework, the five steps to translate research into action are:¹⁷

- ▶ **Reach** - The absolute number, proportion, and representativeness of individuals who are willing to participate in a given initiative, intervention, or program.
- ▶ **Effectiveness (or Efficacy)** - The impact of an intervention on important outcomes, including potential negative effects, quality of life, and economic outcomes.
- ▶ **Adoption** - The absolute number, proportion, and representativeness of settings and intervention agents (people who deliver the program) who are willing to initiate a program.
- ▶ **Implementation** - At the setting level, implementation refers to the intervention agents’ fidelity to the various elements of an intervention’s protocol, including consistency of delivery as intended and the time and cost of the intervention. At the individual level, implementation refers to clients’ use of the intervention strategies.
- ▶ **Maintenance** - The extent to which a program or policy becomes institutionalized or part of the routine organizational practices and policies. Within the RE-AIM framework, maintenance also applies at the individual level. At the individual level, maintenance has been defined as the long-term effects of a program on outcomes after 6 or more months after the most recent intervention contact.

2.2.2 Social Marketing Theory

Social Marketing Theory is a concept that focuses on the use of marketing principles and techniques to influence behaviors for social good. Unlike traditional marketing, which aims to sell products or services, social marketing aims to promote beneficial behaviors, such as improving public health, protecting the environment, or encouraging social change. The theory emphasizes understanding the needs, desires, and behaviors of the target audience to create campaigns that effectively encourage positive changes. A common real-life example of social marketing can be seen in anti-smoking campaigns. These campaigns use persuasive messaging, social media outreach, and other marketing techniques to discourage smoking and promote healthier lifestyles. The theory is relevant to the dissemination and outreach of research results because it provides a strategic framework for influencing behavior and increasing the adoption of new knowledge or practices among target audiences. Social marketing begins with understanding the needs, preferences, values, and barriers of specific target audiences. When disseminating research, it is important to identify who the research is for and tailor the message and delivery method accordingly. Also, the ultimate goal of dissemination is not just to share information but to influence action; whether it’s changing clinical practice, informing policy, or raising awareness. The theory also focuses on changing behavior, which aligns well with research uptake and implementation efforts.

17 <https://re-aim.org/learn/what-is-re-aim/>

2.2.3 *The Interactive Systems Framework (ISF) for Dissemination and Implementation*

The Interactive Systems Framework for Dissemination and Implementation (ISF) that uses aspects of research to practice models and of community-centered models. The framework presents three systems: the Prevention Synthesis and Translation System (which distills information about innovations and translates it into user-friendly formats); the Prevention Support System (which provides training, technical assistance or other support to users in the field); and the Prevention Delivery System (which implements innovations in the world of practice). The framework is intended to be used by different types of stakeholders (e.g., funders, practitioners, researchers) who can use it to see prevention not only through the lens of their own needs and perspectives, but also as a way to better understand the needs of other stakeholders and systems. It provides a heuristic for understanding the needs, barriers, and resources of the different systems, as well as a structure for summarizing existing research and for illuminating priority areas for new research and action.¹⁸ By emphasizing translation of research outputs, this model ensures research is accessible to non-experts while the support systems help build the capacity of end-users, making it more likely that research findings will be implemented. The model also highlights the need for coordinated systems and infrastructure to move research into practice effectively. The various components of this model work together dynamically, emphasizing collaboration among researchers, intermediaries, and practitioners. Essentially, this model guides researchers in thinking beyond publication - toward real-world impact.

2.2.4 *Communities of Practice Model*

A community of practice (CoP) is a group of people who share a common concern, a set of problems, or an interest in a topic and who come together to fulfill both individual and group goals. Communities of practice often focus on sharing best practices and creating new knowledge to advance a domain of professional practice. Interaction on an ongoing basis is an important part of this. Many communities of practice rely on face-to-face meetings as well as web-based collaborative environments to communicate, connect and conduct community activities.¹⁹ Communities of practice are everywhere and because they are so informal and pervasive they are rarely focused on. (Wenger, 1998). Focusing on them allows us to deepen, to expand and to rethink our intuitions. On the one hand, a community of practice is a living context that can give newcomers access to competence and also can invite a personal experience of engagement by which to incorporate that competence into an identity of participation. On the other hand, a well-functioning community of practice is a good context to explore radically new insights without becoming fools or stuck in some dead end. A history of mutual engagement around a joint enterprise is an ideal context for this kind of leading-edge learning, which requires a strong bond of communal competence along with a deep respect for the particularity of experience. When these conditions are in place, communities of practice are a privileged locus for the creation of knowledge. CoP was originally developed to provide a template for examining the learning that happens among practitioners in a social environment, but over the years there have been important divergences in the focus of the concept. Lave and Wenger's earliest publication (1991) centred on the interactions between novices and experts, and the process by which newcomers create a professional identity. In the 1998 book, the focus had shifted to personal growth and the trajectory of individuals' participation within a group (i.e., peripheral versus core participation). The focus then changed again in 2002 when CoP was applied as a managerial tool for improving an organization's competitiveness.²⁰

18 <https://onlinelibrary.wiley.com/doi/10.1007/s10464-008-9174-z>

19 <https://www.communityofpractice.ca/background/what-is-a-community-of-practice/>

20 <https://implementationscience.biomedcentral.com/articles/10.1186/1748-5908-4-11>

2.2.5 Knowledge-to-Action (KTA) Framework

The Knowledge-to-Action (KTA) framework (Graham et al., 2006) is widely used to understand how research findings can be effectively translated into practice. The KTA model consists of two key components: the knowledge creation cycle and the action cycle. The knowledge creation cycle involves the generation, synthesis, and tailoring of research findings to meet the needs of specific stakeholders. The action cycle focuses on the implementation of this knowledge through strategies such as capacity-building, stakeholder engagement, and policy advocacy. The KTA framework emphasizes the iterative nature of knowledge translation, where continuous feedback and adaptation are essential. Effective dissemination under this framework involves identifying knowledge users, selecting appropriate communication channels, and ensuring that research findings are presented in an accessible and actionable manner. In SGCI projects, this framework can guide efforts to align research dissemination with policy and industry needs, thereby increasing the likelihood of research uptake and application.

2.2.6 Diffusion of Innovations Theory

The Diffusion of Innovations Theory (Rogers, 2003) provides a comprehensive explanation of how new ideas, technologies, and research findings spread within a population or organization. The theory identifies five key attributes that influence the adoption of innovations:

1. **Relative Advantage** – The perceived benefit of adopting the research findings compared to existing practices.
2. **Compatibility** – The degree to which the findings align with the values, needs, and experiences of the target audience.
3. **Complexity** – The ease or difficulty of understanding and applying the research.
4. **Trialability** – The ability to test or experiment with the research findings before full adoption.
5. **Observability** – The extent to which the benefits of the research are visible to others.

The diffusion process occurs through five stages: knowledge, persuasion, decision, implementation, and confirmation. Effective dissemination strategies under this theory involve leveraging trusted opinion leaders, using diverse communication channels, and addressing barriers to adoption. In the context of SGC-2 projects, applying the Diffusion of Innovations Theory ensures that research findings are strategically communicated to different stakeholders, enhancing their adoption and impact.

2.2.7 Other Relevant Theoretical Models

Beyond the KTA framework and Diffusion of Innovations Theory, other models provide additional insights into research dissemination and outreach:

- ▶ **Community-Based Participatory Research (CBPR) Model** – Emphasizes the active involvement of communities in research dissemination, ensuring that findings are contextually relevant and actionable.
- ▶ **Stakeholder Theory** – Highlights the importance of engaging diverse stakeholders, including policymakers, industry leaders, and community members, to co-create knowledge and enhance dissemination outcomes.

- ▶ **Knowledge Exchange Model** – Focuses on two-way interactions between researchers and knowledge users to ensure that dissemination efforts are collaborative and impactful.

2.3 Key Enablers of Dissemination and Outreach

2.3.1 Open Access Publishing

Open access is a publishing model for scholarly communication that makes research information available to readers at no cost, as opposed to the traditional subscription model in which readers have access to scholarly information by paying a subscription.²¹ A publication is considered open access if:²²

- ▶ Its content is universally and freely accessible, at no cost to the reader, via the Internet or otherwise.
- ▶ The author or copyright owner irrevocably grants to all users, for an unlimited period, the right to use, copy, or distribute the article, on condition that proper attribution is given.
- ▶ It is deposited, immediately, in full and in a suitable electronic form, in at least one widely and internationally recognized open access repository committed to open access.

Also, open access includes the right to reuse the research material. Open access articles have the advantage of being accessible to all readers free of charge, including policy makers, which increases the chance of being cited by the readers. Publishing in an open access journal will make the paper available to all readers free of charge. With open access, expensive prices and copyrights will no longer be obstacles to the dissemination of knowledge. Everyone is free to add information, modify contents, translate texts into other languages, and disseminate an entire electronic publication.²³ Without financial or institutional access limitations, research can reach a broader audience, including policymakers, practitioners, educators, journalists, and the general public. Also, open access articles are generally more visible online and tend to be cited more often, which enhances the academic impact and discoverability of the research. With open access, Journalists, NGOs, and advocates can easily access and reference open-access research in their work, help bridge the gap between science and society.

2.3.2 Effective Use of Social Media

Many studies have shown that there is a statistically significant correlation between social media mentions such as posts, tweets, blogs and citation counts. Every social media platform offers the facility to form thematic groups or clubs. Adding relevant people to a like-minded, subject-related group will create a personalised channel to reach a larger number of target audiences and ensure reception. The hashtag (#) is the most widely used means of classifying content on social media. It makes one's own content searchable and allows one to find relevant content from related areas. The hashtag also allows one to connect with and engage other social media users based on a common theme or interest. The more focused and exact the hashtag, the more targeted the audience will be; a targeted audience generally means better engagement. Making infographic summaries of research findings helps in gaining attention and rapid dissemination using social media, as images are easier to share.²⁴ Social media have become more widely used among researchers and the use of blogs and wikis as a specific form of 'open notebook science' has been popular for more than a decade.

2.3.3 Stakeholder Engagement

Stakeholder engagement in research is the process of working together with stakeholders for a common goal. Stakeholders are individuals or organizations who have an interest in a research project, or who affect or are affected by its outcomes. Stakeholders include those who are both supportive of your research and those who may be less supportive or even critical of it.²⁵ Stakeholders come from groups and organizations,

21 <https://www.openaccess.nl/en>

22 <https://www.unesco.org/en/open-access>

23 <https://www.unesco.org/en/open-access>

24 <https://pmc.ncbi.nlm.nih.gov/articles/PMC5526489/>

25 <https://vitae.ac.uk/resource/working-in-research/leading-research/developing-a-research-proposal/>

such as funders, donors, community members, advocacy organizations, patients, trade associations, businesses, policymakers, policy advocates working in the nongovernmental sector, and product developers. Stakeholders can play a key role in publishing research findings in formats beyond journals, helping to tailor messages to specific audiences. They can facilitate the use of findings for decision making and practice application. Stakeholders can also influence further research in their role advising other projects in how best to use knowledge from prior results, informing how knowledge is used. (Sudsawad, 2007). A barrier to evidence-informed decision making is the gap between the needs of end users and the evidence presented. Engagement overcomes this barrier by giving insights into how different groups like to receive information and the different avenues that can be used to share it. The greater the understanding of this, the better the chance of the research evidence achieving its desired impact. (Campbell et al., 2008). Engaging stakeholders such as policymakers, practitioners, community members, and industry partners ensures the research addresses real-world problems and increases the likelihood that findings will be used in practice. Stakeholders can help tailor the messaging, format, and channels for communication, making the research more understandable and accessible to target audiences. In addition, stakeholders often have established networks and platforms through which they can help amplify dissemination efforts, reaching broader or more diverse audiences than researchers might reach alone. Finally, stakeholders can provide critical feedback during dissemination, which may reveal gaps, misunderstandings, or additional needs, helping refine outreach strategies or guide future research.

Effective engagement requires tailoring communication strategies to the specific needs and preferences of different audiences. Policymakers often rely on succinct, evidence-based policy briefs, stakeholder dialogues, and high-level forums to inform decision-making. Engaging them early in the research process through consultative meetings and collaborative policy development increases the likelihood of research uptake (Oliver et al., 2014).

For communities, participatory approaches such as storytelling, community forums, and radio broadcasts are more effective in conveying research insights in relatable terms (Nutley et al., 2007). The use of local languages and culturally relevant communication tools enhances accessibility and acceptance of information. Industries engage through collaborative research initiatives, public-private partnerships, and technology transfer mechanisms that facilitate the commercialization of research outputs (Perkmann et al., 2013). Mechanisms such as innovation hubs, incubators, and joint research ventures create pathways for translating academic research into tangible technological advancements and business solutions.

2.3.4 Using Multiple Channels

People consume information differently. Some prefer visual content, others like podcasts or written reports. Using a mix of media caters to varied preferences, learning styles and technological habits. Multiple channels also ensure that each group receives the research in a format and space they already engage with. Also, the more places research is shared, the higher the chance it will be seen, cited, or acted upon. This can amplify its academic, social, and policy impact. Different audiences require different approaches and language styles, identifying the correct audience is a huge factor in the successful dissemination of findings. Therefore, not all audiences have access to or prefer academic journals. Blogs, social media, webinars, infographics, and videos can make complex findings more understandable and accessible. By tailoring the research dissemination to the needs and preferences of a specific audience, researchers increase the chances of the information being received, understood, and used.²⁶

2.3.5 Leveraging Technology

As with virtually all areas of life, research dissemination has been disrupted by the internet and digitally networked technologies. The last two decades have seen the majority of scholarly journals move online, and scholarly books are increasingly found online as well as in print. However, these traditional communication vehicles have largely retained similar functions and formats during this transition. Professional academic social networks such as ResearchGate and [Academia.edu](https://www.academia.edu/) boast millions of users. New online formats for interaction with the wider public, such as TED talks broadcast via YouTube, often

26 <https://dovetail.com/research/what-is-research-dissemination/>

receive millions of views. Some researchers have even decided to make all of their research findings public in real time by keeping open notebooks. In particular, digital technologies invoke new ways of reaching and involving audiences beyond their usual primary dissemination targets (i.e., other scholars) to actively involve peers or citizens who would otherwise remain out of reach for traditional methods of communication (Clinio and Albagli, 2017; Harding, 2019.)

Digital platforms have revolutionized research communication, making knowledge more accessible and interactive. Web-based tools such as podcasts, infographics, and interactive dashboards enhance engagement by presenting complex research findings in digestible formats (Lupton, 2014). Video content, animations, and virtual reality applications further enrich user experiences, making research more relatable to different audiences. Artificial intelligence (AI) and big data analytics play an emerging role in optimizing dissemination strategies. AI-driven algorithms analyze user behavior, identifying target audiences and recommending tailored content based on engagement patterns (Rowley, 2008). Automated translation tools also enhance the accessibility of research across linguistic and cultural barriers, expanding global outreach. By integrating traditional and digital dissemination strategies, SGCI projects can maximize their research impact, foster collaborations, and contribute to policy and societal advancements. Future research should explore innovative dissemination models, leveraging cutting-edge technologies and participatory approaches to enhance research accessibility and utility.

In recent years, digital tools have expanded the reach and efficiency of dissemination efforts. Online repositories, institutional websites, and open-access journals have made research more widely accessible (Veletsianos & Kimmons, 2016). Social media platforms such as Twitter, LinkedIn, and YouTube play a significant role in engaging diverse audiences, facilitating real-time discussions, and enhancing the visibility of research outputs. Webinars and virtual conferences further support global knowledge-sharing, breaking geographical barriers to information access. New trends in research dissemination emphasize reaching broader audiences beyond traditional academic channels, utilizing digital platforms and focusing on impact-driven communication. This includes leveraging social media, podcasts, blogs, and policy briefs, along with initiatives like open access publishing and engaging with citizen scientists.

2.3.6 Using Mass Media

The media play a key role in conveying health information to researchers, clinicians, and the general public (Grimes 1999). Mass communication using news media, advertising, and marketing channels works particularly well to publicize new information and influence social norms. Media coverage of public health issues can demonstrate the benefits of particular policies, articulate obstacles to health services, or model behaviors such as responsible parenthood (Smith, 1995).

2.4 New Trends and Tools in Dissemination of Research results

As with all aspects of research, new technologies are transforming the way research is disseminated. The traditional system, in which researchers publish their results in subscription-based academic journals (or monographs), still prevails, in large part due to the continued use of the impact and prestige factor of the publishing venue as a major assessment measure of research quality and impact. However, there are also numerous initiatives and projects that are challenging the conventional models. These activities are being driven by technologies, policies, and a more expansive notion of how research should be communicated.²⁷ There are several innovative tools that have been developed to enhance dissemination of research results; these are describe below.²⁸

2.4.1 Interlinking, Commenting and Contextualization

The emergence of web-based knowledge dissemination brings novel possibilities for enhancing the functionality of publications, datasets and other related material and employ techniques such as semantic enrichment, interlinking relevant material, and commenting, sharing, personalization and contextualization functionalities allowing users to navigate and find relevant content more efficiently and easily. For example, [Hypethes.is](#) is building an open platform for discussion on the web. It leverages annotation to enable sentence-level critique or note-taking on top of news, blogs, scientific articles, books, terms of service, ballot initiatives, legislation and more.²⁹

2.4.2 Purchasing and Payment Modes

As open access gains in prevalence and there are growing requirements on researchers to ensure their publications are openly available, publishers and libraries are investigating new modes for supporting publishing that do not involve subscriptions.

2.4.3 Authoring and Collaborative Tools

These are online, often cloud-based tools that support researchers in collaborating with others during the research process and when authoring publications. They are also used for the sharing of information, data and other research materials. For example, CoS Open Science Framework offers Labs and teams across the globe a platform on which to work, share and provide access to their projects, data and publications with the research community.

2.4.4 Publishing Platforms

These initiatives are developing new platforms that use technology to link related content, provide more efficient publishing services, and lower costs. They are also challenging the current system of publishing that relies so heavily on high impact journals. [Frontiers](#) is a community-rooted, open-access academic publisher that is using new technologies to make peer-review more efficient and transparent, provide impact metrics for articles and researchers, and has merged with a research network platform, Loop, to catalyse collaboration and research dissemination and popularize research with the public.

27 https://www.carl-abrc.ca/wp-content/uploads/docs/Trends_and_Innovation_160506.pdf

28 Ibid

29 https://www.carl-abrc.ca/wp-content/uploads/docs/Trends_and_Innovation_160506.pdf

2.4.5 Data Sharing

There is a trend towards improving the stewardship of data, and greater data sharing in the academic community. The trend is being driven by a growing recognition that research data are valuable assets that, if properly managed, have virtually limitless potential to be re-used in innovative ways. The proper management of research data is also an integral part of good research practice. DataCITE provides digital object identifiers for datasets that enable users to connect research publications to their underlying data, understand the use and impact of data, promote professional credit and rewards for creating and managing data collections, and promote scientific and data transparency.

2.4.6 Researcher Social Networks

Large academic social networks have become very popular over the last several years. These networks are used by researchers to follow discussions in their field, discover potential collaborators, and also post and share research articles and other work. ResearchGate has 7 million researchers from around the world registered with over 80 million publications available to members. Academia.edu is a platform for academics to share their research, monitor the impact of their research through various measures and track the research of other academics they follow. There are over 24 million academics that have signed up to Academia.edu, sharing over 6 million papers with over 36 million unique visitors a month.

2.5 Tracking Dissemination and Outreach Research Outputs

To ensure the effectiveness of your dissemination efforts, it's crucial to assess their impact. Here are some ways to evaluate the reach and influence of your research:30

1. **Metrics and Analytics:** Monitor the metrics of your publications, websites, and social media accounts to track engagement and reach. Pay attention to metrics like downloads, views, shares, and citations.
2. **Surveys and Feedback:** Collect feedback from your audience through surveys or interviews. Understand how your research has influenced their knowledge, attitudes, or actions.
3. **Case Studies: Conduct** case studies to explore how your research has been applied or integrated into various contexts, such as policy, industry, or education.
4. **Collaborative Assessments:** Collaborate with colleagues and institutions to assess the collective impact of your research on a particular field or issue.

Funders and institutions are interested in better monitoring the research outputs produced by their affiliated researchers. There are a number of services available to support better tracking of research outputs. These services rely heavily on the use of identifiers, such as ORCID IDs, FundRef and institutional identifiers. OpenAIRE allows research funders and institutions to better track their research outputs. It is similar to SHARE, but is more mature. See more information about OpenAIRE in the “repository and journal aggregator” section.

2.5.1 Impact Measures

Going beyond citations, there are other indicators that reflect the impact of research and provide a more holistic picture of the usefulness and impact of a scholar's work. There are a number of projects that are developing and implementing new measures such as article views and downloads, tweets, newspaper articles, adaptations, discussions on research blogs, number of collaborators, and so on. For example, *Impactstory* is an open-source, web-based tool that helps scientists explore and share the diverse impacts of all their research products – from traditional ones like journal articles, to emerging products like blog posts, datasets, and software. PlumX Metrics allows users to get more value from an institutional repository (IR) by embedding the metrics about their research directly into the IR. These metrics consider different versions of the same article- not just the one in the IR- so that authors can see the impact and reach of their research beyond just the individual repository.

30 <https://ecorrector.com/maximizing-impact-strategies-for-disseminating-your-research-beyond-publications/>

2.5.2 Journal Quality Assessment

Changing publishing models, including the rise of open access journals, have reshaped the ways in which scholars share and use journal articles. More than ever, understanding the criteria for assessing journal quality is critical in determining the overall value of any publication. Think, check, submit is a new industry-wide initiative that provides a checklist of quality indicators that can help researchers identify if a journal is a trustworthy place to submit their research. Beall's list of predatory journals is a list of questionable, scholarly open-access publishers that is maintained by a librarian in the United States.

2.5.3 Repository and Journal Aggregators

Journal and repository aggregators aim to improve the discoverability and visibility of research outputs, with a focus on research articles. They also act as de facto communities of practice for data providers which help to define standards and best practices and ensure interoperability across participating communities. For example, OpenAIRE is a technical infrastructure that pulls together and interconnects the large-scale collections of open access research outputs across Europe. The project creates workflows and services on top of this repository content, which will enable an interoperable network of repositories (via the adoption of common guidelines), and easy upload into an all-purpose metadata repository. The [open access movement](#), [says ResearchGate](#) and use of institutional repositories are growing, providing researchers with alternative avenues to share their findings and reach broader audiences.

2.6 Key Challenges in Dissemination and Outreach

2.6.1 Communication Barriers

Complex scientific language and technical jargon can pose significant challenges in effectively conveying research findings to non-expert audiences. This can result in misunderstandings, reduced engagement, and limited application of research findings (Shaw & Greenhalgh, 2008). To overcome these barriers, researchers should prioritize clear and concise language, use storytelling techniques, and incorporate visual aids such as infographics and animations to enhance comprehension.

2.6.2 Limited Resources and Infrastructure

Research projects often operate under budget constraints that hinder large-scale dissemination and outreach efforts. The lack of adequate infrastructure, particularly in low-resource settings, further limits the accessibility of research outputs (McNie, 2007). Establishing partnerships with government agencies, industry stakeholders, and philanthropic organizations can help secure funding and logistical support for more extensive dissemination initiatives.

2.6.3 Resistance to Research Uptake

Resistance to adopting new research findings can stem from cultural, political, and institutional factors. Policymakers may be hesitant to implement new evidence-based policies due to competing priorities, while communities may distrust research that does not align with their existing beliefs or practices (Weiss, 1979). To address these challenges, researchers should engage stakeholders early in the research process, build trust through sustained interactions, and align research findings with local and national development priorities.

2.6.4 Technological Gaps and Digital Divide

Despite the growing reliance on digital dissemination platforms, disparities in access to technology can limit the reach of research findings, particularly in rural and underserved areas. The digital divide remains a major obstacle in ensuring equitable access to knowledge (Hilbert, 2011). To bridge this gap, researchers should adopt hybrid dissemination approaches that combine digital tools with traditional communication methods such as community meetings and printed materials. Other barriers could include:

- ▶ Language is a significant barrier, as scientific articles and publications are often filled with technical jargon that is challenging for non-experts to comprehend.
- ▶ Limited access to scientific information, especially due to subscription fees or paywalls, also restricts the dissemination of research to a wider audience.
- ▶ Time constraints and lack of incentives within academia may discourage researchers from investing time and effort in dissemination activities.

2.7 Measuring the Impact of Dissemination and Outreach

When disseminating study findings, researchers must assess if the dissemination is producing the desired results. In order to measure the overall effectiveness, all research initiatives should be extensively evaluated in order to determine which approaches succeeded and which did not provide the intended results. The results of the dissemination may be evaluated using both qualitative and quantitative measurements. Assessing and selecting the most effective practices will provide evidence for the most successful techniques for reaching your target audience.³¹ Assessing the effectiveness of dissemination efforts is critical for refining strategies and maximizing research impact. Key performance indicators (KPIs) include number of research citations in policy documents and government reports; media coverage and public engagement metrics (e.g., audience reach, sentiment analysis); number of research collaborations and stakeholder partnerships established; changes in public awareness, attitudes, and behavior influenced by research findings and engagement metrics on digital platforms (e.g., social media shares, webinar attendance, and altmetrics for online research visibility) (Priem et al., 2012; Bornmann, 2013)).

To ensure the effectiveness of dissemination efforts, it's crucial to assess their impact. There are several ways to evaluate the reach and influence of research. They include:³²

1. **Metrics and Analytics:** Monitoring the metrics of publications, websites, and social media accounts to track engagement and reach – downloads, views, shares, and citations.
2. **Surveys and Feedback:** Collecting feedback from audiences through surveys or interviews. Understanding how research has influenced their knowledge, attitudes, or actions.
3. **Case Studies:** Conducting case studies to explore how research findings have been applied or integrated into various contexts, such as policy, industry, or education.
4. **Collaborative Assessments:** Collaborating with colleagues and institutions to assess the collective impact of your research on a particular field or issue.

Qualitative feedback through surveys, focus groups, and interviews with stakeholders can complement quantitative assessments, providing deeper insights into the effectiveness of dissemination activities.

Table 1: Dissemination matrix

Qualitative measurements	Quantitative measurements
The creation and distribution of printed materials	New connections with networks and partners
Updates, visits, interactions, likes and reports: check websites and social media platforms to evaluate performance	The consequences of these interactions
The number of events organized for certain audiences	Visibility in social media
The number of people who attend those events	Attractiveness in website
Media coverage	Feedback from the audience
Citations of publications	

31 <https://mindthegraph.com/blog/dissemination-of-research/>

32 <https://ecorrector.com/maximizing-impact-strategies-for-disseminating-your-research-beyond-publications/>

3. FINDINGS

This section presents findings of a review of dissemination and outreach activities and related outcomes emanating from SGCI-2 research projects. Specifically, the section explores the strategies and tools for dissemination and outreach employed by SGCI 2 research projects; the outcomes of dissemination and outreach efforts deriving from the research projects; the role of technology in enhancing dissemination and outreach efforts; and finally, the barriers, lessons and best practices relating to dissemination and outreach activities for SGCI research projects. These dissemination and outreach efforts reflect the commitment of participating councils and specific projects but also offer insights and lessons to guide future science communication and stakeholder engagement efforts across the continent.

3.1 Communication Channels/Products and their Effectiveness

Finding 1: SGCI-2 projects employed different methods to disseminate and to reach different stakeholders

The SGCI-2's research projects employed variety of dissemination and outreach tools and strategies to reach out to wider audiences. The main dissemination outputs mainly included scientific products in form of journals and manuscripts published in reputable journals, some of which can be found online. Several projects also supported students who wrote thesis based on their studies. A number of projects also developed policy briefs to inform decision-makers and influence national policies. Other dissemination outputs included presentations in conferences and articles/success stories in institutional and partner websites. Outreach activities included leveraging social media, local and international mainstream media, policy engagement, public private partnerships, community engagement, formal and informal meetings with policy makers and stakeholder workshops as well as national trade fairs, agricultural shows and Science Weeks. By combining traditional scholarly outputs with media engagement, policy briefs, and community outreach, SGCI-2 projects ensured that research was not only produced but also communicated effectively.

3.1.1 Dissemination Products and Strategies

Journals and Manuscripts

Most SGCI-2 projects produced scientific outputs in the form of journal articles and manuscripts. Malawi, Tanzania, Zambia, and Cote d'Ivoire submitted or published journals in reputable journals indexed in the Web of Science, MDPI, and other academic platforms. For instance, Malawi submitted manuscripts on aquaculture and bio-fertilizers to journals like *Animals* (MDPI) and *Applied and Environmental Soil Science*. Zambia published in journals such as the *BMJ* and *African Journal of Science, Technology, Innovation and Development*. These efforts show strong adherence to international research dissemination standards, ensuring peer-reviewed validation and global accessibility. However, some outputs were still in draft or under review, indicating challenges in finalizing and publishing research findings promptly. Zambia had a scientific paper accepted by the *British Medical Journal (BMJ)* titled **“Gender integration and female participation in scientific and health research in Zambia.”** Peer-reviewed publications validate the scientific rigor of research, facilitate academic discourse, and allow global dissemination through indexed databases.

Uganda published a journal of [Sustainable Environmental Research](#) through ResearchGate titled: **Food Waste supply and behavior towards its alternative uses in Kampala city Uganda**. Another journal was published on the *Journal of Sustainable Development* titled **A Review of Bio-Processing of Market crop waste to poultry feed in Uganda**.

In **Zambia**, a journal paper on a guiding framework for promoting public private partnerships in research

and innovation was published on the [African Journal of Science Technology Innovation and Development](#). Another journal paper on Gender integration and female participation in scientific and health research in Zambia: **A descriptive mixed methods cross-sectional study** was published on [BMJ journals](#) and can be found on research gate.

A project in **Tanzania** also published a journal paper Profit Efficiency in Beef Cattle Fattening in Tanzania. A case of Kongwa and Morogoro Districts on the **African Journal of Innovation and Entrepreneurship**. In **Cote D'Ivoire**, a total of five (5) scientific articles were published based on the funded projects. The papers were published in the following journals:

- ▶ Scientific Research Publishing
- ▶ Science Journal of Chemistry
- ▶ Journal of Chemical, Biological and Physical Sciences
- ▶ Journal of Applied Biosciences 175: 18157 – 18170
- ▶ Journal of Medicinal Plants Studies 2022; 10(4): 200-204

Other manuscripts published included:

- ▶ In **Malawi**, multiple manuscripts were prepared for submission to journals such as Animals and the Journal of Applied and Environmental Soil Science. These covered topics such as selective breeding in aquaculture and microbial biofertilizers.
- ▶ **Tanzania** submitted one publication and had four additional manuscripts related to cattle fattening and meat quality.
- ▶ **Botswana** researchers published several articles in high-impact journals like Heliyon and the Mineral Resources Management journal, focusing on slag beneficiation and recovery of valuable metals.

Academic capacity building was an implicit dissemination pathway. Several projects also supported students who wrote thesis as an output of their studies:

- ▶ Senegal supported two master's theses and a PhD related to soil fertility and land reclamation.
- ▶ Zimbabwe reported the graduation of three students under the initiative and support for eight others.
- ▶ Cote d'Ivoire's funded projects resulted in five Master's theses.

Student theses ensure long-term knowledge retention, develop local expertise, and serve as permanent academic records.

It is also notable that the SGCI-2 projects focused on open access publications which are tools to enhance visibility and impact of research. Although publication in international open access journals helps improve visibility and also enhances credibility, engagement with African-based open access journals was limited as showcased in Table 2. This presents a need to strengthen local journals and encourage intra-African knowledge sharing.

Table 2: Publication Journals

International Open Access Journals Used	African-Based Journals
<ul style="list-style-type: none">• ResearchGate• Bio Med Central (BMC)• BMJ Open• Academia• Heliyon• MDPI• Scientific Research Publishing• Science Journal of Chemistry• Journal of Chemical, Biological and Physical Sciences• Journal of Applied Biosciences• Journal of Medicinal Plants Studies	<ul style="list-style-type: none">• African Journal of Innovation and Entrepreneurship (AJIE)• African Journal of Microbiology Research• African Journal of Science, Technology, Innovation and Development (AJSTID)

Policy Briefs

Policy briefs distill research into actionable insights for policymakers. Their concise format enables fast comprehension, increasing the likelihood of uptake and implementation. Several countries developed policy briefs to inform decision-makers and influence national policies:

- ▶ **Zambia** produced two policy briefs – one to enhance public-private partnerships and another to strengthen collaboration among government, academia, and industry.
- ▶ Tanzania created briefs on sunflower oil processing technology and mechanization strategies for smallholder farmers.
- ▶ **Uganda** produced a policy brief promoting new propolis-based health products.
- ▶ **Senegal** and **Burkina Faso** also incorporated policy notes and operational manuals within their dissemination toolkits.

Zambia and Tanzania produced multiple policy briefs addressing gender integration, research-industry collaboration, and agricultural technology. These briefs were designed to inform ministries and policy stakeholders, ensuring that scientific findings translated into actionable recommendations. One of the policy briefs were published on the SGCI website and can be found [here](#).

However, it is not clear whether all the policy briefs were disseminated.

Technical Reports

Each of the SGCI research projects were required to produce regular technical reports to provide progress of their respective projects. The purpose of technical reports for research projects was to provide a comprehensive, detailed account of the research process, methods, data, and findings, often beyond what is included in journal articles or conference papers. The reports serve as a formal record of progress or final outcomes for funding agencies, stakeholders, or institutions.

Conference Presentations

Researchers from SGCI projects also presented in scientific conferences and workshops. In Botswana findings of the project on *Development of novel nano-engineered reagents for mineral froth flotation* were presented at the South African Institute of Mining & Metallurgy (SAIMM) symposium held in Namibia in 2022.

Success Stories

SGCI website and IDRC digital library also provide an avenue through which projects could publish success stories. Some of the success stories emanating from the research projects were published on the [IDRC Digital Library](#) and [SGCI](#) website.

Institution Websites

A number of SGCI projects also published some information regarding their projects on their website. Some of the projects visible on institutional website include Piloting the production and distribution of low-cost protein and [micro-nutrient rich cricket](#) feed from food waste in Kampala; Fractionation of Ugandan [Shea butter](#) into Commercial Shea stearin and Shea Olein for industrial food and cosmetic application;

development of modern biological control solutions for sustainable management of *destructive invasive insect pests* of maize and tomato for better food security, safety and nutrition in Rwanda; and pioneer domestication of *common carp fish* Cyprinidae in Rwandan aquaculture industry with valorization of silkworm pupae for low-Cost nutritious fish feed.

Table 3: Dissemination products by country

SGC	Journals	Conference Papers	Policy Briefs	Manuscripts/ Articles for Publication	Published Articles	Webinars/ workshops	Social Media posts	Academic outputs (theses)
Malawi	0	1	0	5	0	0	0	0
Uganda	3	0	1	0	6	2	2	0
Zambia	3	Number not specified	2	1	0	0	0	0
Burkina Faso	0	0	0	0	Number not specified	1	0	0
Rwanda	0	0	0	0	0	0	1	0
Mozambique	0	0	0	0	0	0	1	0
Tanzania	1	2	0	6	1	0	0	5
Zimbabwe	1	0	0	0	3	0	0	0
Senegal	2	0	0	0	3	0	0	5
Botswana	5	0	0	0	0	0	0	1
Cote D'Ivoire	6	0	0	0	0	0	0	5
Namibia	0	0	0	0	3	0	0	0
TOTAL	21	3	3	12	16	3	4	16

3.2 SGCI-2 Outreach Activities

A number of outreach activities carried out under the SGCI-2 projects across several African countries. These activities were focused on partnership building, knowledge dissemination, stakeholder engagement, capacity building, and community involvement. These outreach activities are described below:

3.2.1 Social Media and Institutional websites

Countries like Uganda and Rwanda leveraged social media and *institutional websites* to disseminate findings to broader audiences: **Uganda's** dissemination strategy stands out for leveraging social media (*Twitter* and *Facebook*), highlighting projects in insect protein and bakery industry research to reach wider and more diverse audiences. Uganda also used Social media (Twitter, Facebook) and institutional websites were used to promote specific projects such as the “food waste to cricket feed” initiative. This multi-platform digital engagement enhances public visibility and can create a broader societal interest in science and innovation. **Rwanda** used its national research website and Twitter to share updates. Social media and digital platforms broaden reach, particularly to youth and non-academic audiences. They facilitate rapid dissemination and interactive engagement.

3.2.2 Local and International Media

Apart from informing the public about scientific and technological advancements, making complex research more accessible and understandable, media coverage in reputable media outlets boosts the credibility of the researchers and institutions involved and can shape public opinion, which in turn can influence policymakers to support or prioritize certain research areas. Several SGCI-2 research projects effectively used both local and international news media to disseminate their research results. **Uganda** extensively used local media coverage to highlight project activities. The projects were covered in

mainstream media outlets including [The Monitor](#), [The Second Opinion](#), [SciDev.Net](#), [Watchdog Uganda](#), [University World News](#) and [The new Vision](#). **Namibia** promoted cross-border infectious disease projects through platforms like Environews Nigeria and Africa Press. SGCI-2 research projects in Senegal were covered on [BBC](#), [West Africa Democracy Radio \(WADR\)](#) and [Le Chasseur Infos](#). In **Zimbabwe**, the collaborative biofertilizer research project with Malawi was featured in [Herald Zimbabwe](#) and [Farmers Review Africa](#). In **Namibia**, the research project on infectious disease management using indigenous knowledge was covered by [360 Mozambique](#), [Environews Nigeria](#) and [Africa Press Namibia](#). In **Burkina Faso**, National media covered a workshop organized by the Ministry of Higher Education and FONRID to disseminate results from nine funded research projects.

3.2.3 Policy Advocacy and Institutional Engagement

Selected projects and SGCs made efforts to engage with policy-making bodies and institutions to enhance the reach and impact of their activities. In **Tanzania**, COSTECH organized high-profile exhibitions for science dissemination to policymakers, in which ministers and the Vice President attended. These events increased public awareness and visibility of SGCI projects, with some earning awards and public recognition. In **Malawi**, NCST entered into a formal Memorandum of Understanding (MOU) with the National Planning Commission for the development and implementation of the Research Agenda as well as for knowledge translation and promoting the uptake of research results. Similarly, NCST entered into a formal MOU with the Malawi Bureau of Standards and Ethanol Company of Malawi to support the NCST Science Fair Programme. The Council also negotiated and entered into an MOU with Malawi Communication Regulatory Authority to co-operate and partner on supporting research in ICT. Training in various areas of research management and science diplomacy helped NCST to acquire strengthened skills and knowledge in developing local partnerships and developing the national research agenda. In **Zimbabwe**, RCZ engaged with the Zimbabwe Energy Regulatory Authority (ZERA), the Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) and the Radiation Protection Authority of Zimbabwe (RPAZ). These research collaborations are within the national research priority areas.

3.2.4 Community Engagement and Technology Adoption

Several projects under SGCI-2 engaged in community outreach activities to create awareness of new technologies and products. These engagements enhanced the possibility of translating of research into usable innovations, increasing the likelihood of long-term adoption. Projects on biogas in **Zambia**, **Mozambique**, and **Malawi**, and that on invasive alien plants for energy in Malawi organized consultations and workshops with local leaders and farmers. This participatory approach ensured community buy-in and encouraged the adoption of technologies like solar dryers and biogas systems. In **Uganda**, Bishop Stuart University together with Afri-Banana Ltd, worked with aromatic crops farmers to form a cooperative to increase production and improve processing techniques by integrating action research results into training in agronomic practices, post-harvest handling and processing. This helped reduce the knowledge and technology gap hence reducing the bottlenecks affecting local essential oil producers.

In **Zambia**, a project on technology sustainability through upscaling and commercialization of biogas generation in Malawi and Mozambique engaged a local community to assess their perspective of using biogas from animal and human waste. In **Burkina Faso**, the innovation project **“Contour-aligned vegetative strips as alternatives to stone bunds and depletion of rock resources”** achieved the following results:

- ▶ A demonstration plot was established, serving as a training site for producers and for data collection.
- ▶ Technical capacities of producers and technical staff were enhanced in implementing and managing contour-aligned vegetative strips.

In **Mozambique**, the project assessing the performance of solar drying and solar cooling technologies in reducing post-harvest losses of vegetables constructed a greenhouse solar dryer technology which was installed in a strategic locations around which agricultural communities were grouped in cooperative to use the solar dryer. In **Tanzania**, sunflower and avocado processing technologies were piloted in places

accessible by the community. Also, users had the opportunity to provide feedback on the technology efficient and required capacity. Other community engagement activities included:

- ▶ **Zambia**, where communities were consulted and trained in biogas technology, fostering technology adoption and behavioral change.
- ▶ **Burkina Faso**, where field demonstrations served as both educational and research tools.
- ▶ **Malawi** hosted exchange visits that built multi-disciplinary skills.
- ▶ **Tanzania** trained over 200 individuals including researchers, students, and SMEs.
- ▶ **Uganda** trained bakery stakeholders in food safety standards.
- ▶ **Mozambique** emphasized training women and youth in processing and value addition, effectively addressing rural development and gender equity.

Projects in **Mozambique**, **Rwanda**, and **Zimbabwe** engaged with local communities directly: Mozambican researchers held meetings with local leaders and community members before and after project implementation. **Rwanda** developed posters and flyers in local languages for community dissemination events. Local outreach ensures that research benefits are accessible and relatable to the communities they aim to serve. It encourages local ownership and adoption of innovations.

3.2.5 Regional Collaboration and Networking

A number of SGCI-2 projects led to the formation of strategic public-private partnerships. In Malawi, the project developing a nitrogen-fixing *Rhizobia-Bacillus subtilis* formulation for aflatoxigenic fungi formed a partnership between Natural Resources College of Lilongwe University of Agriculture and Natural Resources (NRC) and ICRISAT Malawi. Further, the project grant enabled NRC to establish partnership with University of Ghent and ISPA Research Institute in Italy focusing on research in mycotoxins through its research centre called MYCOTOX South. Collaboration with Mycotox South research centre also created access to modern laboratories for further analysis and evaluation of groundnut aflatoxins.

3.2.6 National Trade Fairs, Agricultural Shows and Science Weeks

The outreach extended to exhibitions and public events, such as trade fairs and science weeks in Tanzania and Botswana, where technologies like sunflower oil refineries and nano-engineered mineral reagents were showcased. In countries like Tanzania and Zambia, dissemination at national events (e.g., Agricultural and Commercial Show, National Science Week) included posters, flyers, and product demonstrations. In April 2023, COSTECH organized exhibitions and presentations in Zanzibar involving 10 completed projects. Researchers gave presentations on their research findings attended by more than 300 participants, including government and academic leaders. These platforms were crucial for showcasing innovation to non-academic audiences such as farmers and industry actors. They served as knowledge exchange forums. Zambia showcased posters and flyers at public events like the Agricultural and Commercial Show 2023.

3.2.7 Stakeholder Workshops and Conferences

Several projects used workshops and dissemination events to engage communities and stakeholders directly. Research dissemination workshops and presentations at national events were a core channel for engaging stakeholders. Countries like **Burkina Faso**, **Mozambique**, and **Rwanda** hosted workshops involving policymakers, academics, and communities, reinforcing research uptake and ownership. For example, Burkina Faso held a workshop covered by media outlets to present nine project outcomes, while Mozambique held local meetings with community members and authorities to share results. This grassroots-level dissemination were commendable for ensuring the relevance and adoption of research findings. Conferences and workshops fostered stakeholder engagement, encouraging dialogue between researchers and users, and promoting networking and collaboration. Burkina Faso's FONRID hosted a national workshop to present the results of nine funded projects, supported by IDRC. **Malawi** researchers presented papers at the 4th National Research Dissemination Conference. Mozambique organized local meetings with communities and formal sessions with policymakers and scientific councils.

3.2.8 Research and Innovation Management (RIM) Annual Symposium

In 2024, some SGCI-2 researchers showcased their research outputs in annual forums/scientific engagement platforms. Principal Investigators (PI) of several presented products emanating from their research projects during the Research and Innovation Management (RIM) Annual Symposium held in Gaborone, Botswana in 2024 and also in Uganda. These projects included:

- ▶ Commercialization of propolis powder and infused tea bags for improved health and income in Uganda.
- ▶ Up-scaling the uptake of cocoa innovative technologies for increased value through the cocoa primary processing value chain.
- ▶ Identification of standards and gaps in the bakery and confectionery industries.
- ▶ Towards technology sustainability through upscaling and commercialization of biogas generation in Malawi, Mozambique and Zambia.

These presentations highlight the research communication and uptake among SGCI-2 projects and also underscores the role of such forums in providing platforms for knowledge exchange.

3.2.9 Formal and Informal Meetings with Policy Makers

Burkina Faso and **Mozambique** also engaged policymakers through formal and informal meetings, suggesting a strategic use of research to shape governance and development agendas. The effectiveness of this approach hinges on policymakers' receptivity and the frequency of such engagements, which the report does not quantify.

3.2.10 Public Private Partnerships

SGCI-2 research project teams also approached private sector partners based on specific needs. For example, In **Botswana**, one of the project teams directly approached industry players for support. The Botswana Chamber of Mines and Khoemacau Copper Mine were approached to assist with industrial testing of a newly developed reagent. There were also industry needs driven partnerships where projects identified critical industry needs from the private sector and devised solutions for the same. In **Burkina Faso**, partnerships were formed by first identifying critical industry needs, such as improving the precision and hygiene practices in dolo (traditional beer) production. The research was then tailored to address these challenges, leading to training initiatives and the provision of equipment to dolo producers. In **Tanzania**, the Sunflower project developed affordable and appropriate technologies to small and medium-sized enterprises (SMEs). This strategy ensured the direct application of research outputs to meet industry needs.

In **Uganda**, the private sector's role was deeply integrated into research projects. For example, under the "*Commercialization of Propolis Powder and Infused Tea Bag*" project, TUNADO (the apex body for beekeepers) collaborated with Makerere University to mobilize beekeepers for mass production, which facilitated product development and catalyzed commercialization efforts. In **Malawi**, for instance, PPP projects allowed sharing of best practices and site visits involving private actors, helping to refine project implementation strategies. The National Commission for Science and Technology (NCST) in **Malawi** collaborated with private partners in renewable energy projects especially by providing sites hosting for project demonstrations. In **Zimbabwe**, the private sector actors collaborated in bio-fertilizer production research by providing sites and practical challenges, thereby ensuring relevance and applicability of the research outputs.

3.3 The Role of Digital Tools, Online Platforms and Technology Innovation

Finding 3: Digital tools, online platforms and social media played an important role in enhancing communication, especially during and after COVID-19 restrictions.

Projects in Uganda, Zambia, Namibia, Burkina Faso, Senegal, Tanzania, Zimbabwe, Botswana, Cote d'Ivoire and Rwanda leveraged digital tools such as X (formerly twitter), Facebook, institutional websites, webinars and digital journals to reach broader and more diverse audiences. Across the SGCI-2 research projects, digital tools and platforms were utilized and played an important role in enhancing the reach and impact of research dissemination particularly during and after COVID-19 when face-to-face dissemination was limited.

In **Uganda**, UNCST leveraged Facebook, X platform (formerly twitter), institutional website, online journals such as ResearchGate and digital media outlets to share research findings and amplify public engagement. For instance, posts about the 'Food Waste-2-Cricket Feed' project were shared on Facebook to ensure that reached various audiences. Moreover, links to media stories on monitor, Second Opinion, scidev, Watch Dog Uganda, Science Now Mag, Telegraph and University World News ensured a wider national reach. UNCST, through its established institutional gender Committee, held two webinars on Gender and Inclusivity in Science, Research and Technology in commemoration of the internal women's day, on the 24th of March 2021, UNCST held an online policy dialogue on Gender Equity in Research Advancement for a sustainable and science and technology led economy. The goal was to raise awareness on gender gap in research and their effect national productivity and discuss how they can be bridged. Also, UNCST together with Uganda Registration Service Bureau (URSB) and the National Agricultural Research Organization (NARO) held a webinar on the role of Intellectual Property (IP) in promoting Innovation in Uganda with a focus on Youth in the Science, Technology and Innovation (STI) Sector. This demonstrated how digital platforms served as learning, advocacy and dissemination tools.

Zambia utilized digital journal platforms such as ResearchGate, African Journal of Science Technology Innovation and Development and British Medical Journal (BMJ) to share research results. For example scientific paper "Gender integration and female participation in scientific and health research in Zambia: A descriptive mixed methods cross-sectional study" was accepted for publishing in the British Medical Journal (BMJ). **Burkina Faso** distinguished itself by developing a digital pharmaceutical application (InfoMed) for the project "Development of a digital application for the rational use of medicine in Burkina Faso". The pharmaceutical database is operational on the website, with features for equivalence searches and prescription analysis and users can access using a specific code. This code grants temporary access to verify the service; otherwise, users must subscribe for permanent access. A demonstration session was held during a media-covered workshop. Other countries like Tanzania, **Zimbabwe**, **Botswana**, **Cote d'Ivoire** published their research outputs through platforms such as Academia, online repositories and other platforms ensuring access and engagement.

3.4 Outcomes of Dissemination and Outreach Activities

Finding 4: The dissemination and outreach activities under SGCI-2 resulted in strengthening of research collaborations, building capacities of institutions and communities, enhancing technology adoption, influencing policy as well as increasing visibility of research projects.

Outreach activities conducted under SGCI-2 projects across various African countries produced significant outcomes. These activities advanced the reach and influence of the research outputs, promoting visibility, policy engagement and uptake of innovations across various sectors. Below is a summary of key outcomes and impacts.

3.4.1 Strengthening Research Collaborations

SGCI-2 projects have facilitated extensive multi-country and multi-institutional research collaborations. In Malawi, partnerships were forged between Mzuzu University and the Department of Fisheries, and cross-country collaborations were established among researchers from Malawi, Mozambique, Zambia, and Zimbabwe. Projects in biotechnology, renewable energy, and solar drying technology fostered bilateral and trilateral networks that enriched scientific exchange and joint problem-solving. These research collaborations are best demonstrated through public-private partnerships, whose examples include:

- ▶ In **Malawi**, for instance, PPP projects allowed sharing of best practices and site visits involving private actors, helping to refine project implementation strategies.
- ▶ In **Tanzania**, the sunflower project saw SMEs from the oil processing sector working closely with researchers to refine and adopt affordable refining technologies, enhancing the competitiveness of sunflower oil products.
- ▶ Private actors in **Uganda** were instrumental in identifying real-world industrial challenges for researchers to solve, ensuring research was demand-driven.
- ▶ In **Botswana**, private mining companies provided ore samples and facilitating industrial testing of new reagents.
- ▶ In **Sierra Leone**, a private company has been involved in the design of AbuSensebod, an all-in-one educational platform.

3.4.2 Capacity Building and Skills Development

A number of SGCI-2 research project developed capacities for individuals, groups and communities through various outreach activities. Capacity building empowers individuals and community groups with the skills, knowledge, and resources needed to effectively adopt new technologies based on research outputs. It improves program sustainability, and enhances the overall impact of outreach initiatives. By building capacity, communities become more self-reliant and better equipped to create lasting positive change. In **Uganda**, Makerere University and Bishop Stuart University offered industry-targeted trainings on food quality standards and essential oil production. Similarly, in Tanzania and Mozambique, community training programs in areas such as oil extraction and milk and fruit processing empowered over 300 community members and SMEs with new technological skills. The department of Food Technology and Nutrition, Makerere University through his research project titled “Identification of standards and gaps in the bakery and Confectionery Industries” worked with Uganda National Bureau of Standards and several private sector partners to train bakers on how to meet national food quality and safety standards for baked products. In **Namibia**, for example, women entrepreneurs and milk-producers were trained in agro-processing in milk processing and financial management. In **Malawi** and **Zimbabwe**, local communities were trained in collection of fresh semen from goats and chickens and in performing artificial insemination in goats and chickens. **Malawi’s** solar drying technology project formed partnerships and worked closely with farmers’ cooperatives and German Technical Cooperation (GIZ) to explore commercialization strategies.

3.4.3 Technology Adoption

Community outreach led to adoption of new technologies like biogas systems, solar dryers, and essential oil processing tools (e.g., Zambia, Malawi, Mozambique, Uganda). As explained in the section above, extensive training for farmers, students, and small enterprises built local capacity and improved livelihoods. In Burkina Faso, local beer producers were trained in hygiene and fermentation techniques and introduced modern packaging methods. In Mozambique, 31 traditional practitioners were trained in the development of herbal remedies for commercialization. In **Tanzania**, sunflower oil mini-refinery and avocado oil processing plants were piloted at community-accessible sites, allowing small-scale producers and SMEs to test and adopt the technology.

3.4.4 Policy Influence and Institutional Strengthening

A major policy breakthrough was seen in Malawi, where the SGCI-2 project contributed to the operationalization of the national Science and Technology Fund, which had been inactive since its creation in 2003. This resulted in substantial funding allocations from the Treasury, reflecting increased political will. Further, Memoranda of Understanding (MoU) were signed with several key national institutions to coordinate research agendas and promote knowledge translation. This was enabled through consistent advocacy and lobbying, culminating in Treasury allocations of MK291 million and MK 450 million in successive financial years. Other countries, like Uganda and Tanzania, similarly saw institutional strengthening. Uganda's Makerere University worked with national standards agencies, while Tanzania's COSTECH facilitated large-scale dissemination of research outcomes through national exhibitions and policy-engagement forums. SGCI-2 research projects also enabled councils and researchers to engage in broader continental and international networks. Examples include collaborations with Japan (AJ-CORE), regional cooperation through Southern African Development Community (SADC) channels, and research mobility that allowed exchange visits across countries. Dissemination through policy briefs in countries like Zambia, Tanzania, and Uganda provided direct input into government decision-making. For instance, Zambia developed briefs for public-private partnerships and gender integration in STI, while Tanzania focused on agricultural mechanization and food processing technologies.

3.4.5 Visibility

Media coverage and online publication of SGCI-2 research projects enhanced visibility of those some projects especially in Uganda, where projects combined different communication channels and information products. Science weeks, trade fairs and agricultural shows also created awareness about the projects and associated technologies. Projects were featured in outlets like BBC Afrique, SciDev.Net, and national newspapers, significantly boosting visibility and public awareness. Use of social media platforms (Facebook, Twitter) and institutional websites broadened engagement with youth and non-academic audiences. Finally, publication of success stories on platforms like the IDRC Digital Library showcased tangible outcomes and inspired replication. Participation in national exhibitions and science fairs (e.g., in Tanzania, Zambia) improved public interaction with science and enhanced science-policy dialogue.

3.4.6 Student Capacity Building

Theses produced across countries (e.g., Senegal, Zimbabwe, Botswana, Cote d'Ivoire) contributed to building a new generation of researchers and practitioners. Scholarships and mentorship supported this academic pipeline. The students conducted research anchored on SGCI-2 projects which produced new knowledge on their respective fields of study.

3.5 Measuring Communication and Outreach Impact

Finding 5: Although the projects generated several communication outputs and engaged in dissemination and outreach activities, there were no deliberate mechanisms to measure impact

Visibility in social media/online platforms for measuring communication and outreach impact were partially employed across projects. For instance, some Councils reported the number of publications, articles, policy briefs, theses completed etc. There were various publications on journals, articles on different websites and social media posts from several countries such as Rwanda, Uganda, Botswana, Senegal, Zimbabwe and Zambia. Rwanda also developed materials such as fliers, posters for project visibility and dissemination to the community. Countries like Senegal and Namibia also utilized media coverage.

It is however difficult to figure out whether projects incorporated feedback mechanisms, user surveys or behavioral assessments to determine how the knowledge products were understood, used and applied. Initiatives such as the development of InfoMed in Burkina Faso showcased the potential of technology driven engagement, however, there was lack of formal evaluation frameworks to assess the user experience or any learning outcomes. Some of the projects offered insights into impact such as Malawi which triggered the operationalization of a dormant National Science and Technology Fund. Similarly, Rwanda, Mozambique and Tanzania demonstrated success in forging industry partnerships and research to policy linkages. While several projects took some steps towards measuring and enhancing outreach, a framework for evaluating the effectiveness of dissemination was largely absent.

3.6 SGCI-2 Best Practices on Dissemination and Outreach

Several best practices can be distilled from dissemination and outreach activities emanating from SGCI-2 research projects. These are highlighted below:

3.6.1 Uganda - Multi-Platform Digital Outreach & Industry Collaboration

Uganda effectively utilized a blend of traditional and modern communication channels. Projects employed a digital strategy combining Facebook, Twitter, institutional websites, and local/international media (e.g., Monitor, SciDev.Net, Watchdog Uganda) to disseminate findings. Research findings were also published peer-reviewed journal articles in platforms like ResearchGate and Sustainable Environmental Research. In addition, projects in Uganda also used the following dissemination and outreach methods:

- ▶ Published policy briefs, including one on propolis-based health products.
- ▶ Posted research updates on institutional websites such as Uganda Christian University (UCU).
- ▶ Used local and international media outlets like Monitor.co.ug, SciDev.Net, and Watchdog Uganda to publicize findings. The projects received considerable media attention, enhancing public understanding and visibility of science.
- ▶ Success stories were featured in partner websites including IDRC portal, boosting credibility and potential replication.

This multi-platform approach ensured accessibility of research findings to academic, policy, and public audiences. Ugandan institutions also collaborated directly with communities to translate research into practical applications. For example, Bishop Stuart University and Afri-Banana Ltd trained aromatic crop farmers in post-harvest handling and processing. In addition, the projects engaged with policymakers and regulatory bodies through both formal partnerships and informal consultations. PPPs helped mobilize beekeepers, supported mass production, and facilitated market access, thereby aligning research with economic development.

3.6.2 Malawi – Influencing Policy through Partnerships and Advocacy

The dissemination and outreach best practices effectively bridged research with policy, community, and industry. The National Commission for Science and Technology (NCST) signed formal Memoranda of Understanding with key institutions such as:

- ▶ National Planning Commission (for Research Agenda implementation).
- ▶ Malawi Bureau of Standards and the Ethanol Company of Malawi (supporting science fairs).
- ▶ Malawi Communications Regulatory Authority (supporting ICT research).

NCST fostered effective collaboration between academic institutions and organizations like ICRISAT and Mycotox South (Italy) for research on aflatoxins. These PPPs enhanced access to advanced laboratories, field testing, and commercialization opportunities. Combined with effective and sustained advocacy, these partnerships facilitated policy influence and practical application of research findings. A major milestone was the operationalization of the national Science and Technology Fund, which had been dormant since 2003. Persistent advocacy by NCST, bolstered by research dissemination efforts, resulted in Treasury funding of MK 291 million and MK 450 million in successive years.

3.6.3 Burkina Faso – Stakeholder Workshops & Industry-Driven Research

Burkina Faso hosted a national workshop organized by the Ministry of Higher Education and FONRID to disseminate results from nine funded projects. This event, which included media coverage to boost visibility, enabled sharing of research outputs like a pharmaceutical digital application and policy briefs and created a platform for dialogue among researchers, policymakers, and the public. This workshop model exemplifies integrated communication and engagement, combining direct interaction with institutional promotion and media coverage. In addition, SGCI-2 projects in Burkina Faso identified specific industry needs such as hygiene in traditional beer (dolo) production and tailored research solutions accordingly. This led to direct industry training, provision of equipment to improve practices and immediate, practical application of research findings.

3.6.4 Tanzania - National Exhibitions

In Tanzania, COSTECH played a pivotal role in convening exhibitions and policy forums, enhancing the research-to-policy link and elevating the national science agenda. They organized high-profile exhibitions involving presentations of research from 10 projects. National exhibitions provided platforms for interaction with policymakers and non-academic audiences. National exhibitions for research projects provide a platform to showcase innovation, foster collaboration and inspire knowledge exchange among researchers, industry leaders, policymakers, and the public.

3.7 Key Enablers for Effective SGCI-2 Dissemination and Outreach

A casual interrogation of the effectiveness of dissemination and outreach activities reveal that some Councils and projects achieved better outcomes than others. This boils down to a combination of strategic planning, institutional support, digital engagement, partnerships and community integration. Below is a summary of the key enablers of effective dissemination and outreach activities for SGCI-2 projects.

3.7.1 Strategic and Multi-Channel Communication

Countries with high-performing dissemination efforts used a mix of channels, including peer-reviewed publications, policy briefs, local and international media, social media platforms as well as institutional and project-specific websites. Uganda stood out for using a multi-platform digital strategy, combining Facebook, Twitter, institutional websites, and local/international media (e.g., SciDev.Net, Monitor). Meanwhile, countries with less visibility relied more on traditional outputs or one-off events, without sustained or multi-channel efforts.

3.7.2 Formal Institutional Partnerships and MOUs

One strategy for effective dissemination and outreach is forming effective partnerships with different partners. For example, the reason why Malawi were effective with regard to influencing policy was strategic partnerships where they signed formal MOUs with key institutions (e.g., National Planning Commission, Bureau of Standards). This helped bridge research with policy and enhanced institutional alignment for dissemination. These arrangements ensured long-term visibility and policy uptake of research findings. In other countries, dissemination remained project-specific without anchoring within national institutions, limiting impact after the project ended. Malawi achieved a significant outcome with the operationalization of its Science and Technology Fund, dormant since 2003, through effective advocacy and dissemination.

3.7.3 Community and Stakeholder Engagement

Countries like Burkina Faso, Tanzania, Uganda, and Zambia involved communities directly through demonstration plots, farmer training, stakeholder workshops and technology pilots. These engagements built trust, encouraged technology adoption, and ensured practical relevance. Integrating community-level engagement, facilitates ownership of research outputs which enhances technology uptake.

3.7.4 Capacity Building and Training

Countries such as Tanzania, Mozambique, and Uganda conducted large-scale training for SMEs, researchers, and farmers in technology use, food safety, and processing. These activities translated to tangible outcomes like improved production and innovation. Some projects lacked structured capacity-building components, limiting practical knowledge transfer.

3.7.5 Presence in Media and Public Events

Countries that presented their findings at national exhibitions, science fairs, and international conferences (e.g., Botswana, Tanzania, Uganda) gained greater visibility and recognition from policy and public stakeholders. Media coverage in outlets like **BBC Afrique**, **SciDev.Net**, and national newspapers amplified their reach.

3.7.6 Private Sector Collaboration and Commercialization

In Uganda and Malawi, private sector was deeply engaged in research projects (e.g., propolis product development, renewable energy solutions). These partnerships facilitated commercialization, increasing the relevance and sustainability of innovations. In other countries, partnerships with private sector were limited or not well-integrated, reducing post-project sustainability.

3.8 Challenges and Shortcomings

3.8.1 *Inconsistent and Delayed Publication of Research Outputs*

Many journal articles and manuscripts remained in draft or under review stages, which delayed public access and limits impact. It was not easy to establish whether the manuscripts were eventually published or not. This suggests challenges in writing, peer-review timelines, or inadequate support for finalizing publications. Some policy briefs were produced but not clearly disseminated, highlighting a need for stronger dissemination planning and follow-up. Lack of follow-through undermines the briefs' purpose - to influence policy.

3.8.2 *Limited Monitoring of Outreach Impact*

The projects emphasized activities (workshops, exhibitions, social media posts) but provides little evidence of measurable impact or feedback. It's unclear whether the target audiences, especially policymakers, SMEs, or communities, adopted the technologies or responded to the research. Some outreach efforts appeared ad-hoc or pilot-based without clear sustainability plans or institutional embedding, risking discontinuation after project end. The reliance on one-time workshops or events without follow-up mechanisms may limit sustained impact. While dissemination activities are varied, the technical reports provide little evidence of systematic M&E mechanisms to assess their reach or influence. There is insufficient reflection on metrics such as engagement rates, policy influence, or behavioral changes among target audiences. Without such data, it is hard to evaluate the effectiveness of dissemination efforts.

3.8.3 *Uneven Institutionalization across Councils*

Dissemination appears to depend heavily on individual projects or Councils rather than being embedded in the institutional practices and plans. This raises sustainability concerns: what happens after project funding ends? The lack of standardized dissemination frameworks across councils could hinder consistency and long-term impact. Uganda and Rwanda leveraged digital platforms effectively, but this wasn't the case for all participating countries. Some projects lacked consistent or professional online presence

3.8.4 *Limited Visibility of Outputs*

The success of dissemination also depends on discoverability, which requires more proactive content management and search engine optimization (SEO). Despite the use of websites and digital platforms, accessibility to research outputs was not uniform. Some manuscripts could not be found online. Some councils lack robust, updated repositories, making it hard for stakeholders to find and use research evidence.

3.8.5 *Underutilization of Success Stories*

Although success stories were published on the IDRC and SGCI websites, their potential as advocacy tools appears underleveraged.

3.9 Lessons Learnt and Best Practices

Some of the lessons that can be glimpsed from the dissemination and outreach activities emanating from SGCI-2 research projects are listed below:

- i.** Employing a mix of dissemination methods such as peer-reviewed journals, policy briefs, media engagement, technical reports, and digital platforms ensures wider reach across audiences (academic, policy, public). A one-size-fits-all approach is insufficient. Projects should tailor dissemination strategies to their intended audience segments.
- ii.** Hands-on community engagement (e.g., demonstration plots, local training, participatory technology piloting) fosters ownership, relevance, and sustainability.
- iii.** Formal agreements (e.g., MOUs) and informal engagements with government agencies and regulatory bodies strengthen research uptake and policy integration.
- iv.** Coverage by local and international media (e.g., BBC Afrique, SciDev.net, national newspapers) substantially increases visibility and credibility of research findings.
- v.** National workshops, exhibitions, and science fairs provide platforms for dialogue, feedback, and co-creation.

4. CONCLUSION

The SGCI-2 research projects made great efforts to disseminate findings and reach out to key stakeholders, which resulted in positive outcomes. By leveraging a combination of traditional academic outputs, digital platforms, community engagement, policy advocacy, and public-private partnerships, SGCI-2 projects significantly enhanced the visibility and utility of their research. These efforts led to notable outcomes such as strengthened institutional capacities, expanded regional collaborations, increased technology adoption, and the integration of research into national policy agendas.

Best practices - such as Uganda's multi-channel digital outreach, Malawi's policy-driven partnerships, Tanzania's national exhibitions, and Burkina Faso's industry-responsive research - highlight the value of strategic, inclusive, and locally grounded communication approaches. However, the overall impact of dissemination activities was tempered by several limitations, including inconsistent publication of outputs, limited monitoring of outreach effectiveness, and insufficient institutionalization of communication strategies. Addressing these gaps through systematic measurement frameworks, improved digital accessibility, and sustained institutional support will be critical for amplifying the long-term influence and sustainability of SGCI-funded research. Ultimately, the SGCI-2 experience offers valuable lessons for fostering a more connected, responsive, and impactful science ecosystem across the continent.

5. RECOMMENDATIONS

While SGCI-2 showed strong effort and innovation in dissemination and outreach, the inconsistency in execution and lack of robust tracking systems limited the overall impact. By institutionalizing dissemination best practices, investing in digital literacy, and linking activities more directly to measurable outcomes, future initiatives can significantly enhance visibility, uptake, and long-term benefits of research. The following actions are recommended:

Strategic Communication Planning

Challenge: Most outreach efforts described are ad hoc or event-based (e.g., workshops, meetings, and fairs). A more structured communication strategy would improve visibility and long-term engagement. Though SGCI-2 projects made great efforts to disseminate research results, to maximize, there is a need to move from ad hoc dissemination to a more strategic, evaluated, and institutionalized practice.

Recommendation 1: SGCI-2 projects should develop a comprehensive dissemination and outreach plan with clear objectives, target audiences, key messages and communication channels.

Creation of a centralized repository

Challenge: While there are instances of presentations and reports, systematic documentation of project processes, lessons learned, and success stories is lacking.

Recommendation 2: Create a centralized repository or digital portal and ensure all technical reports and outputs are uploaded.

Monitoring and Evaluation (M&E) of Outreach Impact

Challenge: There's minimal mention of how the success of outreach efforts is measured, and where they were mentioned, they were not standardized

Recommendation 3: Develop and adopt a standardized M&E framework across all councils to track the reach and effectiveness of dissemination and outreach efforts.

Cross-Country Learning and Replication Mechanisms

Challenge: The SGCI-2 research projects seem not to have had a forum for cross-country and cross-project learning and sharing.

Recommendation 4: SGCI-2 projects should plan for annual cross-country learning symposium or webinars for knowledge exchange among partners and projects.

Training on Dissemination and Outreach

Challenge: While several projects developed great products and technologies, the communication and outreach for the same was not effectively implemented.

Recommendation 5: Councils should provide training in digital communication strategies to ensure effective messaging and engagement and publication writing workshops and mentorship to improve output quality of dissemination products.

Formalize Partnerships with Policymakers and Industry

Challenge: Though there were partnerships between councils and projects with policymakers, they were not institutionalized and formal.

Recommendation 6: Create formal engagement pathways between researchers and decision-makers by institutionalizing regular policy dialogues, linked to project milestones.

Challenge:

Recommendation 7: Formalize partnerships with private sector entities through innovation platforms or business incubators to facilitate commercialization and sustainability of technologies.

Challenge:

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7. Annex 1: Dissemination and Outreach Products by Country

SGC	Journals	Conference Papers	Policy Briefs	Manuscripts/Articles for Publication	Published Articles	Webinars/workshops	Social Media	Other
Malawi	Not specified	<ul style="list-style-type: none"> Assessing the potential of microbial consortia-based biofertilizer in integrated soil fertility management for improved maize productivity by Keston O. W. Njira, Thembekile Ncube, Lloyd Liwimbi, Ngonidzashe Mangoma, Sanele Rabi, Lonely Chiweza, Samuel Mwafulirwa and Patson C. Nalivata (Abstract and full paper already disseminated at the 4th National Research Dissemination Conference organised by NCST from 25 to 26 January 2023 at Crossroads Hotel, Lilongwe, Malawi 	Not specified	<ul style="list-style-type: none"> Morphometric and Meristic Characterization of <i>Coptodon rendalli</i> from Lake Chiuta and farmers in Mzuzu using Multivariate Analysis by Singini, Chigwechokha, Kassam, Zidana, Mvula, Mbamba, Nhiwatiwa (Manuscript to be submitted to: Animals published by MDPI index in Web of Science) Enhancing performance of <i>Coptodon rendalli</i> through Selective breeding by Singini, Chigwechokha, Kassam, Zidana, Mvula, Mbamba, Nhiwatiwa (Manuscript to be submitted to: Animals published by MDPI index in Web of Science). Evaluation of the performance of microbial based bio-fertilizers has shown that the microbial fertilizers have high potential to increase legume crop yields. 	Not specified	Not specified	Not specified	National Research Dissemination Conference organised by NCST from 25 to 26 January 2023 – disseminated a conference paper

SGC	Journals	Conference Papers	Policy Briefs	Manuscripts/Articles for Publication	Published Articles	Webinars/workshops	Social Media	Other
				<ul style="list-style-type: none"> • Biofertilizer technologies: their functional mechanisms and situation in Malawi and Zimbabwe by Keston O. W. Njira, Thembekile Ncube, Lloyd Liwimbi, Ngonidzash Mangoma, Sanele Rabi, Lonely Chiweza, Samuel Mwafulirwa and Patson C. Nalivata to be submitted to the Journal on Chemical and Biological Technologies in Agriculture • The potential microbial isolates as biofertilizers for enhancing maize plant growth by Keston O. W. Njira, Thembekile Ncube, Lloyd Liwimbi, Ngonidzash Mangoma, Sanele Rabi, Lonely Chiweza, Samuel Mwafulirwa and Patson C. Nalivata to be submitted to journal of Applied and Environmental Soil Science 				

SGC	Journals	Conference Papers	Policy Briefs	Manuscripts/Articles for Publication	Published Articles	Webinars/ workshops	Social Media	Other
Uganda	<p>Research gate https://www.researchgate.net/publication/374567913_Food_waste_supply_and_behaviour_towards_its_alternative_uses_in_Kampala_city_Uganda</p> <p>Sustainable Environmental Research https://sustainenvironres.biomedcentral.com/articles/10.1186/s42834-023-00195-6</p> <p>Journal of Sustainable Development https://www.researchgate.net/publication/347288478_A_Review_of_Bio-Processing_of_Market_Crop_Waste_to_Poultry_Feed_in_Uganda</p>	Not specified	<p>Strategies for increased utilization of new propolis products in Uganda: https://sgciafrica.org/wp-content/uploads/2022/03/Policy-Brief-Strategies-for-Increased-Utilisation-of-New-Propolis-Products-in-Uganda.pdf</p>	Not specified	<p>New Media article links:</p> <p>https://www.monitor.co.ug/uganda/news/national/new-study-pokes-holes-in-bakery-sector-4666436</p> <p>https://www.secondopinion.co.ug/govt-strengthens-capacity-for-bakery-and-confectionery-industry/</p> <p>https://www.scidev.net/sub-saharan-africa/news/uganda-unlocks-value-from-honey-by-product/</p> <p>https://sciencenowmag.com/2024/07/09/an-extra-income-for-bee-farmer/</p> <p>https://www.watchdoguganda.com/news/20241210/175529/ugandan-researchers-develop-health-products-based-on-bee-resin.html</p> <p>https://telegraph.co.ug/business/ugandan-researchers-develop-health-products-from-bee-resin-to-boost-local-incomes/</p> <p>https://www.monitor.co.ug/uganda/magazines/farming/propolis-will-give-you-money-1822914</p> <p>https://www.universityworld-news.com/post.php?story=20241204080214737</p> <p>Institution Website: https://ucu.ac.ug/university-proves-insect-value-in-nutrition-and-alleviating-food-waste/</p>	<p>2 webinars on Gender and Inclusivity in Science, Research and Technology:</p> <p>(i) in commemoration of the internal women's day, on the 24th of March 2021, UNCST held a policy dialogue on Gender Equity in Research Advancement for a sustainable and science and technology led economy. The goal was to raise awareness on gender gap in research and their effect national productivity and discuss how they can be bridged;</p> <p>(ii) On 28th of April, UNCST together with Uganda Registration Service Bureau (URSB) and the National Agricultural Research Organization (NARO) held a webinar on the role of Intellectual Property (IP) in promoting Innovation in Uganda with a focus on Youth in the Science, Technology and Innovation (STI) Sector</p>	<p>Facebook Posts https://www.facebook.com/UgandaChristianUniversity/posts/interest-yourself-with-the-food-waste-2-cricket-feed-project-at-the-ucu-faculty-6377131668986140/</p> <p>Twitter https://x.com/UCUniversity/status/1638918271104606209</p>	<p>National Events : https://rif.mak.ac.ug/mak-rif-at-the-national-science-week-2022/</p>

SGC	Journals	Conference Papers	Policy Briefs	Manuscripts/Articles for Publication	Published Articles	Webinars/workshops	Social Media	Other
Zambia	<ul style="list-style-type: none"> African Journal of Science Technology Innovation and Development: A guiding framework for promoting public-private partnerships in research and innovation: Evidence from a developing country context A guiding framework for promoting public-private partnerships in research and innovation: Evidence from a developing country context Request PDF A scientific paper was accepted for publishing in the British Medical Journal (BMJ). The paper is titled: Gender integration and female participation in scientific and health research in Zambia: A descriptive mixed methods cross-sectional study: Gender integration and female participation in scientific and health research in Zambia: a descriptive cross-sectional study protocol BMJ Open <p>Research gate https://www.researchgate.net/publication/369049611 Gender integration and female participation in scientific and health research in Zambia a descriptive cross-sectional study protocol</p>	Conference papers (details not specified)	<ul style="list-style-type: none"> A Policy Brief on the model to strengthen the collaboration between the Government, Academia and Industry to promote research and innovation in Zambia A Policy Brief on a framework for establishing Public Private Partnerships in Research and Innovation in Zambia 	A manuscript on the project "Geo-spatial epidemiological modelling of selected climatic and environment factors that may shape COVID-19 pandemic in Mozambique and Zambia"	Not specified	Not specified	Not specified	<p>Workshop presentations, Posters, Flyers.</p> <p>The posters and information flyers were presented at public fairs e.g. the 2023 Agricultural and commercial Show.</p>

SGC	Journals	Conference Papers	Policy Briefs	Manuscripts/Articles for Publication	Published Articles	Webinars/workshops	Social Media	Other
Burkina Faso	Not specified	Not specified	Not specified	Not specified	Research articles (details not provided)	The Ministry of Higher Education, Research and Innovation has initiated a workshop to present the results of nine projects funded by the National Fund for Research and Innovation (FONRID).	Not specified	Reports, Books, Policy notes, Standard operating procedures (SOPs), Manuals, Models.
Rwanda	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	X platform: https://x.com/ScienceTechRw/sta-tus/1707418490213130708	Host institution websites https://research.ur.ac.rw/node/1612 Fliers, posters
Mozambique	Not specified	Not specified	Not specified	Not specified	Not specified	One national Workshop in Ethics in Science and Technology and Bioethics in Mozambique was hosted by FNI in collaboration with UNESCO and Eduardo Mondlane University were issues related with artificial intelligence was discussed.	Not specified	Formal and informal meetings.
Tanzania	Profit Efficiency in Beef Cattle Fattening in Tanzania. A case of Kongwa and Morogoro Districts African Journal of Innovation and Entrepreneurship (AJIE), Volume 2, Number 2, December 2023, Pp 159-182	<ul style="list-style-type: none"> Sunflower oil mini-refinery technology for enhanced productivity and income generation Development of Mechanization Technology in Sunflower Harvesting, Threshing and Improvement of Oil Processing for Small Scale Producers 	Not specified	<ul style="list-style-type: none"> Effects of finishing practice and time of slaughter on the growth performance and profitability of Boran crossbred cattle - Manuscript authored by E. P. Maro*, G.H. Laswaia, A. Z. Sangedaa I. S. Selemani M. N. Shem Evaluation of slaughter-carcass characteristics and meat quality of Boran crossbred bulls finished on different finishing practices and slaughter periods - Manuscript authored by E. P. Maro, G.H. Laswaia, A. Z. Sangedaa I. S. Selemani M. N. Shem 	Newspaper articles The Science Granting Council Initiative: A catalyst for more research: Newspaper articles – The Guardian 6th January 2022	Not specified	Not specified	5 MSC dissertations produced Technology dissemination through various platforms such as Trade fair, Innovation week, DITF, Nanenane under the project on development and Commercialization Of A Suitable Avocado Oil Mini-Extraction Plant To Enhance Productivity and Quality Of Avocado Oil in Tanzania

SGC	Journals	Conference Papers	Policy Briefs	Manuscripts/Articles for Publication	Published Articles	Webinars/workshops	Social Media	Other
				<ul style="list-style-type: none"> • Performance of Boran and Two Strains of Tanzania Short Horn Zebu Fed on Three Different Diets under Feedlot Condition - Manuscript authored by Khatibu A Salum, Germana H. Laswai, Daniel D. Mushi • Quality Characteristics of Beef from Tanzanian Shorthorn Zebu Strains Fed With Innovative Feed Package - Manuscript authored by Rashid, Yasir Hemed, Chaula, Davis Naboth, Seleman, Ismail Said • Mapping of Core Value Addition Processes and Beef Quality Requirements for Industrial Value Addition - Manuscript authored by Rashid, Yasir Hemed, Chaula, Davis Naboth, Seleman, Ismail Said • Assessment of sunflower production practices in Tanzania: A case of small-scale farmers - Completed Manuscript 				
Zimbabwe	<p>Research Council Of Zimbabwe: White Paper Compendium on Mineral Technology and AgriculturalBiotechnology</p> <p>https://www.academia.edu/128597198/Investigating_diverse_microbial_consortia_for_production_of_biofertilisers</p>	Not specified	Not specified	Not specified	<p>Media article: Zim, Malawi in joint bio-fertilisers research https://www.heraldonline.co.zw/zim-malawi-in-joint-bio-fertilisers-research/</p> <p>NUST, Lilongwe University in bio-fertiliser deal https://www.heraldonline.co.zw/nust-lilongwe-university-in-bio-fertiliser-deal/</p> <p>Zimbabwe Malawi in Joint Fertilizer Research https://farmersreviewafrica.com/zimbabwe-malawi-in-joint-bio-fertilisers-research/</p>	Not specified	Not specified	Not specified

SGC	Journals	Conference Papers	Policy Briefs	Manuscripts/Articles for Publication	Published Articles	Webinars/workshops	Social Media	Other
Senegal	Two publications in the African Journal of Microbiology Research	Not specified	Not specified	Not specified	BBC: https://www.bbc.com/afrique/region-54404412 Le Chasseur infos, a media magazine: https://lechasseurinfos.bj/	Not specified	Not specified	<ul style="list-style-type: none"> • 5 theses completed (3 masters, 1 bachelors, 1 engineering) • Another Two Master's degrees supported and One PhD that was in progress with a CARITAS-affiliated student (no information as to whether the degrees were completed) • The research outputs were also disseminated on The West Africa Democracy Radio (WADR) is a trans-territorial, sub-regional radio station based in Dakar, Senegal. https://wadr.org/about-us/
Botswana	<ul style="list-style-type: none"> • Moyo, L. B., Simate, G. S. and Mamvura T. A. (2022) Magnesium recovery from ferrochrome slag: kinetics and possible use in a circular economy, Heliyon, 8(12), e12176. https://doi.org/10.1016/j.heliyon.2022.e12176 	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Thesis: Gabasiane, T. S. (2024) Beneficiation of BCL smelter slag to recover copper and iron by flotation and high pressure leaching. Co-supervising with Prof Danha and Prof Mashifana.

SGC	Journals	Conference Papers	Policy Briefs	Manuscripts/Articles for Publication	Published Articles	Webinars/workshops	Social Media	Other
	<ul style="list-style-type: none"> Sibanda, V., Makara, L., Sebose, L., Setimo, T., Mamvura, T.A. and Danha, G. (2022) Selective flocculation and recovery of chrome from plant slimes using starch and sodium oleate as flocculants, <i>Gospodarka Surowcami Mineralnymi – Mineral Resources Management</i> 38(4), 1–26. https://doi.org/10.24425/gsm.2022.143624. Gabasiane, T. S., Danha, G., Mamvura, T. A., Mashifana, T. and Dzinomwa, G. (2021) Characterization of copper slag for beneficiation of iron and copper, <i>Heliyon</i>, 7(4), e06757. https://doi.org/10.1016/j.heliyon.2021.e06757. 							
	<ul style="list-style-type: none"> Gabasiane, T. S., Danha, G., Mamvura, T. A., Mashifana, T. and Sibanda, V. (2023) Application of attainable region technique to optimize copper slag's desired size class, <i>Minerals</i>, 13, 19. https://doi.org/10.3390/min13010019. 							
	<ul style="list-style-type: none"> Mamvura, T. A., Gabasiane, T., Ntuli, F., Betsi, T. B. and Beas, I. (2023) Characterisation of Copper Smelter Slag from BCL Decommissioned mine for Base Metal Recovery in Botswana, Paper to be submitted to a journal. 95% complete. 							

SGC	Journals	Conference Papers	Policy Briefs	Manuscripts/Articles for Publication	Published Articles	Webinars/workshops	Social Media	Other
Cote D'Ivoire	<p>A total of five (5) scientific articles were published based on the funded projects: (Three (3) from Dr. KOUAKOU Adjoumani Rodrigue's project; Two (2) from Dr. BENE Kouadio's project)</p> <p>An additional article from Dr. KIPRE Gueyraud Rolland's project was submitted for publication.</p>	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	<p>Five (5) Master's theses were completed as a result of the supported projects.</p> <p>(1 from Dr. KOUAKOU's team; 1 from Dr. BENE's team; and 3 from Dr. KIPRE's team)</p>
Namibia	Not specified	Not specified	Not specified	Not specified	<ul style="list-style-type: none"> • Application of indigenous knowledge in the management of infectious diseases(Malaria, • Tuberculosis and COVID-19) in Manica and Tete provinces of Mozambique, and in the Zambezi region of Namibia. https://360mozambique.com/innovation/namibia-joins-mozambique-in-a-project-on-diseases/ https://www.environmentnewsigeria.com/namibia-teams-up-with-mozambique-on-infectious-diseases-project/ • Namibia teams up with Mozambique on diseases project https://www.africa-press.net/namibia/all-news/namibia-teams-up-with-mozambique-on-diseases-project 	Not specified	Not specified	Not specified



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