

Strengthening Agricultural Greenhouse Gas Research Collaboration



QINISA INITIATIVE *Launch Report*

27–28 August 2024, Pretoria, South Africa



Executive Summary

The Qinisa Initiative is a groundbreaking program launched to address the pressing challenges of climate change, agricultural greenhouse gas (GHG) emissions, and food insecurity in Southern Africa. Agriculture, a critical sector in the region, faces threats from climate change and is also a significant contributor to global GHG emissions. Qinisa, meaning "to strengthen" in IsiZulu, aims to foster collaboration, research, and innovation to mitigate these challenges by focusing on low-emission, climate-resilient agricultural systems.

The initiative was officially launched on August 27, 2024, in Pretoria, South Africa, with participants from various sectors, countries, and international organizations. The event highlighted Qinisa's vision of coordinated GHG research, capacity building, and data sharing across Southern Africa. Key goals include supporting governments in monitoring GHG emissions, providing industry access to validated environmental data, and fostering collaboration among researchers, the private sector, and policymakers.

Qinisa's multi-stakeholder approach focuses on building a shared research agenda, developing a centralized data platform, and strengthening partnerships to drive agricultural innovation and sustainability. The initiative also prioritizes capacity building and the development of technologies for GHG mitigation. Through its collaborative framework, Qinisa seeks to accelerate the development of sustainable agri-food systems and improve climate governance in Southern Africa. This report outlines the concept, rationale, and strategic objectives of Qinisa, presenting key outcomes from its launch and workshops while detailing the next steps for resource mobilization, partnership formalization, and the creation of a long-term operational structure.

Key messages

Strengthening Partnerships:

Collaboration across sectors is key to advancing climate-resilient agri-food systems in Southern Africa through inclusive climate change mitigation.

Shared Research Agenda:

A unified, demand-driven research agenda on agricultural GHG emissions will guide research and policy to boost productivity and reduce emissions.

Centralized Data Platform:

Qinisa will create a platform for validated GHG data, supporting governments, industries, and researchers with data for climate commitments, compliance, and investment.

Partnership Dialogue:

An exclusive roundtable will finalize the initiative's vision, scope, and partnerships, focusing on equitable and transformative outcomes.

Qinisa

the Concept & its Rationale

Agriculture is the backbone of African economies, yet it faces significant challenges such as climate change, resource constraints, food insecurity, and low productivity. The growing threat of climate change, combined with global shocks to the food system, continues to severely impact agriculture and food security. These trends are expected to worsen, leading to declining yields, increased pest and disease pressures, and more frequent disruptions in crop and livestock production.

Agriculture is not only vulnerable to climate change but also a key contributor to global greenhouse gas (GHG) emissions, which drive climate change. Globally, agriculture accounts for 14% of annual GHG emissions, with sub-Saharan Africa contributing 12.4%, or 103 million tonnes of carbon dioxide equivalent (CO₂e) emissions. Additionally, land use, land-use change, and forestry (LULUCF) contribute significantly to GHG emissions, much of which stems from the clearance of forests for agricultural purposes.

There is an urgent need for integrated, multidisciplinary approaches to address this dual challenge of mitigating climate change while enhancing agricultural productivity. In Southern Africa, where societal well-being is closely tied to environmental health, understanding the impacts of climate change on development priorities—and adapting economies, societies, and natural resource management practices accordingly—is crucial for achieving sustainable development and improving climate governance. Policymakers increasingly rely on accurate environmental data to inform decisions. However, the limited availability of agricultural GHG data, coupled with fragmented research efforts in Southern African countries, presents serious challenges.

Qinisa, is an IsiZulu word meaning “to strengthen,” reflecting the purpose of the Initiative.

By leveraging existing and planned research efforts of countries and organisations and creating opportunities to highlight available practical and cost-effective technologies and practices, the Qinisa Initiative aims to strengthen collaboration in agricultural GHG-related research in Southern Africa. Building on the Global Research Alliance on Agricultural Greenhouse Gases’ (GRA) collaborative ethos among its large network of member countries and partner organisations, Qinisa provides an opportunity to better coordinate, communicate, and accelerate research on the management and measurement of agricultural GHG in Southern Africa.

The Initiative also aims to develop new collaborations and provide a central platform for information and knowledge exchange, ultimately serving as an accelerator to the development of low emission and climate-resilient agricultural food systems.

Qinisa Launch

The official launch of the Qinisa Initiative took place on August 27, 2024, at the Sheraton Hotel in Pretoria, South Africa, bringing together 53 participants from various sectors including researchers, development professionals, agribusiness practitioners, government officials, and civic organizations. Attendees represented several countries, including the Democratic Republic of Congo, Mozambique, Namibia, South Africa, Eswatini, Malawi, Zambia, and Zimbabwe. The event also featured delegates from international organizations like FAO, ILRI, SACAU, and special guests from the global community, reflecting the growing importance of the Qinisa Initiative across the region.

The launch, open to the media, was live-streamed on YouTube, drawing over 40 virtual participants. The first day (27th August) focused on presenting the vision, relevance, and value proposition of the Qinisa Initiative to stakeholders. The event began with a video presentation explaining the meaning of "Qinisa" and providing a brief overview of the Initiative, setting the stage for further discussions. This set the stage for further discussions about Qinisa's relevance, vision, and value to stakeholders. The video can be viewed on the Qinisa YouTube Channel at <https://youtu.be/JNoR34KeREI>

Following the video, introductory speeches were delivered by three special guests, **H.E. Philip Hewitt**, New Zealand High Commissioner; **Mr. Joel Mamabolo** from South Africa's Department of Agriculture; and **Dr Majola Mabuza** from the Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA).

“The Qinisa Initiative represents a crucial step forward in addressing the pressing challenges of agricultural climate change sustainability and food security. It is a cause worth supporting”

H.E. Philip Hewitt, New Zealand High Commissioner



The launch of the Qinisa Initiative was introduced by **Prof. Lindiwe Majele Sibanda**, Adjunct Professor at the University of Pretoria and Chair of the CGIAR System Board. Prof. Sibanda highlighted the critical role the Qinisa Initiative will play in addressing agricultural sustainability and food security challenges amid climate change. She stressed the importance of agricultural GHG research and collaboration, outlining the initiative's benefits for various stakeholders:

- **Governments** will receive support in setting, monitoring, and tracking Nationally Determined Contributions (NDC) targets.
- **Industry** will gain access to validated GHG footprint data, facilitating entry into international markets.
- **Researchers** will benefit from a coordinated GHG research agenda, identification of niche research areas, capacity building in human resources and infrastructure, and collaboration on research calls.
- **The Private Sector** will have a platform for business-to-business deal-making opportunities in GHG research investments.
- **Consumers** will be empowered to make evidence-based decisions regarding the environmental footprint of their food choices.

Prof. Sibanda emphasized that this multi-stakeholder approach will foster collaboration and drive meaningful progress in building climate-resilient agri-food systems.



“The launch of the Qinisa Initiative marks a significant step towards strengthening institutional collaboration and enhancing the capacity to collate agricultural GHG data that will enable more accurate reporting of Nationally Determined Contributions (NDC) in Southern African countries that are signatories to the Paris Agreement”

Prof. Lindiwe Majele Sibanda, Adjunct Professor University of Pretoria & Chair of the CGIAR System Board

Solidarity statements from **Dr Sepo Hachigonta**, Director at the National Research Foundation (NRF), and **Dr Lewis Hove**, Resilience Team Leader for FAO Southern Africa, further reinforced Qinisa's value in promoting GHG research collaboration. **Dr Angela Ibanda Pembele**, Director of the Institute of Sciences of Societies and Sustainable Development (ISSDD) in the Democratic Republic of Congo, echoed these sentiments in a written statement (Appendix 2).

Workshop Highlights

Following the official launch of the initiative, interactive workshop discussions were held, featuring presentations by researchers and private sector participants. These sessions aimed to enhance understanding of the status, gaps, and challenges in the measurement and management of agricultural greenhouse gases (GHG), as well as the implementation of adaptation and mitigation strategies in the region.

Michaela Pretorius shared an industry perspective on agricultural GHG emissions, drawing on the work of the [Cavalier Group](#), a fully integrated red meat value chain specializing in procurement, feed-lotting, slaughter, packing, processing, and distribution of high-quality beef and lamb products. Her presentation emphasized Cavalier's commitment to conservation and sustainable business practices in areas such as water, waste, and energy management, as well as strategies for



reducing GHG emissions, while also addressing the challenges of quantifying environmental impacts.

Dr Claudia Arndt from the International Livestock Research Institute (ILRI) and **Dr Jerry Dlamini** of North-West University provided an overview of agricultural greenhouse gas (GHG) research and policy in Southern Africa. Claudia focused on the latest research developments in the livestock sector, while Jerry highlighted GHG research on crops, soils, and pastures.



Sithembile Mwamakamba from FANRPAN chaired a panel discussion featuring **Theo Boshoff**, CEO of Agbiz, South Africa, **Minky Groenewald** from the Centre for Climate Change and Sustainability Research (CCCSR) in Eswatini, and **Prof. Tafadzwa Mabhaudhi** from ARUA-SFS. The panel explored opportunities for enhancing collaboration on GHG mitigation and adaptation research.

Dr Florence Nherera-Chokuda facilitated participatory discussions on the proposed operational arrangements and the co-development of the Theory of Change for the Qinisa Initiative.

The second day of the event, held on August 28th, focused on thematic group discussions covering soils, crops, pastures, and livestock. These sessions aimed to help the program secretariat accurately capture the essential components of the operational plan and logical framework, including activities, outputs, indicators, and outcomes (outlined in Annex 1). Additionally, the discussions provided a platform for participants to share their experiences and explore key research needs related to agricultural GHG measurement and mitigation within Southern Africa's agri-food systems. Key highlights from the second day are outlined below.

Qinisa Launch

Key Messages

Developing a Shared Research Agenda:

To ensure agricultural greenhouse gas (GHG) research is targeted and demand-driven, developing a common research agenda through collaborative dialogue is essential. A unified research agenda will align the efforts of researchers and practitioners in Southern Africa, focusing on agricultural GHG emissions while addressing both local and regional needs. Qinisa will provide a platform for stakeholders to discuss critical research and policy concerns, shaping an agenda that informs current research and practical applications. This will guide researchers and funders in addressing key policy questions, leading to improved agricultural productivity and reduced GHG emissions, while advancing the region toward achieving the Sustainable Development Goals (SDGs).

Strengthening Partnerships:

Collaboration between the private and public sectors, including higher education institutions, research centres, and investment partners, is essential for advancing low-emission, climate-resilient agri-food systems in Southern Africa. This requires a proactive strategy to build networks, create spaces for exchange and shared leadership, and ensure that all stakeholders understand how the initiative aligns with their interests. An inclusive approach to climate change mitigation will ensure no one is left out of the process.

Building a Centralised Data Platform:

Southern African institutions face significant challenges in data collection and processing, resulting in weak evidence bases that hinder policy development and market access. Qinisa aims to overcome this by developing a cutting-edge data platform that aggregates, validates, and commercializes GHG data from research institutions across Africa. Stakeholders across the agricultural value chain will be encouraged to contribute to this centralized platform, benefiting from improved access to validated GHG data.

Funding of the Qinisa Initiative:

Sustained and predictable funding is essential to the success of the Qinisa Initiative. The initiative requires significant investments in human and financial resources, infrastructure, and technological support. The New Zealand Government and Future Africa were commended for their valuable contributions toward the successful completion of Phase 1 activities. Moving forward, all partners are encouraged to engage actively in developing innovative financing mechanisms that will enable the effective implementation of the Qinisa Initiative as a regional platform.



The Way forward

To ensure the continuity and success of the Qinisa Initiative, the following steps have been outlined:

Strengthening the Qinisa secretariat

To ensure the continuation of core activities essential for transnational research coordination and collaboration—such as mapping initiatives, database development, dissemination of research outputs, advising on agricultural GHG research priorities, and maintaining key stakeholder relationships—the Qinisa interim secretariat, currently hosted by Future Africa, University of Pretoria will be strengthened and transformed into a Project Management Unit (PMU). This PMU will be supported by management and technical committees, which will provide strategic direction to achieve key outcomes, including enhanced collaboration, improved investment alignment, and capacity building for reducing GHG emissions over the next five years (2025-2030).

Formalization of partnerships with stakeholders

The secretariat will facilitate engagements with relevant government departments (agriculture, environment and water), research and educational institutions, private sector, farmer civic bodies and funding partners and formalize partnership arrangements with interested players through signing memorandums of understanding (MoU) or letters of intent. The partners will review GHG research status, deliberate, set and align GHG research agendas for prioritised thematic areas (crops, soils, pastures and livestock), identify funding sources for research and postgraduate support, share knowledge and expertise, and develop talent and technologies to mitigate climate change challenges in Southern African food systems.

Development of long-term operational structure

The Secretariat will develop, test, and refine a long-term, self-sustaining operational structure and *modus operandi* for the Qinisa Initiative to ensure its continuity beyond 2025. This will enable the initiative to deliver effective regional research coordination and collaboration in support of climate-resilient agri-food systems in Southern Africa. Additionally, it will build confidence and expertise in the initiative's management structures, processes, and tools required for implementing transnational research, showcasing the added value and benefits of participation in the initiative.

Data and information management system

The Qinisa aims to develop a regional agricultural GHG research data and information repository, supported by management and thematic research committees. This repository will consist of harmonized, anonymized farm and industry-level datasets, covering areas such as crops, soils, livestock, pastures, climate, and earth observations from universities, farms, and other sources. The goal is to ensure these datasets are easily accessible and usable beyond the project's duration.

Qinisa will build on existing data repositories within regional institutions, further developing them to enable robust and transparent use for running models and algorithms (e.g., life cycle assessment, LCA), decision support tools, and national GHG emission inventories. This will be complimented by data collection using advanced technologies such as drones, remote sensing, blockchain, and IoT for precise tracking of emissions and informed decision-making across the region. A core element of this effort will be capacity development, with a focus on postgraduate training in data management and artificial intelligence.



Dissemination and Communication

To enhance the visibility of the Qinisa Initiative and its GHG research efforts among consortium members and other stakeholders, a comprehensive communication strategy will be developed. This strategy will facilitate transnational knowledge exchange among consortium partners, promote the work carried out by the PMU and thematic research committees, and ensure effective engagement with key stakeholders and policymakers at both national and international levels.



The strategy will carefully consider target audiences and the settings in which program activities and outputs are delivered, ensuring impactful communication and interaction. Given the diverse range of stakeholders involved, a variety of dissemination channels will be employed to raise awareness. These will include relevant networks, stakeholder

communities, and social and professional media, including a dedicated website.

Traditional communication methods such as workshops, science-policy dialogues, information sessions, newsletters, social media posts, and TV panel discussions will also be utilized. The goal is to develop knowledge-sharing resources that amplify GHG research efforts, empowering farmers, industry leaders, and policymakers with data-driven insights to implement sustainable, climate-resilient agricultural practices.

Resource mobilisation

The long-term sustainability of the Qinisa Initiative will be ensured through ongoing support from research projects and effective resource mobilization. The secretariat will actively explore funding opportunities and financial incentives to advance research and technology development for the adoption of low emission agricultural practices. To this end, the Secretariat will leverage partnerships with organisations such as the National Research Foundation, which has a continental mandate for funding and supporting capacity building on climate action projects. Additionally, it will review regional and international funding facilities and engage industry partners who can benefit from the verification and validation of product emission data, encouraging them to contribute to research efforts.

The Qinisa Secretariat is now responsible for advancing these efforts and facilitating engagement with like-minded regional and global institutions in a roundtable partnership dialogue. An exclusive, invitation-only exchange will be convened to finalize key ideas from the workshop, including its vision, merits, scope, potential outcomes, financial implications, and the necessary operational infrastructure and partnerships. The roundtable discussions will address the initiative's key needs, taking a pragmatic, solution-oriented approach.

A central focus of the discussion will be demonstrating commitment from the partners, highlighting the quality of the partnerships, the unique value proposition, and the transformative impact of the initiative. Ensuring effective participation, trust and equity will be key markers in achieving the desired outcomes. The Secretariat will update all partners and stakeholders on progress within three months of the launch.

“ Qinisa is not just about ideas; it is about execution. We began with a vision of what is possible, but we will not stop there—we are committed to building, testing, and scaling that vision. We are now bringing together diverse talents and perspectives to turn the vision into reality. By engaging stakeholders, fostering community involvement, and committing to real change, we are making that vision come to life ”

*Dr Ackim Mwape,
Africa Program Lead, GRA*



Closing of the Workshop

At the conclusion of the workshop, participants were asked to share their key takeaways from the Qinisa Inaugural Workshop and their vision of short-term success for the initiative. Overall, the feedback was highly positive, with participants agreeing that the Qinisa Initiative was timely and well-received. Their comments focused on four key outcomes:

Enhanced networking and coordination among stakeholders to align agricultural GHG research priorities across Southern Africa.

An agreed-upon regional GHG research agenda for Southern Africa.

A reliable, centralized platform for sharing validated and standardized agricultural GHG data to improve research efficiency and resource use.

Accessible information to increase the visibility of GHG research, empowering farmers, industry, and policymakers with data-driven insights for sustainable agricultural practices.

The workshop was officially closed by **Prof. Barend Erasmus**, Dean of the Faculty of Natural and Agricultural Sciences at the University of Pretoria. Prof. Erasmus reiterated the University of Pretoria and Future Africa's full support for the Qinisa Initiative, emphasizing that it would not only benefit the university but all consortium partners. He urged all partners to continue engaging to build strong partnerships and networks, which are essential for fostering research collaboration and the capabilities needed to achieve sustainable agri-food systems in Africa.

Qinisa marks the beginning of a transformative journey toward sustainable agriculture in Southern Africa.

“We tend to underestimate the capabilities that exist in our region and continent, and Qinisa is testament to identification and leveraging the inherent strengths at our disposal. Collaboration is therefore a critical driver of this initiative”

Prof Barend Erasmus, Dean, Faculty of Natural and Agricultural Sciences, University of Pretoria



Qinisa Logical Framework

Objective One: *Strengthen AGHG Research Collaboration and Partnerships*

Activities	Outcomes	Indicators
<ul style="list-style-type: none"> Setting up the Qinisa Initiative platform with a functional governing structure Stakeholder mapping Establishing Strategic Partnerships Establish MoUs for research cooperation Proposals for increased investment support Create Thematic expert groups- soils crops pastures & livestock (poultry & ruminants) Leverage complementary expertise in private sector Engage in public & private sector strategic committees for setting emission targets Developing a common vision for GHG research in Southern Africa and developing the regions' Low-Emission Development Strategy 	<ul style="list-style-type: none"> Established Qinisa secretariat and governing structures at Future Africa Partnerships with public and private sector established Funded research programs Technical committees established for thematic groups Database of technical expertise to support research Qinisa experts supporting national functional and strategic committees on climate change Regional low emission development strategy is developed 	<ul style="list-style-type: none"> Regional AGHG research coordination centre established at Future Africa with a Functional Secretariat MoUs for cooperation signed- by AGHG research institutions and funding partners Increase in AGHG scholarship & research grants approved for postgraduate support Qinisa experts involved national & regional forums & strategic committees Annual regional Integrated AGHG conference/meeting (Science and private sector dialogues) A regional, unified research agenda.

Objective Two: *Foster Research and Resource Alignment*

Activities	Outcomes	Indicators
<ul style="list-style-type: none"> Mapping of regional stakeholders' roles and activities and outcomes (logic frameworks) Resource mapping and sharing of infrastructure, tools, and knowledge Database / repository of research and projects. Establishing a regional data management and sharing platform that links public and private agricultural research and development institutes at regional and continental levels. Science-policy dialogues and workshops Synthesis and prioritization Ongoing networking Horizon scanning Research landscape analysis 	<ul style="list-style-type: none"> Qinisa database of expertise and regional AGHG archives Improved & coordinated investment in AGHG research Enhanced quality, relevance and management of data Improved linkages and communication between research organizations (data providers and users) Convening role in climate action is strengthened and developed Increased stakeholder participation in AGHG-related research 	<ul style="list-style-type: none"> Database of AGHG research and experts Increased number of good quality research papers Increased participation of qualified researchers in AGHG Increase in intervention programs that have regional orientation Increase in AGHG research outputs that are commercialized Improved networking and coordination among stakeholders. Increased access to GHG data and information by stakeholders

Objective Three: Strengthen Capacity and Capability

Activities	Outcomes	Indicators
<ul style="list-style-type: none"> Establish partnerships to identify key areas for enhancing the research capacity of its members Mapping infrastructure, tools & data Assessing the availability of GHG research infrastructure and equipment to pinpoint technical, institutional, and infrastructure gaps within priority areas Mapping funding for talent, tools & infrastructure development Identifying and creating opportunities for emerging scientists to build expertise in AGHG mitigation and climate change research. 	<ul style="list-style-type: none"> Database of GHG research facilities and tools in the region Facilities and tools are augmented through institutional linkages Talent is developed in agreed priority areas through work learnerships and internships support in private sector Accreditation of facilities with high capability for GHG research in soil, crops, pasture & livestock 	<ul style="list-style-type: none"> Database of facilities or institutions that have capacities for AGHG measurements is established Number of people equipped with technologically advanced skills to measure and Manage AGHG Number of trainings organised and delivered

Objective Four: Enhance Communication and Dissemination

Activities	Outcomes	Indicators
<ul style="list-style-type: none"> Public engagement through media & public platforms (Advocacy for AGHG mitigation) Engage relevant national government bodies and regional international organisations, and civic sector in policy development, monitoring and reporting Information sharing -research outputs and data Monitoring progress on AGHG emissions research Development of policy briefs and other knowledge products. Disseminating research/programme information. Documenting and sharing key lessons learnt to guide similar activities in other regions 	<ul style="list-style-type: none"> Communication on AGHG through public media and social platforms for awareness creation (advocacy for GHG mitigation) Engagement with strategic partners to set measurement and reporting frameworks 	<ul style="list-style-type: none"> Programs on TV, radio and social media Publications- science diplomacy Publications- scientific National & regional Reports Continued engagements national Strategic Planning on climate change Consumer awareness and behavioural changes (long-term) to low emission patterns



Solidarity Statement

Institute of Sciences of Societies and Sustainable Development (ISSDD), Democratic Republic of Congo.



Greetings to all esteemed colleagues and partners

I am **Dr Angele Ibanda Pembele**, Director of the [Institute of Sciences of Societies and Sustainable Development \(ISSDD\)](#) in the Democratic Republic of Congo. At ISSDD, we are deeply committed to advancing sustainable development through scientific research, innovation, and community engagement, particularly in the realms of sustainable agriculture, natural resource management, and social equity.

We are thrilled to be a part of the Qinisa Programme, as it aligns perfectly with our mission to address the critical challenges of our time—namely, the reduction of

greenhouse gas emissions and the enhancement of climate resilience in agriculture. The work we do at ISSDD, especially in the Faradje Territory of the Haut-Uele Province, is driven by a vision of eradicating ignorance and building a brighter, more sustainable future for the most vulnerable populations.

Partnering with Qinisa is not just an opportunity, but a necessary collaboration that embodies the spirit of collective action. By combining our strengths, we can develop and implement climate-smart agricultural practices that will not only mitigate the impacts of climate change but also improve food security, enhance livelihoods, and foster environmental stewardship across Africa.

Together, we have the power to make a lasting impact—one that transcends borders and unites us in our shared goal of sustainable development. I am confident that through our combined efforts, we will drive positive change and create resilient agricultural systems that will benefit generations to come.

Thank you for your dedication and commitment to this vital cause. I look forward to our continued collaboration and the success of the Qinisa Programme.

Partners



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