



Scoping a Future Research Agenda for Agricultural Greenhouse Gases in Southern Africa

Brief on the outcomes of a Science-Policy Dialogue

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OUTLINE

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New CCARDESA: Mission & Thematic Areas

VISION:

Sustainable agricultural growth and socio-economic development in the SADC

MISSION:

To set the regional research and development agenda, mobilise resources, support capacity development, foster collaboration and provide agricultural information and knowledge in the SADC

1

Agricultural productivity and food and nutrition security

2

Resilience to emerging agricultural risks: environmental, climate change & transboundary diseases and pests

3

Commercialisation of the agricultural sector and market access

4

Knowledge and information management, communication and policy support

5

Capacity strengthening of CCARDESA and AR4D institutions

6

Women, Youth and Social Inclusion

Introduction

Regional Awareness-Raising Workshop on Low Emissions Livestock: Supporting Policy Through Science in Southern Africa in July, 2019 in Pretoria

On November 10, 2021 CCARDESA and New Zealand Agricultural Greenhouse Gas Research Centre (NZAGRC), hosted a Science-Policy Dialogue on status of research on agric. greenhouse gas emissions in Southern Africa and future directions.

Dialogue included specialised/expert groups on crops, livestock, and agricultural land use, that gathered information and perspectives on the priorities for research and governance on agricultural GHGs.

Dialogue was convened to inform CCARDESA, as it considered development of a common research agenda for agricultural GHG emissions in southern Africa (AGHG-SA).

A summary of the outcomes of the Science-Policy Dialogue: *and* recommendations for how to develop a research agenda, and mechanisms for governing this research.

Background

- Improving food security and reducing climate vulnerability will require a wide range of climate response strategies.
- Increasing productivity, along with pursuing adaptation to climate change impacts and reducing greenhouse gas (GHG) emissions.
- SADC governments work to prevent and respond to food security needs and climate change concerns.
- Evidence-base to inform these interventions is lacking.
- Limited analysis on the effectiveness, costs, and impacts of agronomic and animal husbandry adaptation and mitigation measures, this constrains decision-making at all levels to promote context specific CSA practices with mitigation co-benefits

Background

- Southern Africa one of world's most vulnerable countries to climate change
- Climate change is already affecting agriculture; impacts will intensify
- Rising temperatures and increasing frequency and intensity of extreme weather events such as droughts and floods, plus land degradation and poverty, pose an increasing threat to populations, and have severe consequences on ecosystem services and agricultural productivity.
- Most ecosystems display some level of anthropogenic degradation resulting from livestock grazing, fuelwood collection, cultivation, and urbanization - increasing regional risk of food and nutrition insecurity

Approach

- Dialogue included a plenary session on the status of agricultural GHG mitigation research in southern Africa and the existing research gaps along with the actions required to address them.
- In addition, the challenges, opportunities, and priorities for strengthening agricultural GHG research coordination were discussed in three expert groups (Crops, Livestock and Agricultural land use).
- Prior to the dialogue, a planning group including CCARDESA, NZAGRC, CIMMYT, University of Zimbabwe and University of Free State in South Africa, brainstormed and set out the questions which were used in the breakout groups to engage participants in generating and integrating collective ideas about what is important for strengthening AGHG-SA.
- Other key stakeholders consulted : ILRI, FAO , GIZ, ReNAPRI, University of Pretoria. International Maize and Wheat Improvement Center
- Claudia Arndt, Senior Scientist, International Livestock Research Institute (ILRI)
- Lewis Hove, Coordinator, FAO Resilience Hub for Southern Africa
- Dieter Nill, GIZ Botswana Office
- Nalishebo Meebelo, Executive Director, Regional Network of Agricultural Policy Research Institutes (ReNAPRI)
- Linde du Toit, Senior Lecturer, University of Pretoria

KEY CHALLENGES

1. **Largely fragmented research governance system**
2. **Limited availability of GHG data**
3. **Lack of long-term research funding**

Recommendations

- I. Stocktaking of AGHG related projects/programmes in Southern Africa and mapping of the actors (universities, research institutions, networks, and collaborators) involved, including their responsibilities, specific activities and outputs, and the support received.
- II. This study should also explore and recommend appropriate research coordination mechanisms at regional scale. It should consider research governance mechanisms that already exists, examples of research financing mechanisms currently being used in other regions and/or areas of scientific inquiry that could be adapted, and any potentially new frameworks required.
- III. Establish coordination mechanisms for AGHG research that include roles for governments, universities, independent institutions, research teams, and other organisations. This could increase opportunities for data exchange, matching research streams with appropriate utilization processes
- IV. Develop a regional financing mechanism for climate adaptation and mitigation research in the SADC.

Proposed way forward

- To implement the recommendations, a working group under the auspices of CCARDESA be created to develop a common research and application agenda for AGHG- and address future governance, coordination, and resource needs.
- With support from CCARDESA, NZAGRC and other international partners, the working group will serve as a platform for the coordination, networking, visibility, and presentation of research projects on agricultural greenhouse gas emissions in Southern Africa.
- CCARDESA and other regional partners (e.g. FANRPAN, ReNAPRI) will use their regional networks of research facilities, government representatives, and private stakeholders to support the implementation, utilization, and upscaling of research on agricultural GHG emissions.
- NZAGRC, leveraging the GRA's scientific expertise and networks, will work closely with international partners and provide technical support and strategic oversight.

Roles of Working Group

- Coordinating across national research agencies.
- Fostering interdisciplinary and transdisciplinary knowledge.
- Developing and maintaining an active database of AGHG research activities in the region.
- Engaging relevant international and national stakeholders and co-developing a regional research agenda, accompanied by an investment and operational strategy for agricultural GHG gas emissions research.
- Advancing the eventual development of a regional financing mechanism.

Table1. Initial activities and deliverables

| No. | Activities | Deliverables | Lead/ Co-lead | STATUS |
|-----|---|--|------------------------------------|--------|
| 1 | Establishment of Working Group | <ol style="list-style-type: none"> 1. Establishment of a working Group, consisting of an agreed number of expert researchers (working on a range of AGHG topics) as well as representatives of NZAGRC, CCARDESA, ReNAPRI and other key stakeholder organisations. 2. Terms of Reference and a working programme for the Working Group established. | Lead: CCARDESA, Co-lead: NZAGRC | |
| 2 | Stocktaking of AGHG related projects/programmes in Southern Africa and mapping of the universities, research institutions, networks and collaborators involved. | <ol style="list-style-type: none"> 1. Stocktake of existing and planned AGHG related programmes in southern Africa completed. 2. Stakeholder mapping and engagement completed. | CCARDESA | |
| 5 | Design of appropriate regional financing mechanism for AGHG research | <ol style="list-style-type: none"> 1. Recommendation for an appropriate research coordination and financing mechanisms at regional scale made. 2. Report on regional financing mechanism completed. | NZAGRC | |

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| 3 | Carrying out an assessment of existing research streams and identification of synergies. | <ol style="list-style-type: none"> 1. Assessment of the priorities and objectives of the identified research projects, as well as matching research streams in order to utilize synergies. 2. Strategy for stakeholder engagement and participation designed /completed 3. Stakeholder coordination meetings held. | NZAGRC | |
| 4 | Co-development of a regional research agenda, accompanied by an investment and operational strategy for agricultural GHG gas emissions in southern Africa. | <ol style="list-style-type: none"> 1. Regional research agenda completed and available. 2. Stakeholder validation workshop held 3. Policy publications completed and available | CCARDESA NZAGRC | |
| 5 | Design of appropriate regional financing mechanism for AGHG research | <ol style="list-style-type: none"> 1. Recommendation for an appropriate research coordination and financing mechanisms at regional scale made. 2. Report on regional financing mechanism completed. | NZAGRC | |

Acknowledgements



CCARDESA
Centre for Coordination of Agricultural Research and Development for Southern Africa



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