SA FANRPAN digest

NAMC
Promoting market access for South African agriculture

FANRPAN
Policies for a Food Secure Africa

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In this issue we cover the following topics:

1. An Overview of AFRICAP Theme B: Developing Climate Smart Agri-Food System Pathways
2. Meet the two of the six FANRPAN steering committee members
3. Disseminating agricultural information through Theatre for Policy Advocacy
4. NAMC's work with United Nation women group: Case of Climate Smart Agriculture awareness

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FANRPAN Digest is a bi-monthly report that is produced by the National Agricultural Marketing Council through the Agricultural Industry Trusts Division. The publication aims to communicate developments as they happen within Food Agriculture Natural Resource Policy Analysis Networks (FANRPAN). This issue focuses on the following topics: (i) An Overview of AFRICAP Theme B: Developing Climate Smart Agri-Food System Pathways; (ii) Meet the two of the six FANRPAN steering committee members; (iii) Disseminating agricultural information through Theatre for Policy Advocacy; and (vi) NAMC's work with United Nation women group: Case of Climate Smart Agriculture awareness

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1. AN OVERVIEW OF AFRICAP THEME B: DEVELOPING CLIMATE SMART AGRI-FOOD SYSTEM PATHWAYS

by Ndumiso Mazibuko

1.1. Introduction

Developing climate smart agri-food systems (CSAS) in sub-Saharan Africa (SSA) is a precondition for achieving the Sustainable Development Goals (SDGs). GCRF-AFRICAP is a direct response to this challenge. The main purpose of the project is to generate evidence-based policy advice (to all stakeholders – especially government) to improve agricultural productivity and resilience to shocks emanating from climate change. The project will build capacity for, co-develop and demonstrate, nationally owned SDG-compliant agri-food development pathways that can be productive, sustainable and climate-smart. GCRF-AFRICAP is designed around four themes, across which there is significant intellectual exchange, integrated research training and capacity development.

1.2. An overview of the themes

This section outlines the details around the four themes: **Theme A** establishes the programmatic groundwork: engaging key stakeholders, mapping national policies and synthesising the evidence on CSAS barriers and enablers, at farm and broader institutional levels. **Theme B** will co-develop nationally appropriate, SDG-compliant agri-food development pathways with in-country stakeholders: integrating projections of changing climate and extreme weather with national development and global mitigation objectives to identify future technology needs. Based on the evidence generated in A, and the pathways developed in B, **Theme C** will co-develop, test and evaluate policies for SDG-compliant agri-food systems, thus building capacity for evidence-based national and regional policymaking and cross-scale implementation.

Theme D will build capacity in professional services and management required to implement international, interdisciplinary and impactful research, as well as providing cross-project training.

A closer look at Theme B: Developing Climate Smart Agri-food System Pathways[1]

This theme is in the process of modelling and evaluating the pathways to be followed to achieve economic growth and food and nutrition security in Malawi, South Africa, Tanzania and Zambia, through agriculture development that is climate-smart and resilient. The models will incorporate the full range of agricultural and land use dynamics in each country, helping to inform policy development and further research agendas, using decision-support tools that combine climate impacts and land use modelling tools. Once the process is complete, the results from the evaluation will be disseminated through workshops that bring together public policy makers, NGOs, funders, agronomists and meteorological services. This will apply five existing agri-ecological models to determine pathways of regional land use, agricultural technology development and changes in diets, developed in the policy design and implementation theme, to help deliver SDGs and limit the rise in global temperatures for each country.

By combining the models, the team will enable an evaluation of trade-offs and opportunities associated with the scenarios developed in the farming systems theme. Through the integrated models, a quantification will be made of greenhouse gas mitigation, crop yields, water use, biodiversity impacts, soil fertility and water and air quality. Using trade and land use data, the team will assess the amount of food likely to be available in the future under these different scenarios and how this would impact on diet and nutrition.

Bringing together all these factors will predict the impact of current activities. Through using current trends (crop management, climate change, land and

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[1] https://africap.info/themes/climate-smart-development-pathways/

water availability, emissions trajectory), the team will forecast agricultural development and its impact (yield and nutrition, requirement for land, water, GHG emissions, ecosystem services). Pathways will also be mapped, working back from the desired development objectives in 2050 to today, to highlight the technical routes by which these outcomes can be achieved.

Model	Description
ECOSSE	A process-based model of soil–plant carbon and nitrogen cycling which is capable of simulating detailed GHG emissions under conventional and mitigation practice.
DayCent	A process-based model able to stimulate changes in productivity (ANPP) of grasslands / rangelands under future climate change – to estimate change in forage availability for livestock in the future.

An overview of the models[2]

ECOSSE is a soil process-based model designed to simulate C and N dynamics and GHG emissions from mineral and organic soils through using minimal input data. ECOSSE uses a pool-based approach, with C and N transferred between pools. The soil pools used are described as biomass (active), humus (stabilised) and inert organic matter, and plant litter is described as decomposable and resistant plant material. The model has been evaluated against a range of soils and vegetation types, and applied spatially to simulate the effect of land-use change on SOC and GHG emissions over different soil types around the world.

A glance at the AFRICAP Models

Theme B of AFRICAP uses a suite of models and data to simulate crop productivity, greenhouse gas emissions, land use and diets. These principle models are:

FEEDME	Uses the Food and Agriculture Organization (FAO) food balance sheets to assess under-nutrition and malnutrition.
Cool Farm Tool	A GHG foot-printing tool which has been used on tens of thousands of farms in over 40 countries around the world.
GLAM	Process-based crop model, calibrated for maize and run with climate model out. Results to include yields, water use, pest infestation and mycotoxin contamination.

Source: AFRICAP, 2018

DailyDayCent is a biogeochemical model that simulates carbon and nitrogen fluxes between the soil, atmosphere and vegetation for forest, grassland and cropland ecosystems. Based on the Century model, it operates on a daily basis, allowing management events such as fertilisation, harvest and cultivation events to be scheduled on the dates they occur. The key sub-routines include the soil organic matter pools (SOM), soil water content, soil temperature, methane oxidation and nitrogen emissions *via* nitrification and denitrification. It also includes a plant growth sub-model with dynamic C allocation among the above- and below-ground biomass pools, where plant growth is dependent on temperature and water or nutrient limitations. The model has been validated against a wide range of experimental sites and cropland, grassland and

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[2] AFRICAP modelling capability statement, Prof Andy Challinor (University of Leeds) and Prof Pete Smith (University of Aberdeen).

forestry ecosystems, and has also been used in national inventories including the United States.

FEEDME (Food Estimation and Export for Diet and Malnutrition Evaluation) integrates the FAO methodological framework for undernourishment calculation with country-level statistics from the FAOSTAT database. The model uses country-level Food Balance Sheets (FBS) for 175 countries to determine mean calories on a per-capita basis, and a coefficient of variation to account for the degree of inequality in access to food across national populations. By adopting the measure of food consumption in terms of energy (kcal) with countries having a minimum energy requirement threshold, the proportion of the population with food consumption below the minimum energy requirement is considered underfed. The FAO food balance sheet data can also be used to estimate macro- and micro-nutrients from food supplies within a country.

The Cool Farm Tool (CFT) is a farmer-oriented greenhouse gas (GHG) calculator. It is a science-based decision support tool for estimating the environmental impacts of food production. The CFT has been widely used globally by industry and farming to assess GHG emissions, and identify positive interventions to mitigate them. The CFT tool is also a key component of the sustainable sourcing initiatives of large multinationals. It is managed by the Cool Farm Alliance, a member organisation whose membership consists of more than 20 major global brands and many of their peers.

GLAM is a regional-scale crop model that was developed to operate on the grid of global and regional climate models. By simulating different varietal properties, the model can be used in developing and accessing genotypic adaptation strategies. GLAM turns gridded weather data into yield, biomass and water outcomes that quantify uncertainty and obtain robust results. The model has been used across the globe. Principal regional foci monitored at Leeds include Africa, India and China.

GLAM can be adapted to most annual crops. It currently simulates spring and winter wheat, sorghum, soybeans, millet, groundnuts, potatoes and maize. It can be run for any region for which there is crop yield data.

Conclusion

It is evident that Theme B has a very important role to play in the development of nationally appropriate, SDG-compliant agri-food development pathways with in-country stakeholders, integrating projections of changing climate and extreme weather with national development, and global mitigation objectives to identify future technology needs. The suite of models and data to simulate crop productivity, greenhouse gas emissions, land use and diets will play a critical role in feeding to the other AFRICAP themes. The models will play a crucial role in the creation of evidence-based policy pathways for sustainable, productive, climate smart agricultural systems.

2. MEET TWO OF THE SIX FANRPAN STEERING COMMITTEE MEMBERS

by Nomantande Yeki

2.1. Introduction

The National Agricultural Marketing Council (NAMC) is the node that hosts the institution of the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) in South Africa. As a Node Hosting Institution, the NAMC coordinates in-country FANRPAN policy dialogues, commissions and supervises national policy research, tracks national policy agenda, and maintains a database of ongoing policy research and policy processes in the country. In each of the FANRPAN node institutions, there is a Steering Committee that plays a critical role as representatives from different stakeholder groups. The Steering Committee provides strategic support, guidance and oversight of projects. This article gives profiles of two of the six FANRPAN steering committee members (in alphabetical order), representing different fields within the agricultural industry. The members of the Steering Committee come from a wide range of industry stakeholders – **Dr Andre Jooste, Mr Happy Mohane**, Dr Aart jan Verschoor, Mr Lunga Njara, Mr Angel Khumalo and Dr Simphiwe Ngqangweni, with Mr Bonani Nyhodo as Node Coordinator.

2.2. <u>Dr André Jooste – Potatoes South Africa (PSA)</u>

Dr André Jooste graduated at the University of Pretoria with an MSc in Agricultural Economics (Cum Laude) and in 2001 he completed his PhD at the University of the Free State. He then worked at the University of Pretoria as a lecturer, after which he joined Standard Bank of South Africa as Information Manager in the Agricultural Department. In 1998 he left the employment of the bank to accept a position as lecturer in the Department of Agricultural Economics at the University of the Free State, where he was later promoted to Associate Professor. In 2007 he joined the National Agricultural Marketing Council as Senior Manager in the Markets and Economic Research Centre. From 2012 until currently he has been the Chief Executive Officer of Potatoes South Africa.

He has extensive experience in conducting market, policy, rural and industry analysis. This includes the implementation of management information systems, identification and use of applicable market research methodologies, compiling industry-wide strategies, conducting surveys and value chain analysis. He also specialises in international trade issues and their implications from a country and firm point of view. As a result, Dr Jooste has contributed to a number of scientific publications in academic and scientific journals, books, technical reports and research and project reports.

2.3. <u>Mr Happy Mohane – Trade Afrika</u>

Mr Mohane is a founder and Managing Director of Trade Afrika Investment, which is a South African based company that invests in various economic sectors. Prior to establishing his own company, he was employed as a Senior Manager for Agribusiness Development at the National Agricultural Marketing Council (NAMC). While at the NAMC, Mr Mohane was instrumental in facilitating the development of

schemes such as the Vineyard Development Scheme and the Red Meat Development Scheme (now operating as the National Red Meat Development Programme), as well as business linkages like the Supply Chain Logistics Programme, which was funded by the Flemish government. Prior to joining the NAMC, he was employed as a Research Specialist at ECI Africa and was responsible for coordinating the operations of two Joint Regional Trade projects in Angola and Namibia. He brings along vast knowledge in enterprise development, economic development, agriculture, economic analysis, economic infrastructure, business linkages, monitoring and evaluation, and development finance. Mr Mohane's educational background includes a Masters in Commerce Economics (University of Natal) and a Masters in Agricultural Science Economics (University of Pretoria). He is a representative on a number of boards, such as Orange River Cellars (ORC); Orange River Tankers (ORT); the South African Grain Information Service (SAGIS); the Grain Farmer Development Association (GFADA); Trustee of Sorghum Trust; and member of the Audit Committee of the Department of Economic Development, Environmental Affairs and Tourism (Free State).

2.4. Conclusion

This article profiles two of the six steering committee members, Dr Jooste and Mr Mohane, who provide assistance in the succession planning of the FANRPAN projects that are undertaken within the South African boarders.

3. DISSEMINATING AGRICULTURAL INFORMATION THROUGH THEATRE FOR POLICY ADVOCACY
By Matsobane (BM) Mpyana

3.1. Introduction

The National Agricultural Marketing Council (NAMC) is the South African node coordinator for the Food, Agriculture Natural Resources Policy Analysis Network (FANRPAN). The Theatre for Policy Advocacy (TPA) could be one of the innovative ways for packaging and disseminating messages to diverse audiences, while creating engagement platforms for policy debate amongst different stakeholders. TPA serves as a creative tool to encourage creativeness and allow communities to actively participate in developing solutions to their problems.

The programme is funded by the University of Leeds and is referred to as the Agricultural and Food-system Resilience: Increasing Capacity and Advising Policy (AFRICAP) https://africap.info/countries/south-africa/.
It conducts its research activities in four African countries, namely South Africa, Malawi, Tanzania and Zambia. The main focus of AFRICAP revolves around generating evidence-based policy to transform agriculture and food systems in Africa. This programme was initiated as an intervention to support and address the United Nations' Sustainable Development Goals (SDGs) relating to climate change and poverty. The TPA was identified as being key for communicating messages to achieve the AFRICAP programme objectives.

3.2. What are the steps in the Theatre for Policy Advocacy?
Community entry and mobilisation – a professional theatre group will be invited to perform a highly rated theatre piece for a rural audience. Typically, these performances are very well attended and it is easy to secure the community's buy-in for developing their own theatrical performance.

Appropriate performers, activists, stakeholders and influencers will also be identified at this event.

Engagement of policy researchers and development experts – selected members from the community will then work with the theatre company and policy researchers to develop a script that captures key issues with regard to climate change, resilience and agriculture. The engagement of policy researchers is vital at this point as they provide the expert knowledge and broader policy framework to help craft the main messages of the performance. At the same time, they gain community knowledge; for example, practical field knowledge that only the villagers and farmers have, and which is not normally revealed to outside researchers.

Building local capacity to communicate and document key messages through theatre – Building on local communities' tradition of communication through dance, song and theatre, the professional group and researchers will equip the community performers with the skills to help the package and tell their own livelihoods stories and mobilise their communities towards a solution. The articulation of issues into a compelling theatre script will be undertaken jointly by the professional group, the trained local talent, and researchers/policy analysts and the development experts. The local talent will then be trained to perform the script to community audiences.

Community dialogue platform – The theatrical performance provides an excellent platform and a conducive environment for researchers and policy analysts to engage in dialogue with different community groups. Following the performance, which serves as an icebreaker and sensitiser, facilitated discussions will be conducted to develop community-based and community-supported solutions to challenges.

Identification of champions for community issues – Through these meetings, the professional teams and the communities will also identify opinion leaders who are passionate about the issue and willing to advocate on specific interventions. Because their roles have been developed with community participation, their advocacy comes to be supported by the community as a whole.

Community Voice – The trained local talent and issue champions then become a permanent community voice that advocates for desired change. They communicate the change messages through a medium that is culturally appropriate and familiar to them. They also learn how to access and incorporate broader policy data to add weight to their arguments and how to communicate their needs in a language that makes sense to relevant decision-makers.

3.3. The case of Malawi

The case of the *Mlimi Wozitsata* project in Malawi: this project was aimed at inspiring farmers growing maize, rice, cassava, sweet potatoes, beans, and pigeon and cowpeas to adopt improved seed varieties and their associated technologies. The project created awareness of, and demand for, improved seed varieties and their associated technologies among smallholder farmers, and information of where to get them through facilitating knowledge and skills sharing. Furthermore, the facilitation of correct and comprehensive agricultural messages among farmers, stakeholders and community leadership addresses overcoming barriers to the use of improved technologies. Moreover, this project advocates for an enabling environment for farmers to access improved technologies.

Through the theatre for development, radio, television and community mobilisation was used to communicate stories relating to agricultural technology adoption. The projects targeted about 200 000 smallholder farmers to be reached with messages on improved seed varieties and their associated technologies. These efforts have reached more than half a million participants through community open day functions such as community cinema, theatre for development and sensitisation meetings. Edutainment exposes farmers and communities to programmes that encompass soil health, market access, financing and small agricultural businesses, assistance to farmer

organisations, and advocacy for national policies that are favourable to smallholder farmers.

3.4.   Conclusion

In conclusion, the Theatre for Policy Advocacy can serve as a tool for communicating agricultural findings and policies, and to provide practical awareness to the farming communities on issues relating to policy, climate change, technology and innovation, production, and existing and potential markets for agricultural produce. Furthermore, this can also serve as a way to attract the youth to actively participate in agriculture. Lessons can be learned from Malawi, which can then be explored in South Africa to edutain and bring the TPA into action. Each community has a good story to tell through TPA.

4.   NAMC UNDERTAKES SCOPING AND BASELINE SURVEY FOR IMPLEMENTATION OF CLIMATE SMART AGRICULTURE PROJECT IN SOUTH AFRICA AWARENESS

By

Elekanyani Nekhavhambe

4.1. Background

In order to close the gap in agricultural productivity through increasing women's access to resources and information, the UN Women South Africa Multi Country Office (SAMCO) is implementing a programme that is aimed at "creating markets through affirmative procurement for women businesses in South Africa". The programme's key objectives are to address structural barriers faced by women-owned businesses in accessing procurement opportunities, and to seek to leverage and systematically include innovation, partnerships and financial solutions to accelerate implementation and scaling-up. This programme will support women entrepreneurs to develop, grow and scale their businesses, in the following ways:

(i)   understanding an optimisation of the supply chain and procurement related activities

(ii)   the mapping of opportunities and appropriateness of opportunities in renewable energy and transportation sector for allocation to women-owned businesses

(iii)   developing knowledge and skills within women-owned small businesses.

4.2. Scoping and Baseline survey

It has been the interest of the UN Women Group to assess the effect of climate change on farming enterprises that are led by women in African Agriculture, and furthermore to ascertain their views on the CSA strategy. The National Agricultural Marketing Council (NAMC), through its capacity as the node host of the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN), was assigned to conduct the baseline survey for the UN Women Project.

Early June 2019, the three parties began with a survey "focussing on women in agriculture" to investigate the possible impact of the change in climate on enterprises led by women in agriculture. The survey was conducted in Limpopo Province (Vhembe, Mpani, Capricorn, Waterberg and Sekhukhune districts) and Free State Province (Fezile DABI, Lejweleputsa, Mangaung, Thabo Mofotsanyana and Xhariep Districts).

The idea of the survey is to focus directly on the affected group throughout the sector value chain, i.e. from those women who carry out primary production activities at the farm level, to those who sell the farm produce, including those who studied agriculture at Universities and Colleges. The most common questions asked in the survey related to the relationship between Climate Smart Agriculture and the market; to assessing the respondents' views on the role of Climate Smart Agriculture and their views on adaptation policies if they affect farming business; and to the role of training on Climate Smart

Agriculture regarding the efficiencies of agricultural sector.

One can argue that one of the ways to obtain knowledge and information is through research and development. Therefore, it is believed that the results of the survey will be informative for agricultural policy development and support programmes relating to women in agriculture.

Above all, it is crucial that the various stakeholders continue to collaborate in order to devise a number of alternative solutions to climate change. Women, working through agriculture, become the source of quality food for their families. Their ability to survive the effects of climate change will have meaningful impact on the status of their household food security status. The results from the survey will be shared with all the stakeholders and will be useful in their planning towards the support of women in agriculture, in particular in the study areas involved, where women mostly practise vegetable and other cash crops farming.

Conclusion

The survey was conducted successfully and the NAMC will produce a comprehensive report that will be shared with the important stakeholders which work directly with the farmers who were the respondents in the survey. The recommendations to be made from the report will be informative to the overall performance of the businesses of the women farmers and, at the same time, endeavour to assist them to adapt to dynamic climate change over time.

For more information, please visit www.namc.co.za or contact
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