Series 1 – Economic Pillar: Agriculture and Livestock

Improved Sorghum Variety: A Forgotten Gold in the Kenya Drylands

Dr Evans L. Chimoita

Key Messages

Improved sorghum adoption, production, commercial-ization and utilization offer a golden opportunity for food security among drylands inhabitants.

Sorghum avails nutritional products through value addition and processing.

Contract farming can stimulate farmers' uptake and increase land acreage under-investment and production of improved sorghum.

Devolved units and national the government should invest in the sorghum value chain by strengthening the extension systems and inputs support services.

Source: Author

Context

Statement of the Problem

Agricultural extension and technology transfer services play a vital role in disseminating research knowledge, skills and income-generating strategies among the farming communities in Kenya. However, there exists a disconnect between the amount of information and technologies developed in research centres and what is implemented by farmers. Further, improved technologies are not reaching farmers for utilization as a result of weak linkages between the government's extension providers, that are charged with the responsibility of ensuring that the technologies transfer, and the farmers for utilization.

Moreover, the effectiveness of the Government of Kenya extension sector service provision has greatly declined during the last decade due to structural adjustment programmes (SAPs) and liberalization policies. The sector further faces constraints such as reduced and aged extension staff, low funding for operations and maintenance services, leading to weak information dissemination networks.

Interventions

Documented evidence shows that there exist improved technologies in the research institutions on the minor crops in Kenya and worldwide, (ICRISAT 2006). For instance, the Kenya Agricultural Livestock and Livestock Research Organization (KALRO), in collaboration with International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), have developed and released numerous improved sorghum varieties suitable for arid and semi-arid regions of Kenya. Further exists a contract farming as the latest intervention for stimulating farmers' uptake and confidence in investing and production of improved sorghum.

Improved sorghum varieties present great potential for food and nutrition security as well as improved livelihood among 750 rural households in the semi-arid regions of Kenya (Sekoli and Morojele, 2016). According to Chimoita et al. (2017), the market outlets for improved sorghum products include contract market by East Africa Brewery Limited agents (48%), local markets (42%), farmers' organizations (5%), and others (4%) including the National Cereals and Produce Board.

The improved sorghum production avails enormous income generation avenues and nutritional products through value addition and processing of products such as porridge, cookies, sorghum-millet ugali and beer, and other products including

Published by Office of DVC Research, Innovation and Enterprise, https://uonresearch.org/journal/kpb
University of Nairobi, http://www.uonbi.ac.ke

animal feeds, manure and bio-fuel (Kenya Vision 2030, 2007; MoA, 2010).

Issues

Despite numerous benefits accruing from improved sorghum products and enormous research efforts done in the past, the adoption, production, commercialization and utilization of sorghum products as staple food remains low in Kenya. The low uptake of improved sorghum varieties is attributed to limited extension services provision especially on availability and reliability of quality seeds, market outlets, and limited policy documentation (Chimoita et al. 2017).

If such challenges are not addressed, then it will not be possible to achieve the government's food and nutrition security agenda that is among the big four agenda for communities living in arid and semi-arid areas.

Approach and Results

The study, conducted in arid Mbeere North Sub-County, Embu County, employed a descriptive survey design suitable for describing information, data, events, perceptions and issues. Further, the study purposively selected 51 out of 101 agents from national and county government Ministry of Agriculture engaged in the improved sorghum value chain. Data on the extension agent's gender, work station, education level, experience, telephone technologies, demonstrations, ASK shows, market outlets and radio techniques were collected from lead farmers, private and extension agents located in Njura, Kangai, Njarange and Kiambungu villages within Mbeere North Sub-County, Embu county.

The study results revealed that 65% of improved sorghum farmers were literate while the extension agents working with sorghum farmers had acquired over twelve years of work experience disseminating various agricultural technologies. The agents disseminated technologies by embracing farm visits, demonstrations, and agricultural shows visits and through radio technologies. Further, the extension agents work experience greatly influenced the uptake of improved sorghum technologies by farmers. It was concluded that agricultural shows complemented agents' efforts in linking farmers to contract market agents such as East Africa Brewery Limited (EABL).

EABL contract arrangement was recommended as a suitable intervention for stimulating uptake and increasing farmers' confidence in investing and production of improved sorghum. For instance, farmers contracted by EABL have demonstrated exponential trendy yields achievement from 15 tonnes in 2014 to 60 tonnes in 2018 (EAML, 2018) with a kilogram price of sorghum going for KES 23 in 2014 and KES 37 KES in 2018.

Policy Recommendations

Short-Term

- Immediate need for farmers' sensitization on contract farming, through training on the modern contract farming arrangements
- Enhanced uptake and implementation of improved sorghum technologies by farmers can be achieved through farm demonstrations, mobile phone text technologies and empowered extension agents.
- Rapid support from devolved county and national governments through capacity building sessions to farmers and extension agents.

Medium-Term

- Devolved units have the opportunity to enhance the rapid promotion of improved sorghum production by encouraging farmers in allocating enough land, sensitizing farmers on the importance of modern contract farming that stimulates rapid uptake and production of improved sorghum technologies among farmers because of guaranteed market outlet
- County governments should invest more in strengthening their extension systems.

Acknowledgements

This policy brief is an extract from my (PhD). I must appreciate mentorship, financial support and training by the AgriFoSe 2030 program and the International Livestock Research Institute (ILRI) on policy briefs preparation. Thank you, Dr Paul Guthiga, Prof. Cecilia Onyango, for your valuable technical input and editorial support.

References

ICRISAT (2006). *International Crops Research Institute for the Semi-Arid Tropics, Eastern and Southern Africa Region, 2006-2005 Highlights,* Nairobi, Kenya, ICRISAT,

Chimoita E.L, Onyango C.M & Kimenju J.W. (2017). Factors influencing uptake of improved sorghum technologies. *Journal of Agricultural Research*, 2, 3-56

Ministry of Agriculture (2010). *The Annual Repor*t, Crop Development Division, Mbeere Division, Embu County, Kenya.

Muui C. W, Muasya R. M & Kirubi D. T. (2013). *Baseline Survey on Factors Affecting Sorghum Production and Use in Eastern Kenya,* African Scholarly Science Communication Trust, Nairobi Kenya

Kenya Vision 2030 (2007). The Kenyan goals for the Economic, Social and Political Pillars growth, Kenya's new long-term national planning strategy, Government Press, Nairobi.

Author

Dr Evans L. Chimoita
(echimoita@uonbi.ac.ke)
Department of Agricultural Economics,
College of Agriculture and Veterinary Sciences,
University of Nairobi, P.O. Box 29053-0605,
Nairobi, Kenya