

Sorghum and Millet Technology Innovation System for Eastern Africa



Authors: Jane Omari, J. Ecuru, P. Chuwa, T. Haileselassie, A. Abebe, I. Virgin, M. Karembu, F. Nguthi, L. Opati, J. Komen, M. Gasingirwa, N. Nyange, K. Urama, E. Acheampong

Lead author's contact details: Jane Omari, Senior Science Secretary, Kenya National Council for Science and Technology, P.O. Box 30623-00100, Nairobi, Kenya. Email: omarijab@yahoo.com; Mobile:+254720574668; Website: http://www.ncst.go.ke



Abstract

Sorghum and finger millet are nutritious cereals that form an important part of diets of people in the Eastern African region. The crops are able to adapt to adverse agro-ecological conditions with minimal inputs thus saving millions of people from starvation when other crops fail due to extreme drought or other biotic stresses. The application of modern technologies and innovations in research and development of products is a key requirement for increased productivity, product development and increased food security available through these crops in the region. A study was carried out in Burundi, Ethiopia, Kenya, Rwanda, Tanzania and Uganda with the main objectives to establish the knowledge base and what influence the direction of search for sorghum and millet value added products using the technology innovation system approach. Data was obtained through Focus Group Discussions, Key Informant Interviews and document analysis. The results showed that the scientists have a good knowledge base and possibility of entrepreneurship. However, but finances, capacities & infrastructure are not adequate. The policies and strategies are driven by the need to develop bio resource economy and to improve food and nutritional security. The study identified a need to strengthen regional strategies & networks, increase awareness and invest in capacities for increased productivity and adoption of quality products of sorghum and millet.

Introduction

Sorghum & Millet offer potential to address for food security and improve livelihoods in marginal areas in Eastern Africa. They form part of the diets and traditions in all countries in the region but biotic and abiotic constraints (e.g. high temperatures, erratic rainfall) and poor inputs limit productivity. Value addition to products opens up new business opportunities and gives consumers more choices.

Picture 1: Sorghum



Picture 2: Millet



Methodology

The study used the Technological Innovation Systems (TIS) approach of Bergek et al. (2008) and adapted it to the Eastern African context. Primary and secondary data was obtained on actors, networks and institutions (Carlsson and Stankiewicz, 1991) that contribute to the development, diffusion of knowledge, entrepreneurship activities, policies, resources and legitimization in value addition to sorghum and millet. The study was carried out at both private & public institutions that are involved in the research, development & training in Burundi, Ethiopia, Kenya, Rwanda, Tanzania and Uganda.

Results

- There are both private & public actors in value addition of these products
- Adequate and solid knowledge base is available in R&D spread over several institutions
- Human resources are mainly limited to public institutions but infrastructure for research and value addition is limiting
- Investments in development of this technology is low and poorly targeted
- Awareness on available products and potential value is limited and Standards for value added products lacking.
- Strategic and supportive policies are key in effective value addition to sorghum and millet

VALUE ADDITION



Conclusions and Recommendations

- There is great potential for uses of sorghum and millet in industrial production of malted & extruded products, composite flours and animal feeds
- Sorghum and millet offer alternatives to maize in the marginal areas with limited input and their adoption should be encouraged to increase food security, open up business opportunity & improve livelihoods
- Awareness on value of standardized sorghum & millet product could increase adoption
- Facilitative policies & strategies (incentives, linkages, microcredit, seed) are required
- Development of incubation facilities and centers

Project Partners:

