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Indigenous Knowledge Systems in South Africa's Food Security

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ABSTRACT The paper highlights the challenges and prospects of IKS in food security in South Africa. A major challenge identified was the impact of western food culture on the healthy food practices of African indigenous communities especially the conceptualization that eating indigenous food species is associated with poverty. This is contrary to African food security which embraces the perception of eating healthy food. Local farmers, especially women rely on their IKS for food security because of affordability, accessibility and positive experience. Men's land ownership marginalized the role of women as the main indigenous food security producers. The recommendations made are: capacity building for indigenous women food farmers; policy makers to address constraints experienced by farmers of indigenous produce; public, private community partnership working together to support the interface of indigenous and modern farming systems for food security; further research on the gender dimensions of land access and indigenous plant species for food security.

INTRODUCTION

Sraku-Lartey (2014) highlighted the role of traditional agriculture as a form of indigenous knowledge in contributing towards food security in Africa. Indigenous knowledge (IK) is unique to specific societies, culture and location; or shared by different communities throughout Africa. The application of Indigenous Knowledge Systems (IKS) has the potential to enhance rural agriculture production, associated with crop selection, storage, processing, marketing and food preparation (Nwonwu 2008). The paper identifies labor-intensive but cost effective application of indigenous knowledge which could serve as a viable option for resource-poor farmers in pursuit of increasing both production output and income.

The indigenous plant species in traditional gardens comprises of diverse food crops with different nutritional and health benefits (Food and Agriculture Organisation (FAO) 2002, 2008). These include crops that are drought resistant, insect repellants and have nitrogen-fixing properties that enrich the soil contributing to high yields and nutritional value. The nitrogen-fixing properties of legumes negate the need for artificial fertilizers. The local farmers had a wide knowledge of indigenous plants properties. Emeagwali and Dei (2014) indicated that colonialism undermined the efficacy of these indigenous plants and associated knowledge systems. For instance, SAHO (2016) showed that the decline of appreciation of IKS in South Africa could be traced back to the historic settlement in April 1652, when the Dutch Jan van Riebeeck landed at the Cape, where he established a company garden to supply ships of the Dutch East India Company enroute the East for trade. Despairing for what he considered a lack of food, Riebeeck proceeded to import western-type plant foods encompassing such crops as wheat, barley, peas, cauliflower, radish, carrot, turnip, spinach, pumpkins, cucumber and endives.

The historical impact of colonialism on IK and food security in African communities has not been adequately documented (Sraku-Lartey 2014). This paper interrogates the role of Indigenous Plant Species (IPS) in food security in South Africa especially the challenges faced by rural women.

METHODOLOGY

The paper used secondary sources to evaluate the historical role of indigenous knowledge systems in South Africa's food security. These sources were available, accessible and affordable for the study. They included past research, websites, articles and books (Olasupo et al. 2012; Haralambos et al. 2013). The researcher was cognisant of the fact that the information contained in the secondary sources might be outdated and not get the full picture provided by primary research.

OBSDERVATIONS AND DISCUSSION

Challenges of IKS in Food Security

Examination of secondary sources showed that African local communities in South Africa depended on IKS for food security and livelihood. However the coming of colonialism, industrialization and urbanization contributed to the loss of Africa's IK and indigenous floral biodiversity (Natarajan 2002). The current efforts to document indigenous food plant species are characterized by the challenge of misidentification due to nomenclatural confusion and unresolved taxonomy of the genus (Takawira-Nyenya et al. 2014).

The introduction of western food culture has impacted the healthy food practices of indigenous communities. Joubert (2012) illustrated the tendency for poor African communities to depend on cheap, high-energy but low-nutrient foods. This has contributed to the increasing malnutrition and obesity. Westernisation has also brought about the conceptualization among local African communities that eating green leafy vegetables is associated with poverty. Hence, such vegetables are removed from daily diets. This is also contrary to African food security which also embraces the perception of eating healthy food (Fraser et al. 2015). This contention is supported by research which shows that green leafy vegetables are nutrient-rich foods containing large amounts of beta-carotene and a range of micronutrients and trace elements (Rubin 2005).

The study found that the dominance of land ownership by men has marginalized the role of women as the main food producers in indigenous farming practices for food security (Doss et al. 2014; Nayak and Jeffery 2015). Amusan and Makgosi (2015) showed that forty-six percent of South Africa's women are unemployed and bear most of the burden of poverty and HIV/AIDS.

Other factors which undermine IK in food security include agricultural policies which promote expensive external inputs compared to community-based inputs. Majority of farmers still rely on their IKS because of positive experience, affordability and accessibility of indigenous agricultural practices and inputs (Ndwandwe and Mudhara 2014). Examples of these IKS practices include; application of organic compost and weed management for improved soil fertility, tilling of land using hand-hoes or animal traction, use of intercropping, crop rotation, shifting location, scarecrows, smoke for pest control and selection of premium seed quality.

Prospects of IKS in Food Security

IKS success stories in food security also need to be highlighted to inspire other farmers. The example below illustrates how farmers who were facing challenges of selling their fresh prickly pears and marula fruit produce decided to process them into jelly and fruit juice in order to have added market access and improve their income. These were a group of farmer entrepreneurs, mostly women, in Molemole Local Municipality in Limpopo Province, South Africa. They were trained in processing the fruit products and securing tenders by the local agriculture department (Masipa and Jideani 2014). Such success illustrates how commercialization of indigenous fruit plant species could improve community food security and livelihood. It also demonstrates that indigenous fruit such as amarula offers alternatives such as fresh fruit or fermented beer in Limpopo. Likewise, rural farmers could also benefit financially and otherwise by extracting oil from oil nuts by learning cold press oil extraction for cosmetic and pharmaceutical companies in outside markets. End products could include facial scrub or oil from amarula or deep tanning gel, a product of baobab seeds (Masipa and Jadeani 2014).

CONCLUSION

The study highlighted the challenges and prospects of IKS in food security in South Africa. It showed how colonialism, industrialization and urbanization contributed to the loss of Africa's IK and indigenous floral biodiversity. The current efforts to document indigenous food plant species are characterized by the challenge of misidentification due to nomenclatural confusion and unresolved taxonomy of the genus. The study demonstrated the way the introduction of western food culture has impacted the healthy food practices of indigenous communities. Westernization has also brought about the conceptualization among local African communities that eating green leafy vegetables is associated with poverty. This is contrary to African

food security which embraces the perception of eating healthy food. It also shows that the dominance of land ownership by men has marginalized the role of women as the main food producers in indigenous farming practices for food security. Forty-six percent of South Africa's women are unemployed and bear most of the burden of poverty and HIV/AIDS. Other factors which undermine IK in food security include agricultural policies which promote expensive external inputs compared to community-based inputs. However, farmers still rely on their IKS because of positive experience, affordability and accessibility of indigenous agricultural practices and inputs. An example of an IKS success stories in food security was provided to inspire farmers. It illustrated the way emerging farmer entrepreneurs who were facing challenges of selling their fresh prickly pears and marula fruit produce were trained to process them into jelly and fruit juice in order to have added market access and improve their income. The commercialization of indigenous fruit plant species could therefore improve community food security and livelihood and offer alternatives such as fermented beer. Communities could also benefit financially by extracting oil from oil nuts by learning cold press oil extraction for cosmetic and pharmaceutical companies.

RECOMMENDATIONS

The study advances the following recommendations: (i) capacity building for women farmers involved in production of indigenous food species for food security and income generation; (ii) there is need for local communities, governmental and non-governmental bodies to address constraints experienced by farmers of indigenous produce for food security including water shortage, farming inputs, business training and market access; and, (iii) There should be public, private community partnership to support the interface of indigenous and modern farming systems for food security. The study also encourages further research on the gender dimensions of land access and indigenous plant species for food security.

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