

The role of ICTs and indigenous knowledge in enhancing household food security in Tanzania

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Abstract

This paper focuses on how indigenous knowledge is used in food processing, preserving and storage to enhance food security in semi arid Tanzania. The article revealed that women use more indigenous knowledge in activities related to food processing, preserving and storage in Tanzania as compared to men.

The paper found types of foods such as milk, maize, millet, sorghum, melon, pumpkins beans and their leave are being processed, preserved and stored using indigenous knowledge means. The study revealed that indigenous knowledge used to secure food among others includes smokes and ashes. The paper further identified the ways such as stories, songs, folklore, proverbs, dances, myths, rituals in which indigenous knowledge is acquired, created, stored, disseminated, retrieved and used among women in processing, preserving and storing of household food for its security.

The paper found that the use of ICT facilities such as computers, mobile phones, and scanners can foster and enhance indigenous knowledge acquisition, creation, storage, retrieving, disseminating and use of indigenous knowledge for food processing, preserving and storing in developing countries.

Keywords: Indigenous knowledge in Tanzania, indigenous knowledge use, women, food security.

Introduction

Indigenous knowledge is part and parcel of the majority people in developing countries. 80% of the world's population depends on indigenous knowledge to meet their medicinal needs, and 50% rely on indigenous knowledge for their food supplies (ICTs for indigenous knowledge preservation, 2012). The advancement and adoption of Information and Communication Technologies (ICTs) such as computers in day to day activities from family to national level has brought new ways of capturing, preserving and sharing indigenous knowledge (IK) in the Africa. The ICT facilitates are cost effective for capturing, sharing

and preserving and sustaining indigenous knowledge related to house hold food security(Averweg, 2010).

Indigenous knowledge is a large body of knowledge and skills that has been developed outside the formal educational system. It is embedded in culture and it is unique to a particular location and its culture(Lodhi & Mikulecky, 2010).

Indigenous knowledge is proved to be more productive and it is mainly used as the basis for local-level decision-making in agriculture, health care, education, natural-resource management and other activities (World Bank, 1998).

The use of indigenous knowledge is the critical way is of ensuring the availability of food supply and achieving household food security for sustainable development in the local community. Indigenous knowledge remains as a powerful means of solving food shortage and sustaining household food security in most societies in Africa today. In many parts of Africa specifically in rural areas, women play a great role for food processing and storage by using indigenous knowledge to secure food supplies for their household in the future. They involve in processing of vegetables, fruits, and milk in times of abundance to ensure its availability throughout the year in times of scarcity by using indigenous techniques such as drying or fermentation. (Ibnouf & Studies, 2012)

Use of indigenous knowledge to enhance food security in semi arid Tanzania

Most societies in semi- arid Tanzania including Dodoma and Singida regions are involve themselves in subsistence agriculture by practicing intercropping in the sense that different types of crops such as maize, millet, sorghum, yams, beans, and vegetables are grown in the same piece of land. In the growing season especially the rain season, these types of food and vegetables are abundantly available. But during the dry season these types of food become scarce. To ensure its availability during the dry season, they are processed, preserved and stored by using the indigenous knowledge. For example, in preserving vegetables like pumpkin leaves, and bean leaves, the raw harvested leaves from pumpkins and beans are boiled, after being boiled they are sun dried and then stored in special containers in order to maintain their flavor. These vegetables can be kept for a year without being spoiled out. The seeds of Pumpkin, watermelon, and cucumber are also sun dried and preserved. Pumpkin seeds are dried and stored to be used for adding to cooked vegetables in the absence of groundnuts. They are roasted and grounded out to form a powder before added to vegetables in order to improve vegetables flavor as well as adding nutrition to it.

Yams preservation involves sun dried for a week after being harvested in order to reduce the water contents. After being dried they are boiled. After boiling they are peeled and cut into pieces, these pieces are sun dried for a number of days until they become completely dry. The dried pieces of yams are also stored in special pots in order to maintain their flavour.

When needed for use, the dried pieces of yams are re-boiled and eaten (Kamwendo & Kamwendo, 2014).

Sun drying is the major indigenous practice for food processing like maize, millet, sorghum, beans and groundnuts; they are sun-dried before stored in special locally made sacks, pots and baskets. The harvested crops such as maize and beans which are expected to be used as seeds for the coming growing seasons are stored above the fireplace, while the harvested fresh yams and cassava which are expected to be eaten as fresh, they are kept in moistened soil for five to seven days To maintain they fresh (Agea, Lugangwa, & Obua, 2001).

Along with food crops, animal products are also processed, preserved and stored for future use, in processing the meat, meat is cut into small pieces, added salt and curry then left to dry on the sun for seven to ten days until they become competently dry. In milk processing, milk is shacked gently in order to separate cream and butter. The butter obtained is added with salt cooked and stored for future use (Yousry & El-shafie, 2013).

The role of ICT to enhance indigenous knowledge acquisition, and storage

The most common ways used for sharing indigenous knowledge among different societies in developing countries among others include as stories, songs, folklore, proverbs, dances, myths, and rituals (World Bank, 1998). In the advancement of Information and Communication Technologies (ICTs), there is now new ways and even rapid methods for capturing, sharing and preservation of indigenous knowledge. The use of ICTs facilitates easy digitization of indigenous knowledge and thus makes easy access, retrieval and sharing to a broad geographical area using digital technologies like mobile phones, computers and internet (Averweg, 2010)

ICT facilities such as computers, mobile phones, scanners can foster and enhance cost effective indigenous knowledge capturing, creation, storage, access retrieving, disseminating and use of indigenous knowledge for food processing, preserving and storing in local societies since they allow quick sharing of knowledge at high speeds and thus facilitate instant sharing and storage of indigenous knowledge for future generation (Lodhi & Mikulecky, 2010).

The study conducted by Lwoga in managing indigenous knowledge in agriculture revealed that, the ICT facilities such as cell phones are now becoming an important medium for accessing and sharing agricultural Indigenous Knowledge due to high ownership of cell phones among farmers. *“For instance, Cell phones were used by pastoralists in Kilosa (Twatwatwa Village) to communicate with the livestock herders to know the conditions of their animals in the grazing field and advise them in case of any disease outbreak, and to inquire about a good location for good pasture and safe drinking water for their animals. Farmers in Moshi Rural also used cell 16 phones to communicate with FLORESTA NGO to*

access IK on new varieties and techniques such as local herbs for treating animal and plant diseases.”(Lwoga, Ngulube, & Stilwell, 2010). The Lwoga`s study findings also revealed that, there is usage of ICT facilities like personal computers, mobile phones, audiocassettes, and email in preservation of indigenous knowledge related to household food security among farmers, but use of ICT facilities in preserving indigenous knowledge depend on the education level and computer literacy for an individual. for example, those who completed secondary education to Bachelor degrees can use computers, cell phones, audio cassettes, CD- ROMs, audiovisual and emails to preserve the indigenous knowledge for future use (Lwoga et al., 2010).

The rapidly increasing use social media and mobile technologies in Tanzania is now facilitating easy capturing, disseminating and preserving the potentials of indigenous knowledge among societies even in rural areas. The use of mobile phones is becoming powerful instrument for capturing, indigenous knowledge from where it was generated in the form of audios, text, images, and videos from potentials people especial elder in the society by using mobile phones and digital cameras. The captured knowledge by mobile phones can easily and instantly accessed and shared among individuals by using of social media tools like face book, Twitter and You Tubes(Owiny, Mehta, & Maretzki, 2014).

Preservation of indigenous knowledge to enhance house hold food security

Indigenous knowledge is local knowledge that is unique to every culture or society. It is mostly stored in people`s minds and passed on through generations by word of mouth rather than in written form, it is vulnerable to rapid change. It is embedded in community practices, institutions, relationships and rituals. In the advancement and adoption of ICTs in our day to day activates help to document and disseminate indigenous knowledge among individuals in the society. Hence the need to preserve IK to enhance food security is inevitable since it is regarded as basis for solving critical problem in local communities, it influences planning as well as decision-making in local areas. It is considered as relevant knowledge to the most individuals in economic development, culture preservation and political transformation; it applied in preserving house hold food and thus leads to poverty eradication among communities in different parts of Africa. Sharing of indigenous knowledge within and across communities help to enhance a cross-cultural understanding and promote the cultural dimension of development.(Msuya, 2007)(“ICTs for indigenous knowledge preservation,” 2012).

Conclusion

The use of indigenous knowledge in enhancing house hold food security is extremely important. Many households in the semi- arid Tanzania depends on indigenous knowledge to preserve and secure their food to be available for use during the time when they become

scarce. But this knowledge is susceptible to disappear since, it un documented and still resides in the minds few people in the society specifically elders. In order to ensure sustainability of this knowledge to continue solving critical problem in local communities including poverty, capturing, documenting and disseminating indigenous knowledge to local communities in semi arid Tanzania and beyond is inevitable.

The use of ICT facilities such as computers, mobile phones, and audio visual materials like CD- ROMs, can foster and enhance capturing, documenting preserving and dissemination indigenous knowledge among household for securing food and thus eradicate poverty.

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