

Indigenous Knowledge-Systems and Food Security: Some Examples from Malawi

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ABSTRACT The paper explores the extent to which indigenous knowledge-systems can contribute to the achievement of food security. With examples drawn from Malawi, the paper illustrates the way in which indigenous knowledge-systems can assist in food preservation and food storage, leading to food security. The paper examines the way traditional ways of food preservation impact on food security and access at household level. In addition, we also highlight the role of women in food preservation and food storage using indigenous knowledge systems. We argue that the abandonment of the indigenous knowledge-systems is one of the causes of food insecurity as we witness it nowadays.

INTRODUCTION

The paper is framed within the context of Indigenous Knowledge-Systems (IKS) and their possible contribution to food security through indigenous food storage and food preservation techniques. Drawing on personal experiences from Malawi and examination of secondary sources the objective of this paper is to interrogate indigenous post-harvest strategies used by local communities in Malawi for food preservation and storage. This demonstrates that indigenous knowledge systems are unique to specific communities. These systems are valuable in addressing issues such as the environment, health, food security, and many more (see Smit and Masoga 2012). When food security issues were first highlighted, the question was whether a nation or region could command sufficient food to meet the aggregate requirements of its people. Special attention was paid to fluctuations in aggregate food supply and food security interventions which would provide effective buffer mechanisms against such fluctuations. It was, however, realized that this gave a very limited view of food security problem. A larger segment of a population could be living in hunger, even though the country could have sufficient food on aggregate. This, therefore, reflects that adequacy of food at national level does not necessarily mean adequacy of food security at household or individual level (von Braun et al. 1992). This paper, therefore, treats food security as migrating from household to nation, not vice versa. We argue that indigenous food preservation and food storage ways play a critical role in contributing to food security.

While indigenous knowledge has been recognized as one avenue through which food may be preserved and/or stored, such knowledge is treated as inferior to modern food preservation and storage measures or technologies, or the development of chemicals. Malawi experiences social stigma associated with certain traditional ways of food storage and preservation. Some people regard traditional practices as primitive. This has led to the decline and/or abandonment of the indigenous ways of food storage and preservation, which used to help a great deal in sustaining food security in most households. New and modern storage facilities (such as refrigerators) have reduced the drive for using local/traditional methods. However, questions that come into authors' minds are: How many people own fridges? How many homes have electricity for running fridges? Since the majority of these people cannot afford modern food preservation and food storage facilities, large quantities of food-stuffs such as vegetables and cereals are wasted every year. This situation forces people simply to sell their produce for fear of it being wasted, or rotting, or being attacked by pests. We argue in this paper that these now-abandoned indigenous ways of preserving and storing food ensured that people had at least sufficient, if not surplus until the next harvesting period.

Conceptual Framework

Since the late eighties, the focus on food security has shifted from national and global to household and individual levels. Thus, this paper is conceptualized within Sen's (1981) frame-

work of sufficiency, access/entitlement and security. Within this framework, Sen (1981) explains food security as sufficiency of food in terms of nutrients and calories needed for an active and healthy life. Beyond the core concept of food security is the concept of enough food which is presented by some authors as minimal food consumption. Sen (1981) argues that food availability remains a key issue in food security. The food-security notion is identified as secure access to sufficient food. The idea of food storage and preservation translates into access, entitlement and security. By storing and preserving food, households ensure that they secure food without jeopardizing future food consumption. Although public policies may concentrate on poverty and hunger alleviation, households must take responsibility for ensuring that they own food. The framework therefore provides a systematic approach to private ownership of food by households. Sen (1981) argues that excess food resources may be converted into assets in terms of stored and preserved food.

Malawi: A Brief Political and Socio-economic Background

Malawi is a landlocked country located in southern Africa. The country shares borders with three countries, namely, Zambia, Tanzania, and Mozambique. Previously known as Nyasaland during British colonial rule, the country became independent as Malawi in 1964. From independence to 1994, Malawi experienced a dictatorial one-party and one-president rule under Dr Hastings Kamuzu Banda and his Malawi Congress Party. The 1990s witnessed a strong wave of democratization campaign which swept across Africa. These winds of democratic change demolished one-party dictatorships; and Malawi was not spared. It is in this context that a national referendum was conducted in 1993, which overwhelmingly swung in favour of the adoption of a multi-party system of government. As a consequence, Malawi held multi-party general elections in 1994. Dr Banda and his Malawi Congress Party lost in the elections. On May 17 1994, Bakili Muluzi was elected president of this multi-party state. Within the parameters of the constitution of Malawi, Bakili ruled for two consecutive presidential terms and the late Bingu wa Mutharika took over in 2004 (see Kaspin 1995, Posner 1995). Mutharika died before the end of

his term of office, thus allowing the incumbent vice president, Mrs Joyce Banda, to take over. It was during Bingu wa Mutharika's term that Malawi faced a confrontation with the donor community; the president having been accused of being undemocratic. Malawi experienced an extensive donor freeze because of poor governance.

Food Situation in Malawi

Access to adequate food is a basic human right. It is catalytic to the realization of all other rights, such as the right to education and good health, to mention only two. Therefore, attaining national and household food security is of fundamental importance. However, achieving food security and making it sustainable, remains a global challenge. Most countries in the sub-Saharan region are grappling with this problem. Although Malawi is well known as an agricultural-based economy, sustaining food security has become challenging, owing to the poor economic status of the country. The current situation is that of low productivity, persistent hunger and malnutrition. This leads to much human suffering and substantial low productivity (Binauli 2010; Mussa and Pauw 2011).

Although Malawi faces challenges of poverty and dry spells which affect crop production, the report from a food-security outlook gives one cause to believe that the situation is not hopeless. The Ministry of Agriculture and Food Security (MoAFS 2013) report projects an increase and surplus in crop production of above 740,000 metric tonnes in maize, rice, millet, sorghum, potatoes, and cassava. Although this is food security at a national level, it is through local farmers that this outlook is derived. The paper attempts to discuss these traditional practices, examining the way in which they have impacted greatly on household food security, entitlement, and access. The indigenous practices to be discussed are *Msanja*, *Nkhuti*, and *Mfutso*.

OBSERVATIONS AND DISCUSSION

Msanja as a Storage Place

Malawi, like other countries in Africa, has its own indigenous ways and practices of storing food for future use. These were traditional mea-

asures of ensuring that the household did not suffer from food shortage during any part of the year. From the authors' own lived experiences, the idea of *msanja* was very common in most Lomwe households. This was a raised, table-like structure, locally constructed of poles and sorghum stocks. The structure is fixed at the centre of the kitchen, right above the kitchen's fire place. However, the use of this technology is no longer common. This was where millet, sorghum, unshelled nuts, and all varieties of peas were kept. Some even used the *msanja* to store maize cobs which were earmarked for seed for the next growing season. This reveals that people of Malawi, more specifically the Lomwe, had a considerable list of indigenous grain/legumes crops on which they depend for their staple food. The reason for storing harvested crops in this structure was to protect them from weevils and other pests. Because fire and smoke were a permanent feature in the kitchen, pests and rodents were kept away from the harvested food. The soot coating made grains bitter and not edible by both pests and rodents. This was not only priceless, cost-free technology but an effective way of ensuring food security. As time went by, the grains and unshelled legumes were all coated with soot. Small creatures such as rodents refused to eat the grains because they tasted bitter. Within this area, the grains/legumes were well protected. Apart from the *msanja* being used as a safer place for grain storage, it was a cheaper way in terms of labour. Because the *msanja* was constructed using local materials, anyone who might want to construct this item could do so. This is contrary to modern agriculture where pesticides are far less accessible owing to financial challenges. As a result, agricultural produce is sometimes destroyed by pests.

This indigenous storage device may also be considered relatively safe from health hazards. Although much of the grain kept on the *msanja* becomes coated with smoke and soot, this is less dangerous than modern ways of using pesticides and chemicals which have now been introduced. This concurs with the study conducted by Matsa and Manuku (2013). The results reveal that the people of Matabeleland, in the southern province of Zimbabwe, prefer traditional ways of storage to modern ways. People in Matabeleland hold the view that using chemicals and pesticides is dangerous to the children, other users, and to all those who consume the

treated produce. If not properly handled, these modern ways of food-storage and pest-control can lead to fatalities.

Food Preservation

As indicated earlier, the Lomwe engage in subsistence agriculture, characterized by intercropping. In this regard, many plants and vegetables are grown on one piece of land. Apart from maize, millet, sorghum, and legumes, vegetables are also part of this process. During the growing season, many areas of the country experience an abundance of vegetables. Armed with their skills, Lomwe women are involved in food preservation activities. These included preserving pumpkin leaves (*nkhwani*), bean leaves (*khwanyanya*), pea leaves (*chitambe*), and some wild vegetables, such as black jackal leaves (*chisososo*). Vegetables were prepared and parboiled. After boiling, the vegetables were sun-dried for some days, depending on the intensity of the insolation. They were stored in large pots called *mtsuko*, in order to maintain their flavour. These pots were not used for other storage; only for these preserved vegetables. These vegetables would be kept for over a year. This was an indigenous knowledge from local people as a disaster-preparedness measure, and in maintaining food access at all times.

Not only were vegetables preserved, but pumpkin, watermelon, and cucumber seeds were also preserved. Pumpkin seeds were dried to be used for adding to cooked vegetables in the absence of groundnuts. When needed, dried seeds were roasted and ground to form a powder which could be added to vegetables. Hence, as argued by Maxwell (1990), food security is not only conceptualized in terms of sufficiency or access, but also in terms of the amount of nutrients and calories needed for an active individual. This pumpkin-seed powder was used as a way of adding nutritional value, as well as of enhancing the flavour of food.

Cassava was another crop which was widely preserved within the Lomwe tradition. As with other ethnic groups, the Lomwe were also skilled in local brewed beers. This cassava, therefore, served multiple functions. Firstly, it was used as one of the ingredients in local beer-brewing. Secondly, cassava was also used as staple food. The cassava was also harvested at its proper maturity time. To avoid wastage, it was peeled in

a special way, and dried on top of the kitchen counter, as were other crops such as the legumes and grain. Because the starch and water content is high in cassava, it was left for several months to dry out completely. This type of dried cassava is called *makaka*. *Makaka* is usually cooked together with peas; an indigenous way of ensuring that households have access to sufficient and nutritious meals at all times. This dish is popular within the Lomwe society.

The Lomwe people were also skilled at preserving fresh sweet potatoes for future use. As with cassava, potatoes are well known for losing their taste and starch if kept for a long period in the garden after maturity. Because of this risk, the indigenous Lomwe people used to harvest the potatoes and store them in a place called *nkhuti*. This was a hole/trench which was dug behind the kitchen. The trench was situated close to the walls of the kitchen. This ensured that the shade from the kitchen roof would protect *nkhuti* from excess rainwater seeping into it. The potatoes were left in the sun for almost a day to ensure that they were not wet. When the trench had been dug, it was filled with dry soil and sprinkled with ashes. This was a way of sanitizing the area. After storing the potatoes, they were covered by another layer of ash. The trench was enclosed with sticks as roofing. Laid over this were dry banana leaves or dry grass. Finally, soil was placed on top, leaving holes on the sides for access to the potatoes. By means of this type of storage, the potatoes were kept safe. They maintained their sweetness and could be kept for one year. In most cases farmers sell their farm produce so as to avoid the risk of decay and waste. This brings about a situation at a later stage in which farmers cannot access their own produce at government/local markets, owing to financial constraints.

The Role of Women in Food Storage and Preservation

An understanding of the role of gender and the way it affects the intrinsic value of the local knowledge-system is critical to the understanding, interpretation, and dissemination of indigenous knowledge. As a result of this gender differential and specialization, the indigenous knowledge and skills held by women on food-security issues often differ from those held by men. This differentiation affects patterns of con-

trol, participation, access, and use, while resulting in varying priorities for innovations and the use of indigenous knowledge-systems. Women of the Lomwe ethnic group are generally more involved in subsistence agriculture activities than are men. Men engage in commercial agriculture such as the growing of tobacco, sunflowers, and cotton. In addition, men engage with construction work such as building, while others engage in the fishing industry, for which Malawi is well known. Women are, therefore, left to conduct agricultural work, keeping the homes, and nurturing children. Women also play a vital role in the post-harvest operations of storage of grain/legumes and preserving of vegetables. The traditional ways of storage and preservation of food in the Lomwe culture were mostly associated with women. This is from the background that most, if not all, African societies are patriarchal, where gender roles are part of the hegemonic structure. The issues of food processing such as winnowing, seed selecting, threshing, shelling, pounding, drying, and cooking (preserving) were more of a woman's job. Men were more concerned with construction work. Although the *msanja* was constructed by men, women were found to be more skilled at and involved in packing the grains and legumes onto it. This is also echoed by Matsa and Manuku (2013). In their study, they note that women play a significant role in food security, even though they are challenged by their physical and decision-making powers within patriarchal societies. Matsa and Manuku (2013) also argue that there are interconnections between rural women and agricultural activities; however, indigenous knowledge is left out of many developmental policies and projects. Through their indigenous knowledge of food storage and preservation, women have contributed enormously to food security in many nations (see World Bank 2003). This body of indigenous knowledge and initiatives ensured that food is kept well so as to avoid wastage; the food is stored for future use. This was used as a buffer for disaster-preparedness, allowing food access by the household anytime it is needed.

CONCLUSION

This paper has argued that indigenous knowledge-systems can contribute to food security. With examples drawn from Malawi, we have il-

illustrated way through which indigenous knowledge systems can assist in food preservation and food storage, leading to food security. Our argument is the abandonment of the indigenous knowledge-systems is one of the causes of food insecurity.

RECOMMENDATIONS

In order to turn the tables on the issue of dropping food levels, which threatens food security of most households, radical approaches become necessary in terms of utilization of hitherto-abandoned indigenous ways of storage and preservation. Firstly, indigenous knowledge practices in specific areas have to be recognized, appreciated, and documented, so as to identify areas which call for improvement. This kind of intervention will ultimately improve the level of poverty in most communities. The gender-balance innovations must also be identified and targeted in order to maximize productivity. The current trends in food production suggest that development strategies devoted to gender equity must be formulated in improving food security. Food storage and preservation need not be understood narrow-mindedly as a woman's duty.

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