

This is an Accepted Manuscript of an article published by Taylor & Francis in *Food, Culture and Society* on September 2015, available online:

<http://www.tandfonline.com/10.1080/15528014.2015.1043112>

## **Beliefs, taboos and minor crop value chains: the case of Bambara Groundnut in Malawi**

**Lora Forsythe**

Natural Resources Institute, University of Greenwich

**Mala Nyamanda**

Lilongwe University of Agriculture and Natural Resources

**Agnes Mbachii Mwangwela**

Lilongwe University of Agriculture and Natural Resources

**Ben Bennett**

Natural Resources Institute, University of Greenwich

### **Abstract**

Throughout sub-Saharan Africa, bambara groundnut (*Vigna subterranean*) is a source of food for smallholder farmers that is increasingly promoted for its drought tolerance, soil enhancing qualities and nutritious properties. Being an accessible crop to smallholders, it has also recently been the focus of support to develop its value chain in Malawi. However, bambara groundnut is featured in the belief systems of rural people in Malawi, and may effect and be effected by market development. Beliefs and taboos reflect the life/death meanings symbolically represented in bambara groundnut, which influences how and by whom the crop is produced and consumed. These practices lend significant control over the crop to women. These findings have important implications for development and market related interventions that work with food crops, which need to be taken into account during the design phase.

### **Keywords:**

Bambara; gender; minor crop; beliefs; taboos; gender; local knowledge.

*“Mwayi wa mzama wofukula ndi manja khasu lilipo”*

*(We are as lucky as a bambara groundnut, which can be dug with bare hands without needing a hoe) - Traditional song sung by women in Chichewa*

### **Introduction**

Bambara groundnut (*Vigna subterranean*) is a traditional legume food plant in Africa. It is a source of food for smallholder farmers that is nutritious and protein-rich. It is also a drought-tolerant crop that requires minimal inputs, making it an important crop for climate change adaptation. Despite these benefits, production of bambara is low and is mostly consumed at the household level.

Recent research conducted in East Africa aiming to develop bambara groundnut markets with farmer groups found a number of beliefs and taboos associated with the groundnut in Malawi (Bennett et al. 2012). It was felt that this warranted further research, in order to identify possible implications of supporting bambara value chain development. This paper is the result.

The study found that bambara groundnut is featured in the belief systems of rural people in Malawi, and this may effect and be effected by market development. Beliefs and taboos reflect the life/death symbolism of bambara groundnut, along with influencing how and by whom the crop is produced and consumed. These practices lend significant control over the crop to women. The findings have important implications for development and market related interventions that work with food crops, which need to be taken into account during the design phase.

## **Background**

A significant part of Contemporary development discourse focuses on the integration of smallholder farmers into agricultural value chains for both economic growth and poverty reduction (DfID and SDC 2008, FAO 2011; World Bank 2007; RNRAT 2004). This approach involves identifying and addressing constraints, inefficiencies and barriers to entry that effects smallholders at different stages of supply chains, which inhibit producer participation in, and returns from, markets (Kanji et al. 2005; ECA 2008). Value chains for crops that are durable and have low input requirements, such as bambara groundnut, are of particular focus due to their accessibility by smallholder farmers and promising marketing potential.

However, the role of belief systems on farmer behavior in particular has received scant attention in literature on agricultural value chain development for smallholders. There are a number of studies on the economic value and usefulness of minor crops in poverty reduction (Vietmeyer 2008; Kruijssen and Sudha 2007; Schreckenberget al. 2006) and value chain development (Will 2008). Some studies have included the use of local knowledge (Heong and Escalada 1999; Guijt and Hinchcliffe 1998). There is also literature that examines the beliefs around food consumption such as fish in the Amazon (Begossi et al. 2004) and food restrictions for women in Nigeria (Nwajiuba and Okechukwa 2006), and studies on beliefs around major crops and belief systems, such as maize in Latin America (González, 2001), and yam in East Asia (Tuzin 1972). Therefore, this research may suggest a relatively under-explored intersection of beliefs and taboos in agricultural systems and value chain development, particularly with regard to minor crops.

Beliefs and taboos influence value chain dynamics as they ascribe meaning to the interaction of people, the environment and economy, which organizes and manages behavior (North 1994,

Colding and Folke 2001, Cunningham 2001). These dynamics are highly structured around gender and other factors of social difference such as age and social status (Colding and Folke 2001, Cunningham 2001). North (1994) argues that beliefs and taboos operate to regulate social order and behavior by penalizing non-conformity to prevent disorder, and as such, work as informal institutions. This contributes to building social pressure on individuals to conform to societal norms, and can be argued to be a strategic response for individuals to maintain benefit or power, or to avoid the depletion of resources (Wilson 1980). The role of belief systems as an institution is strongly evident in Malawi, similar to most parts of rural Africa, where there is a long history of belief in the spirit world (Gordon and Gordon 2006).

### **Characteristics and economy of bambara groundnut**

Bambara groundnut originates from West Africa throughout the semi-arid zone of sub-Saharan Africa. It is named differently between and within countries, but in Malawi the name often relates to the color of the small circular seed, such as red, white, black and mixed. It is a highly nutritious crop with high protein and calorie content, containing a range of vitamins and minerals, making it an important crop for poorer people who are unable to afford animal protein (Hillocks et al. 2012). The gross energy value is greater than other common pulses including cowpea, lentil and pigeon pea (Azam-Ali et al. 1982). It is a good source of fiber, calcium, iron and potassium (Hillocks et al. 2012). The seeds contain 63% carbohydrate, 19% protein and 6.5% oil (Linnemann 1987).

Bambara groundnut is also a drought-tolerant crop that contributes to soil fertility through nitrogen fixation (Ramolemana 1999), making it an important crop in the context of climate change adaption and mitigation. Yields are also higher under conditions that are too arid for other crops such as groundnut, maize and sorghum (Thottappilly and Rossel 1997). It can also be grown without fertilizers, chemicals, or high labor requirements; characteristics which lead community members to report that “*you don’t have to grow it*”. These characteristics are important for resource poor farmers, particularly women, who lack access to inputs and the financial means of which to purchase (FAO 2011, World Bank 2012).

Bambara groundnut is a popular snack crop and there are numerous traditional recipes throughout sub-Saharan Africa (Hillocks et al. 2012). Seeds can be eaten fresh or cooked while immature. At maturity they become hard and require boiling before further preparation. In the study areas, bambara groundnut is often viewed as an accompaniment with the main staple *nsima*, a traditional dish made with maize flour and water.

Currently there is no data on the level of international trade of bambara groundnut. However, Ghana, Burkina Faso, Cameroon, Zimbabwe and Madagascar are known to export to Western Europe and North America to supply African diaspora markets (Mwangwela et al. 2010).

In Malawi, bambara production remains at the subsistence level and approximately 70 to 80 per cent of produce is consumed in the household. The majority of bambara groundnut producers are women, who are responsible for production and post-harvest activities, including marketing and preparation. Constraints on bambara groundnut production include lack of

seeds, poor demand and markets, unpredictable rains contributing to low yields, along with the beliefs and taboos restricting production to certain groups of people (Mwangwela et al. 2010).

There are two 'short' bambara value chains in Malawi, fresh and dried. According to a bambara value chain study undertaken by Bunda College in 2010 in Malawi (*unpublished*), small amounts of both fresh and dried bambara are sold by producers at an open market or from the homestead. Small-scale traders, who are also mostly women, sell bambara at village markets or district centers, with either their own produce or that purchased from producers in their locality. Less than 100 kilos was reported to be sold during a typical year, but both average trade volumes and selling prices were reported to be increasing between 2007 and 2009. However, profits remained low. During the 2009 marketing season traders were buying the bambara at an average price of 130 Malawi Kwacha (MK) per kilo (equivalent to US\$0.95 per kilo as of April 2010) and selling at the average price of approximately 145 MK per kilo, or US\$1.00 per kilo), resulting in a profit margin of only 4% (including transportation costs).

### **Methodology**

The conceptual framework for the study is based on ethnoecology, which combines the disciplines of anthropology and human ecology, while emphasizing the important role of belief systems in the management of the environment. This is being applied in conjunction with the value chain concept that focuses analysis on the different stages of the supply chain. Central to this type of research is engaging with communities to gain insight into their 'worldview' and how the natural world is understood (Rocheleau et al. 1989, Cunningham 2001), and applying this knowledge to the market context.

The fieldwork was conducted in September 2011 and consisted of fifteen focus groups with community members and interviews with traditional healers conducted in local languages. The aim of the focus groups was to capture a range of perspectives and experiences of individuals in a variety of socio-economic and geographic contexts. Interviews with traditional healers were also conducted to obtain information on the traditional uses of bambara groundnut in healing practices and traditional medicine.

The discussion points were based on a topic guide developed by the research team, drawing from preliminary findings of a baseline report on bambara in Malawi and was pretested within a community around Bunda College. The topic guide was structured around eliciting information on local perceptions, knowledge and practices regarding bambara within agricultural and belief systems, particularly through investigating socio-cultural classification systems to understand the meanings ascribed to different crops. Participatory methods were also used during the fieldwork, which included participant rankings and village walks.

The focus groups consisted of approximately 10 to 15 participants in four districts in three regions of Malawi (refer to table 1). Regional representation in the focus group locations covered different ethnic groups, including the Tumbuka and Tonga in the Northern region, the Ngoni in the Northern and Central Regions, the Chewa in the Central Region, and the Yao, Lomwe, Sena, and Mang'anja in the Southern Region (MHRC 2005). However, increasing migration furthers the point that communities are not ethnically homogenous, which was also

reflected in the focus groups. Purposive sampling was used to select districts and communities within the regions. Community selection criteria was based on areas identified in the value chain study and by local extension workers as locations where bambara groundnut is grown widely and there is some evidence of beliefs and taboos related to bambara groundnut (Mwangwela et al. 2010).

Focus groups were held separately with community leaders (six groups), the elderly (over 50 years and over, approximately) (six groups), men and women from 21 to 60 years (one group), youth (under 20 year of age) (three groups). This was to ensure that people were comfortable in expressing themselves and so that questions could be tailored to the knowledge and experience of the participants, and to triangulate information. The agricultural extension workers facilitated the mobilization of the different groups to participate in the discussions. Participation in the focus groups was open and voluntary.

**Table 1 Sample frame of the study**

<b>Region</b>	<b>District</b>	<b>Ethnic groups reported in the community</b>	<b>Focus groups</b>
South	Mangochi	Yao (with Lomwe and Chewa to a lesser extent)	- Community leaders - Elderly women - Young men & women
South	Mwanza	Mang'anja	- Community leaders - Elderly women
Central	Ntcheu	Chewa (with Yaos, Lomwe to a lesser extent)	- Community leaders - Elderly Women
Central	Lilongwe	Chewa, Ngoni and Yao	- Community leaders - Elderly Women
Central	Ntchisi	Chewa (with Yao and Ngoni to a lesser extent)	- Community leaders - Elderly women
North	Mzimba community 1	Ngoni	- Traditional healer (interview) - Community leaders - Elderly women - Young men & women
North	Mzimba community 2	Ngoni	- Traditional healer (interview) - Men and women

The remainder of the paper is organized into the following sections: a description of rural livelihoods in the study areas; followed by the presentation of the practices and beliefs around bambara groundnut including agricultural production, marketing and consumption; uses of bambara in spirituality, rituals and traditional medicine, followed by the implications and conclusions from the findings.

### **Description of rural livelihoods in the study area**

Smallholder agriculture is found to be the mainstay of rural life for focus group participants, along with other off farm activities to ensure income throughout the year. These activities are highly structured around gender. Alongside agricultural activities, a general picture is that men are involved in small-scale business, casual labor, bricklaying and working in formal

employment. Women's responsibilities include domestic tasks such as childcare, collecting firewood and water, food preparation, cleaning, and family health, along with small business generation such as brewing beer, casual work, selling food stuffs and processing. Household activities rely on contributions from children who assist with activities corresponding to the gender roles of their parents.

Men and women commonly work on joint farm plots where men have greater authority on cropping decisions, particularly in regard to higher income generating crops. Women are more likely to have responsibility over crops important for household food security that is said to sometimes conflict with their husbands' priorities. In polygamous households wives tend to maintain their own plot with their husband providing labor on a rotational basis. Interestingly, women in one community (Mangochi) are requesting separate plots from their husbands in order to have greater control over the income generated from that land, which they feel a separate plot could provide.

Cropping decisions are made according to local crop classification systems and reflect how farmers attribute meaning and gender roles to activities that underlie their decision making and production behavior. In the communities visited, households generally categorize crops according to their role in income generation, including cash crops and some staples, or in household food security and subsistence, including minor and staple crops, with some crops being both. They are often associated with gender roles, where minor and subsistence crops are often considered women's responsibility, while crops that are the main income-earners are men's responsibility. However, this distinction, which is commonly reflected in literature, can mask important nuances such as the labor contributions made by both sexes on particular crops, as well as changes brought about through market development of subsistence crops.

The common factors influencing the selection of crops among focus group participants include length of maturation, drought tolerance, market prices and demand, diet diversity and medicinal use. Staple crops are stated as the most important category for households, typically maize or cassava, which are essential foods and important for income generation. The minor crop category provides diet diversity and perhaps some income, often for women. In the study areas minor crops include sweet potatoes, groundnuts and pigeon peas in the south; and groundnuts, beans, sweet potatoes and soya in the north.

Bambara groundnut is considered a minor crop throughout Malawi. Reasons for planting bambara provided by focus group participants are diet diversity, reliable yield, medicinal and ritualistic purposes. Focus group participants perceive bambara groundnut production to be low and declining over time. The black variety is the least available among the communities, stated to be strongly associated with death, than compared with the more favorable white variety. Overall, focus group participants estimate that a few to approximately half of the households in their communities are involved in production. However, estimates are unreliable as some households cultivate the crop in secret, which is related to beliefs and taboos around the crop.

Cropping decisions and ownership of produce are challenged privately within households, demonstrating different interests of household members, particularly men and women. For

example, a focus group with elderly women in Lilongwe found that men often steal what is considered to be their wives' beans to sell them in the market for a quick source of cash. Women in Ntchisi district also described that they steal their husbands' cassava and sell it without asking their permission when they need money.

Malawi is governed by belief systems that give rise to a host of social practices and taboos that influence the daily life for Malawians, of which bambara plays one part. These are played out in different ways among the ethnic groups in the country, although there are remarkable similarities. The next section provides an overview of the beliefs and taboos that correspond with bambara groundnut

### **Bambara groundnut beliefs and taboos**

Bambara groundnut is found to have a symbolic significance of both life and death that is demonstrated in various ways in the study areas. The dual meanings seem contradictory; however this paradox is common in many belief systems throughout the world, as the symbolism of death strongly relates to notions of life and fertility (Moore 1998, Moore et al. 1999). The origins of these beliefs are largely unknown. Rural communities in Malawi have an oral tradition, whereby the village elders play an important role in communicating local knowledge to the youth. Elderly women interviewed during the study were asked where the beliefs were derived from, and the common response was that it is knowledge passed through their families and reasons behind the beliefs and taboos were seldom known. One elderly woman in Mzimba said "*in the past we didn't question things. We just followed our elders and they did not explain why*".

Bambara agronomic, marketing and consumption practices are influenced by these meanings, as well as its use in spiritual and medicinal healing, and rituals. These beliefs and taboos are perceived by community members and leaders as a way to keep access, control and benefit from the groundnut to specific groups of people, and in this case, women. However, there is also evidence that these beliefs are changing. These dynamics are explored in the next sections.

### ***Beliefs associated with bambara groundnut agriculture and marketing***

In the study areas, local belief systems largely restrict production of bambara groundnut to women, particularly older women who have lost a child in northern Malawi. The belief associated with this taboo is that bambara groundnut invites death into a household, of which children and men are particularly vulnerable. Therefore, women, especially in the northern region, who have already experienced the death of a child in their household, are immune from the death believed to be associated with the bambara groundnut. In some communities men and youth can perform some agronomical activities, such as making ridges for bambara, as long as they don't touch the seed.

*"You only plant bambara groundnut when one of your children is dead"* (Mzimba district, elderly women).

Reasons behind the beliefs are that it is a way to control access to and benefit from the resource. Some youth participants explained that in the past witches cultivated bambara groundnut and bewitched other producers to scare them away from growing it.

Taboos also influence people's access to seed, along with perceptions of their high expense and limited return on investment. For example, a focus group with elderly women in Mzimba revealed that people are restricted from asking others for seeds as it would be tantamount to asking for death. To circumvent this threat women take seeds from a family or close friend's home without permission, which is acceptable as long as they don't ask for it directly.

*"You do not beg for bambara groundnut seed because it is like begging for death if you are young and have not had a child die"* (Mzimba district, elderly woman).

Very few focus group participants sell bambara, and those who do, do so in small quantities and irregularly. Bambara is sold predominately by women, which adheres to the societal norms that see them responsible for its production and preparation, as well as the taboo that only women and/or elderly women should produce the crop. A common statement from participants selling bambara is that they sell on the local market when they have some extra harvest from what is needed in the household. The women reported that they have control over the income from the crop due to their strong role in its cultivation and its perceived low value by men.

*"Bambara groundnut is sold by women. The woman will make money on the bambara groundnut and she will decide what is needed for the home"* (Ntcheu district, elderly woman).

However, the women interviewed who sell bambara often do not have enough produce to see them through to the next harvest, indicating low supply levels. The women perceived this to be due to the beliefs and taboos discouraging people from planting it and the lack of seeds and viable markets for the crop.

Overall, participants expressed that they were not entirely convinced by the beliefs or taboos but consciously self-restrict bambara production to protect them against bad luck, witchcraft or death. Focus group participants in two of the communities gave examples where men or youth in their community are secretly planting the crop and hiding it through intercropping. However, there is evidence that this is changing. In addition, and despite these beliefs, focus group discussions indicated that they would break taboos if new opportunities in bambara production and marketing are available. However, as beliefs play an important role in Malawian society in all aspects of livelihoods, not only bambara, it is questionable whether this perception is more based on opportunism rather than the erosion of belief in the taboo itself.

*"They (young people) plant it but it is hidden. They are still scared of witchcraft. But these days some people are planting and exposing it. Nothing is happening to them so more people are getting encouraged to do it"* (Mzimba district, youth).



In most cases, women feel that the beliefs and taboos that promote their control over the crop would be challenged if there is new market demand for the crop, as they have had this experience before when other crops that became more commercial. A focus group in Mzimba gave one example where they previously controlled the production and marketing of white beans in their community. However, over time, men started taking over the decision making regarding production and marketing, which was perceived to give them more control over the more lucrative income from the crop. Another women's group in Ntchisi had a similar experience. This demonstrates the risk of interventions that aim to improve marketability; it could threaten women's existing access and control over the crop if not adequately mitigated.

*“Women are the ones who are concerned about the accompaniments for the family so they will plant bambara groundnut. There isn't much marketing so men don't take an interest in it and they don't see the value. Men think it is a waste of time and they plant cassava instead” (Mzimba, male youth).*

### ***Beliefs associated with bambara groundnut consumption***

There are a number of taboos found during the focus groups discussions that restrict bambara consumption, particularly among men, which is due again to its association with death. For example, a taboo found in the study locations is that people employed in jobs perceived as high risk – often associated with male roles - such as soldiers, police officers, hunters, and even criminals, are restricted from consuming bambara so as not to make themselves more vulnerable to death.

*“Usually the police or military can't eat bambara groundnut. It's a taboo food” (Ntchisi district, young woman).*

In the northern study locations, bambara consumption is also restricted when men travel. For example, a focus group in Mzimba indicated that men who are employed as drivers are not to consume bambara as it is believed to cloud their vision if they are driving during the night. In the same location, women are also not allowed to eat bambara groundnut if their husbands are travelling, as it is believed to make their husbands vulnerable to death.

These taboos are believed to legitimize unequal access to food, particularly when it is scarce, according to interviews with a community leader, a traditional healer and youth focus groups. However the bambara taboo is unique as it inhibits consumption among men, where other food taboos inhibit specific foods for women. One example given by a traditional healer of other food taboos is with eggs, which are not to be consumed by young women as they are believed to reduce fertility, resulting in the justification for men consuming more eggs.

*“They (witches) were protecting the crop. Because fresh bambara groundnut is very sweet, if everyone eats it, it will all finish. So I think it is to control it and the seeds; so that it is only in specific hands. So it became a special crop” (Mzimba district, youth).*

## ***Role of bambara groundnut spirituality, rituals and traditional medicine***

### **Love and fertility**

In stark contrast to beliefs associating the crop with death, bambara groundnut is also used to encourage fertility and reproduction among women and infant boys, animals and crops in the study areas. In many cases this reinforces the importance of women's connection with the crop.

Different practices using bambara to increase fertility were found in the focus groups. Women in Ntchisi gave one example where a cup of bambara groundnut is given to newly married women to encourage reproduction. In the Mwanza focus groups, women stated that bambara is rubbed on the scrotum of infant boys to both ensure fertility and a successful bambara groundnut harvest. The symbolic link between men's testicles and the bambara groundnut is said to be due to their similarity in appearance.

The symbolism of bambara groundnut and women's fertility is also featured in ritualistic practices such as initiation ceremonies.<sup>1</sup> In one community, bambara is consumed during ceremonies following the birth of a woman's first child. At this ceremony a group of new mothers receive instruction in childcare from elderly women in the community. During this time elderly women prepare a meal of bambara groundnut for the new mothers.

Bambara groundnut is also associated with fertility and mating among animals, particularly pigeons, which are birds that mate for life.<sup>2</sup> In these practices two black bambara groundnuts are used and are either mixed with other secret ingredients for the pigeons to drink or it is placed under the pigeon house.

The notion that bambara helps to increase fertility among women and young boys is juxtaposed to it causing infertility or preventing promiscuity in adult men according to spiritual beliefs, and therefore threatening adult male fertility. This exemplifies the dual life/death meaning of the groundnut. An example from a men's focus group is that they are discouraged from eating bambara groundnut because it is a symbolic reference to eating their own testicles. Young men are restricted from consuming bambara groundnut during coming of age ceremonies, which is also associated with protecting their fertility, according to youth focus groups in Mzimba and interviews with male community leaders in Ntchisi<sup>3</sup>.

Bambara is also found as a key ingredient in love potions, which are used by women to limit the promiscuity of men and their ability to reproduce with multiple women. The use of love potions were found throughout the study area and are considered by the participants as a form

---

<sup>1</sup> Initiation ceremonies are widely practiced as a rite of passage for young men and women marking an important transition in their lives or of membership into sects or societies. Generally, the ceremonies include instruction in the norms and values of the community or the sect, along with responsibilities in marriage and adult life. This takes place at the time of puberty for boys and girls or before a woman gives birth to her first child, and is specific to the culture and community (MHRC 2005).

<sup>2</sup> Pigeons are widely owned in Malawi and are an important source of animal protein for the rural population (Gondwe et al. 2000).

<sup>3</sup> One particular variety of bambara is even named after a secret society 'Maso a Maria' in Ntchisi, Malawi.

of witchcraft. The potions are believed to entice men to fall in love with a specific person and are commonly used by women on a man to prevent infidelity, “*so a man does not want to look elsewhere*” (“*ku zamitsa moyo*”). Young men who visit the homes of young women they are courting are also discouraged from eating bambara groundnut to prevent them from becoming ‘stuck’ to that particular person.

*“We take bambara groundnut from a previous season and mix it with something else. If the man had another woman she would be chased away”* (Ntchisi district, young woman).

The use of bambara groundnut in love potions is very symbolic. Bambara groundnuts usually have one kernel per pod, but in some cases there are two kernels in one pod and these are used to symbolize the two individuals together. The kernels are combined with the hearts of pigeons, symbolizing the eternal mating of the couple, as with pigeons. The concoction is brought to the *sing’anga* who mixes the concoction with other secret ingredients. The completed potion is returned to the owner and they are instructed to secretly add it to the food of the man they want to entice, or add it to water used to clean the home or to place it within the mud of the house wall and floors.

In Mzimba, a similar potion is used in polygamous families where a wife wants the husband to separate from the other wives. This potion requires that bambara groundnut first go through the wife’s digestive system before it is mixed with other ingredients and given to the husband:

*“When you are in a polygamous family the woman takes one raw bambara groundnut and swallows it as a pill and checks her feces for it. It is then taken out and mixed with herbs and given to the man to eat. He will forget about the other wives. This is witchcraft”* (Mzimba district, elderly woman).

### ***Protection and healing***

Traditional healers, who are mainly men, use and administer various herbal remedies and treatments using bambara groundnut to prevent and treat various illnesses, diseases, and “*spiritual attacks*”. The symbolism of bambara groundnut in these practices is one that protects life and fends off death. Spiritual attacks are said to come from ancestors, dissatisfied spirits or witchcraft, and are reported to usually be initiated by people within the community. Illnesses and diseases are often associated with these attacks, which are seen as punishments from spirits (McConville and Matinga 2004). To address these situations, medicines and rituals using bambara are made by an *ofuna mankhwala*, a community ‘herbalist’ or traditional healer, who mitigates between the natural environment, and the human and spiritual world.

The most common health and spiritual issues that traditional healers are reported to treat with bambara groundnut are sexually transmitted diseases, infertility, epilepsy, and spiritual attacks. Treating these issues involves mixing a number of secret herbs and plants together with the groundnut, and occasionally using animal parts, for the patient to consume, or to place in small straight line cuts (*mphini*) made in the skin by the healer. Other practices that are not as

common are to prevent children from having nightmares and contracting measles, treating abdominal pain, and as an abortifacient.

Potions and ornaments with bambara groundnut are also used as a talisman to protect physical possessions, such as the home or assets such as livestock. Focus group participants in Ntcheu district stated that these are used when people are threatened by witchcraft due to someone's jealousy.

However, these medicinal and ritual practices are reported to be changing. Youth reported that these beliefs play less of a role in their lives compared to their parents and grandparents. The reasons given are due to the improvement of medical access, the influence of Christian and Islamic faiths, and a general feeling that the beliefs are outdated in modern society.

*"The initiation is of no value so we don't use it. We refuse. Our parents did it. It is for the old times"* (Mangochi district, youth group).

*"Men are influenced by Islam and realized that the initiation ceremony doesn't benefit them. Some things do not agree with our faith and men can read now and they think that God doesn't like it. The ceremonies still happen but it is not as common"* (Mangochi district, elderly women).

*"In the old days they [the elderly] would use it. But mostly now people are rushed to hospitals"* (Mzimba district, youth group).

### **Implications of the findings**

An analysis of the belief systems surrounding the crop suggests that simple monetized relationships between demand for bambara and its supply response may be naïve. These findings have important implications for value chain development that can be used to guide interventions.

Firstly, the findings suggest that beliefs and taboos around bambara inhibit the production potential of the crop, which could impact on value chain development at the production stage. However, at the same time, participants stated that the lack of viable markets for the crop is a major factor for low production of the crop. The beliefs and taboos are also less influential on the perceptions of youth who see these beliefs as part of the "old ways". Furthermore, with low input requirements and benefits for the soil, people feel it is a realistic endeavor for them to undertake. Therefore, beliefs and taboos may not necessarily impact on production of the crop in the long term.

Secondly, and perhaps a more important implication, is the possible challenge that bambara value chain development could pose on beliefs and taboos that regulate women's power and control of the crop, particularly older women who are often in vulnerable positions. Commercialization of the crop may incentivize farmers to start or increase its production, namely men, which can challenge these taboos and hence enable men to capture benefit away from women. This could take a source of income (although minimal at present) away from

women, who are widely known to make more expenditure in food, health and education (Gurung 2006, Ellis et al. 2007, World Bank et al. 2009).

The secretive participation of men and youth in producing and selling bambara, along with past experiences of the women being excluded when other crops increase in value, demonstrates that if the perceived profitability and status of the crop improves there are likely to be shifts in gender roles and possible conflict in the household. Subsequently, while beliefs and taboos of bambara groundnut provide an opportunity to target women, particularly older women, as demand increases it is important for an intervention to focus on how women can maintain their role and benefit from the crop as its value is increased. This raises the need for thoughtful project design based on comprehensive and gender-sensitive needs assessment, monitoring and impact analysis.

The findings also imply a challenging context for promoting bambara consumption in internal markets, particularly among men within Malawi, due to perceptions of its association with death. However, with the potential of bambara to provide a nutritious source of food, and its durability in difficult environmental conditions, production and consumption of bambara should be encouraged.

From a marketing perspective, these findings could provide an opportunity to utilize some of the potential 'unique selling propositions' conferred by beliefs and taboos. Used well, the 'special' nature of Bambara and its associated beliefs and taboos could be its selling point. There is an opportunity in this context to promote products containing bambara groundnut emphasizing the positive meanings of love, partnership and fertility, which could be used to promote a lighter and pleasant meaning of the crop to encourage greater consumption of bambara groundnut. Promoting bambara will therefore help to improve demand for the crop, which is a significant lever for farmers to produce the crop in larger quantities.

In addition to these issues, the findings also raise a question around the ethics involved with market development interventions and influencing traditional belief systems, along with how local knowledge around the crop can be maintained. Promotional activities will need to address the issue of its possible impact on belief systems, along undertaking measures to collect and document local knowledge of bambara. This should on and promote women's, particularly older women's, existing knowledge and expertise in cultivation of the crop and in food preparation.

## **Conclusion**

Bambara groundnut is shown to have many important and powerful meanings, including death, protection, fertility and love, and is widely used in traditional medicine and spiritual practices. These symbolic meanings of the crop have developed into a set of rules on the production, consumption and selling of bambara groundnut that affects men and women in different ways. In particular, beliefs and taboos give women considerable power and control over the crop that may be challenged with market development, which requires further study.

*This is an Accepted Manuscript of an article published by Taylor & Francis in Food, Culture and Society on September 2015, available online:*

<http://www.tandfonline.com/10.1080/15528014.2015.1043112>

While gender relations, beliefs and taboos associated with bambara groundnut reveal the complexity of agricultural systems in rural Malawi, it also demonstrates the importance of understanding context when designing interventions aiming to improve the local value chains, particularly from a gender perspective. This context should to guide choices in development interventions and suggests that the exposure of rural belief systems might be a crucial element of future value chain methodology.

## Acknowledgements

This study was supported under a grant from the Collaborative Crop Research Program of the McKnight Foundation. We would like to thank Yvonne Sunduza who supported the field work as well as John Morton, Adrienne Martin and Claire Coote from the Natural Resources Institute who made valuable contributions and comments on the draft.

**Lora Forsythe** is a Senior Research Fellow at the Natural Resources Institute, University of Greenwich. She is gender and livelihoods specialist with expertise in the socio-economic and cultural dynamics of rural livelihoods, specifically in value chain development, food and nutrition security, and land and natural resource rights. Natural Resources Institute, University of Greenwich at Medway, Central Avenue, Chatham Maritime, Kent, ME4 4TB, UK. Tel: +44 (0) 1634 883067 Fax: +44 (0) 1634 883377. E-mail: [l.forsythe@greenwich.ac.uk](mailto:l.forsythe@greenwich.ac.uk)

**Mala Nyamanda** is a Senior Lecturer in the Department of Human Ecology in the Faculty of Food and Human Sciences, and Dean of Students, at Lilongwe University of Agriculture and Natural Resources. Mala has extensive experience in human development and rural sociology throughout Malawi. Lilongwe University of Agriculture and Natural Resources. P.O. Box 219 Lilongwe, Malawi. Email: [mnyamanda@bunda.luanar.mw](mailto:mnyamanda@bunda.luanar.mw)

**Agnes Mbachii Mwangwela** is a Senior Lecturer and Dean of the Food Science and Human Science Faculty at Lilongwe University of Agriculture and Natural Resources. She specializes in Food Science and Research, with particular expertise in utilization of legumes which include bambara groundnut. Lilongwe University of Agriculture and Natural Resources. P. O. Box 219 Lilongwe, Malawi. Email: [amwangwela@bunda.luanar.mw](mailto:amwangwela@bunda.luanar.mw)

**Professor Ben Bennett** is Head of the Food and Markets Department at the Natural Resources Institute. He is a trade and marketing economist with 27 years' experience of program management, research and consultancy. Natural Resources Institute, University of Greenwich at Medway, Central Avenue, Chatham Maritime, Kent, ME4 4TB, UK. Tel: +44 (0) 1634 883067 Fax: +44 (0) 1634 883377 E-mail: [ben.bennett@greenwich.ac.uk](mailto:ben.bennett@greenwich.ac.uk)

## References

Azam-Ali, S., Aguilar-Manjarrez, J. and Bannaya-Avval, M. 1982. A global mapping system for bambara groundnut production. Rome: FAO.

Bennett, B., Mponda, O., Mwangwela, A., Kidunda, B., Makoka, D., and Salegua, V. 2012. Bambara Groundnut: A situation analysis for Malawi, Mozambique and Tanzania. *Unpublished*.

Begossi, A. Hanazaki, N. and Ramos, R.M. 2004. Food chain and the reasons for fish food taboos among Amazonian and Atlantic forest fishers (Brazil). *Ecological Applications* 14:1334–1343.

This is an Accepted Manuscript of an article published by Taylor & Francis in *Food, Culture and Society* on September 2015, available online:

<http://www.tandfonline.com/10.1080/15528014.2015.1043112>

Bunda College of Agriculture, 2010. Malawi Bambara groundnut situation analysis. *Unpublished.*

Colding, J and Folke, C. 2001. "Invisible" systems of local resource management and biological conservation. *Ecological Applications* 11(2): 584-600.

Cunningham, A. B. 2001. Applied ethnobotany: People, wild plant use and conservation. Abingdon: Earthscan.

Department for International Development (DFID) and Swiss Agency for Development and Cooperation (SDC) 2008. A synthesis of the making markets work for the poor (M4P) approach. Bern, Switzerland: SDC.

Economic Commission for Africa (ECA) 2008. Economic report on Africa 2009: Developing African agriculture through regional value chains. Addis Ababa, Ethiopia: United Nations Economic Commission for Africa.

Ellis, A., C. Manuel, and Blackden C. M. 2006. Gender and economic growth in Uganda: Unleashing the power of women. *Directions in Development*. Washington DC: World Bank.

FAO 2011. The state of food and agriculture 2010-2011: Women in agriculture. Rome: FAO.

Gondwe, T.N.; Chilera, F.C.; Phoya R.K.D., and Jonazi, J.B. 2001. On-farm and on-station evaluation of growth and reproductive characteristics of pigeons in Malawi. In *Sustainable animal agriculture and crisis mitigation in livestock-dependent systems in southern Africa*. Proceedings of the regional conference 30 October to 1 November 2000. Eds. J.W. Banda, M.G.G. Chagunda, L.A. Kamwanja, R.K.D Phoya and A.C.L. Safalaoh. Lilongwe: CGAIR.

González, R. 2001. *Zapotec Science: Farming and Food in the Northern Sierra of Oaxaca*. Austin: University of Texas Press.

Gordan, April A.A. and Gordon, D. L. (eds) 2006. *Understanding contemporary Africa, 4<sup>th</sup> Edition*. London: Lynne Rienner Publications.

Guijt, I and Hinchcliffe, H. 1998. *Participatory valuation of wild resources: an overview of the hidden harvest methodology*. London: IIED.

Gurung, C. 2006. The role of women in the fruit and vegetable supply chain in Maharashtra and Tamil Nadu India: The new and expand social and economic opportunities for vulnerable groups task order under the Women in Development IQC. Washington, DC: US Agency for International Development.

Heong, K. L. and Escalada, M. M. 1999. Quantifying rice farmers' pest management decisions: Beliefs and subjective norms in stem borer control. *Crop Protection*: 18(5): 315–322.

Hillocks, R, Bennett, C. and Mponda, O.M. 2012. Bambara groundnut nut: A review of utilisation, market potential and crop improvement. *African Crop Science Journal* 20(1):1-16.



This is an Accepted Manuscript of an article published by Taylor & Francis in *Food, Culture and Society* on September 2015, available online:

<http://www.tandfonline.com/10.1080/15528014.2015.1043112>

Kanji, N., MacGregor J. and Tacoli, C. 2005. Understanding market-based livelihoods in a globalising world: combing approaches and methods. International Institute for Environment and Development (IIED).

Kruijssen F. K, and Sudha, M. 2007. Developing the potential of underutilized fruits through the linkage of farmers to the market: a case of kokum marketing in the Western Ghats of India. Third international conference on linking markets and farmers: Exploring leading practices to foster economic growth in rural India 11-15 March 2007, New Delhi.

Linnemann, A.R. 1987. Bambara groundnut (*Vigna subterranea* (L.) Verdc.): A review. *Abstracts on Tropical Agriculture* 12(7):9-25.

Malawi Human Rights Commission 2005. Cultural practices and their impact on the enjoyment of human rights, particularly the rights of women and children in Malawi. Lilongwe: Malawi Human Rights Commission.

McConville, F. and Matinga, P. 2004. Cultural beliefs and practices influencing sexual and reproductive health and health seeking behaviour in Malawi. *International conference on AIDS Bangkok, Thailand*. UK: DFID.

Moore, A. 1998. *Cultural anthropology: The field study of human beings*. New York: Rowman and Littlefield.

Moore, H. L., Sanders, T. and Kaare, B. 1999. *Those who play with fire: gender, fertility and transformation in East and Southern Africa*. London: The Athlone Press.

Mwangwela, A, D. Makoka and Pungulani, L. 2010. Bambara groundnut situational analysis and value chain analysis: Malawi. Minnesota: McKnight Foundation.

North, D.C. 1990. *Institutions, institutional change and economic performance*. Cambridge: Cambridge University Press.

Nwajiuba, C.A., Okechukwu, O. (2006). Social status, traditional foods taboos and food security: A study of Igbo women in Imo State, Nigeria. *Journal of Agriculture and Food Sciences* 4(2):139-146.

Ramolemana, G.M. 1999. The phosphorus and nitrogen nutrition of bambara groundnut (*Vigna subterranea* (L.) Verde.) in Botswana soils. An exploratory study. *Thesis*. Agricultural University Wageningen.

Renewable Natural Resources and Agriculture Team (RNRAT) 2004. Making agricultural markets work for the poor. Working paper. London: DFID.

Rocheleau, D., Wachira, K., Mararet, L., and Wanjohi, B.M. 1989. Local knowledge for agroforestry and native plants. In *Farmer first: farmer innovation and agricultural research*. Eds. Robert Chambers, Arnold Pacey and Lori Ann Thrupp. London: Intermediate Technology Publications. Pp 14-23.

*This is an Accepted Manuscript of an article published by Taylor & Francis in Food, Culture and Society on September 2015, available online:*

<http://www.tandfonline.com/10.1080/15528014.2015.1043112>

Schreckenber K., Awono A., Degrande A., Mbosso C., Ndoye O. and Tchoundjeu, Z. 2006. Domesticating indigenous fruit trees as a contribution to poverty reduction. *Forests, Trees and Livelihoods*. 16:35-51.

Thottappilly, G. and Rossel, H.W. 1997. Identification and characterisation of viruses infecting bambara groundnut (*Vigna subterranean*) in Nigeria. *International Journal of Pest Management* 43: 177–185.

Tuzin, D.F. 1972. Yam symbolism in the Sepik: an interpretive account. *Southwest Journal of Anthropology* 28: 230-254.

Vietmeyer, N. 2008. Underexploited tropical plants with promising economic value: The last 30 years. *Tree for Life Journal* 3(1):1-13.

Will, M. 2008. Promoting value chains of neglected and underutilized species for pro-poor growth and biodiversity conservation: Guidelines and good practices. Rome: Global Facilitation Unit for Underutilized Species.

Wilson, E.O. 1980. *Sociobiology: The new synthesis*. Abridged edition. Cambridge: The Belknap Press of Harvard Press.

World Bank 2012. World development report: Gender equality and development. Washington, DC.

World Bank 2007. World development report 2008: Agriculture for development. World Bank, Washington, DC.

World Bank, FAO and IFAD 2009. Gender in agriculture sourcebook. Washington, DC: The International Bank for Reconstruction and Development / World Bank.