Affordable, accessible, healthy

Urban consumer knowledge and the use of indigenous food

By Nokuthula Vilakazi

For many residents in peri-urban areas, the price of essential healthy food items in supermarkets is unaffordable. At the same time, the more affordable informal markets tend to offer highly processed foods with low nutritional value. Indigenous foods are recognised for their potential to improve food and nutrition security, reduce malnutrition and enhance health and well-being, yet their use in urban areas is limited. In this article NOKUTHULA VILAKAZI explores the gap in urban consumers' knowledge about the availability, production, preparation and use of indigenous foods in the City of Durban, eThekwini Municipality, with a specific focus on cowpeas.

Introduction

Studies investigating food availability in urban areas have revealed that the urban food environments may not always offer affordable and nutritious food, particularly for low-income urban residents (Mudau & Mahlatsi, 2022). With an estimated 50% of the global population living in urban areas, and expected to rise to 70% (6.3 billion people) by 2050 (The World Bank Group, 2020), a complete overhaul of the global food system is needed to achieve optimal food security and reverse agro-food system damage (UNEP, FAO, & UNDP. 2023).

With more than half of the population in developing countries living in urban areas (United Nations Department of Economic and Social Affairs, Population Division, 2022), the impact of urbanisation on the food available to urban consumers is a cause for concern (Cockx *et al*., 2019). Rapid urbanisation has been accompanied by the expansion of supermarkets that drive the high acquisition of packaged, sugar-sweetened beverages and ultra-processed foods (Cockx *et al*, 2019). These supermarkets also offer healthier food options, which can cost up to 110% more in food energy compared to unhealthier options (Temple *et al*., 2011). The cost of basic healthy food items sold in supermarkets is unaffordable for low-income consumers (Vermeulen, Meyer & Schönfeldt, 2023).

High intake of ultra-processed and nutrient-deficient foods contributes significantly to the alarmingly high rates of non-communicable disease globally (Astrup & Bügel, 2019). Informal markets in urban areas typically provide affordable highly processed food to low-income urban residents (Battersby & McLachlan, 2013). Diversifying the urban food system by incorporating locally sourced, indigenous and seasonal foods can help tackle the challenge of providing affordable and healthier options (FAO, 2018).

Indigenous foods are primarily cultivated or sourced naturally in the geographic location of their origin (Mabhaudhi *et al*., 2017). The focus on indigenous foods also includes traditional foods as they have adapted to local conditions ending up confined to ecological niche areas (Kuhnlein & Receveur, 1996). Indigenous foods such as Amaranth leaves rank high in essential micronutrients such as vitamin A, vitamin B6, vitamin C, riboflavin and folate (Venskutonis & Kraujalis, 2013). As such, they are ideal for addressing food and nutrition security in their geographic locations of origin, particularly in rural areas (Mabhaudhi *et al*., 2017). The use of indigenous food in urban areas is under-reported (Slade, Baldwin & Budge, 2016).

South Africa's urban food environment is unique as it reflects the country's historic past, which saw the strategic placement of Africans on the outskirts of highly developed urban areas (Nenguda & Scholes, 2022). The urban food environment was primarily designed to cater for the elite with a desire for refined diets. While these changes have managed to meet the food demands, they have also brought undesirable changes in the food's nutritional quality.

Several indigenous foods were recognised with green leafy vegetables being the most popular. The participants identified mixed dishes such as *Isijingi* (cooked pumpkin mixed with maize meal), *isigwamba* (a mixture of green leafy vegetables and maize meal), *isithwalaphishi* (boiled beans mixed with maize meal) and *isigwaqane* (a dish made of cowpeas and maize meal). Younger participants showed limited knowledge of cowpeas and indicated that they would use cowpeas as a last option. Older participants maintained consumption to satisfy the craving for the indigenous foods that reminded them of their rural upbringing and culture and reported that availability and consumption of cowpeas has declined over the years.

Research methodology

Sample selection

The study was conducted in the city of Durban, eThekwini Municipality, South Africa. The target locations were north, west, south and central Durban (Figure 1) (eThekwini Municipality, 2022). The target was males and females older than 18 years, who are responsible for choosing and preparing food for themselves and/or other people based on their living circumstances.

Figure 1: The eThekwini Municipality functional regions

Source: eThekwini Municipality, 2022

The study employed a qualitative research approach using Focus Group Discussions (FGDs) to explore urban consumer experiences, knowledge and use of indigenous food.

Several dishes were identified as commonly prepared traditionally. Most of these are mixed with maize, which is the most commonly consumed cereal not indigenous to South Africa. Even though it is not indigenous, maize is an important cereal (Scheltema *et al*., 2015). Per capita maize consumption in South Africa is among the highest in Southern Africa, together with Lesotho, Malawi and Zambia, each exceeding averages of 100 kg/capita/year (FAO, 2021).

> *Respondent 2: "Isijingi (cooked pumpkin mixed with maize meal) and isigwamba (a mixture of green leafy vegetables and maize meal) are the most common indigenous foods in my area since it is easier to get the ingredients needed to prepare them."*
>
> *"We also have isikhuluphathi (boiled beans mixed with finely crushed mealies)"*
>
> *Respondent 8: "Phuthu (crumbly maize porridge) and (eaten with) green leafy vegetables."*
>
> *Respondent 5: "We have isigwaqane (boiled beans mixed with finely crushed mealies)"*
>
> *"We also have cornbread (fresh finely crushed mealies made into a steamed bread). When making this bread no rising agents are used, you simply crush the mealies and use their leaves to wrap the crushed mealies and bring to boil until well done."*
>
> *Respondent 1: "We have thwalaphishi (boiled beans mixed with maize meal), ubhomubhomu (white kidney beans) which is prepared differently from other beans."*

Some dishes with similar ingredients listed by the participants were given different names. For example "*isikhuluphathi*", "*isigwaqane*", and "*isithwalaphishi*" are composites of boiled beans and crushed maize or maize meal. Mkhize *et al*. (2023) also identified *"ingqumukazana"* (legumes mixed with fresh maize) as a traditional dish from KwaZulu Natal. Bambara and cowpeas *"imbumba"* were mentioned by a few participants

Easy access to modern ingredients driven by urbanisation has reduced the use of indigenous ingredients (Modi, 2009). Modern influences are seen through the modification of traditional preparation methods. Mixing traditional ingredients with modern ingredients has played a role in transforming traditional dishes across different communities (Mkhize *et al*., 2023). The use of modern ingredients was raised in all five discussions. Some of the participants recognised the modernisation of traditional dishes.

> *Respondent 3: "isiGwamba (green leafy vegetables cooked with finely crushed mealies) even though how we prepare it now is slightly different from how we used to prepare it back then."*

Plant breeding programmes specialising in researching and breeding indigenous vegetable food crops have succeeded in developing strains with different traits to the parent to address food and nutrition security (Mabuza, Mavengahama & Mokolobate, 2022). More research, however, is required to prove the speculations made by the participants regarding access to seeds and the use of fertiliser.

Knowledge of cowpeas

Despite the contribution to food security, consumption of cowpea (*Vigna unguiculata*) has declined over the years (Gerrano, Lubinga & Bairu, 2022). Knowledge transfer to the younger generation on the value of indigenous practices could help maintain their use (Dweba & Mearns, 2011). About half of the under 35-year-old participants did not know about cowpeas.

> *Respondent 3: "I don't know it…."*
>
> *Respondent 1: "It is my first time seeing it."*

Cowpeas face challenges related to soil quality and drought that limit their growth and availability (Bolarinwa *et al*., 2021). Factors implicated in the limited production of cowpeas in South Africa include climatic conditions, low productivity of genotypes, water stress, lack of improved cultivars, pests and diseases and poor storage (Bolarinwa *et al*., 2022). Some participants identified similar factors causing a decline in cowpea production in their areas.

> *Respondent 2: "We experience a lot of droughts in my area … it grows better in the summer seasons as we experience rains."*
>
> *Respondent 1: "It is not easily available as the soil conditions in my area is not favourable for its growth."*
>
> *Respondent 4: "Compared to few years ago, it is very little, we only have around 5 litres now."*

Availability and accessibility of cowpea

Cowpeas are found mainly at the Durban Fresh Produce Market (DFPM) and surrounding rural communities (Mkhize *et al*., 2023). Farmers specialising in indigenous crops such as cowpeas have a dedicated market space accessed by marketers and street traders.

> *Respondent 3: "There's the brown one … which is found mostly in the markets."*
>
> *Respondent 4: "The black-eyed are easily available … it can go for R13 ($0.69) per kilo."*
>
> *Respondent 1: "It is sold in buckets by some ladies in the market."*

Smallholder farmers are critical for the production of underutilised species. Indigenous species are produced mostly for subsistence purposes with the excess sold in informal markets (Masuku & Bhengu, 2021).

Most participants indicated that they did not use cowpeas as frequently as they had done growing up. On average, cowpeas were consumed at least once a week by the participants.

> *Respondent 2: "I love it … but I prepare it on days where I am not busy as it takes longer to cook through."*

Respondent 3: "I have it at least once a week … it is the type of traditional food that one misses regularly."

Respondent 1: "I eat it once a week, on other days I eat cabbage."

Respondent 2: "If cowpeas are not available, I replace it with red speckled beans … or we eat homegrown chicken."

Cowpeas were desired due to nostalgia for memories of their rural upbringing.

Respondent 1: "I am very fond of it … my mother cooks it really well back home."

Respondent 3: "I have very good memories of it … I only consume it only when I am home … I am afraid that if I cook it myself, I may not do so well."

Respondent 6: "Growing up, we went to events just to get it and other traditional foods … it reminds [me] of the old times."

Other reasons for consuming cowpeas were the awareness of their nutritional value, filling properties and versatility.

Respondent 4: "I consume it because it is filling … a small portion but increases … when cooked."

Respondent 2: "I consume it as a substitute … it is as nutritious as meat."

Respondent 1: "I love cowpeas, I love beans so I usually eat them … it has the same nutrition as meat."

Respondent 3: "I consume it because it is easily available and also very affordable."

Local names of cowpea dishes

Underutilised food species have a role in the traditional practices of many Africans (Lewu & Mavengahama, 2011). They remain part of the culture of African societies. Although participants identified several indigenous names, the common name for cowpea known to most participants was *"imbumba"*.

Respondent 3: "I know of Umzumbe (brown beans); uphizi (black eyed peas) … izindlubu (Bambara beans)."

Respondent 1: "I only know three varieties which are Umzumbe (red beans), imbumba (cowpeas) and Bhomubomu (kidney beans)."

Respondent 4: "Umzumbe (brown beans), ubhomubhomu (big white kidney beans), izindlubu (Bambara beans), udali (dhal), nophizi (black eyed peas). "

Participants also used colours to identify and differentiate varieties.

Respondent 3: "we name them based on their colours … we have red beans, white beans, black beans, etc."

Modi, M. 2009. The nutritional quality of traditional and modified traditional foods in KwaZulu-Natal. Minse Master's Dissertation. Faculty of Science and Agriculture, University of KwaZulu-Natal. Pietermaritzburg.

Morgan, D. L. 1996. Focus Groups. *Annual Review of Sociology*, 22, 129-152.

Morgan, D. L. 1997. *Focus groups as qualitative research*. Newbury Park: Sage.

Mudau, J. & Mahlatsi, M. L. S. 2022. Present Realities of Urban Food Insecurity in South African Townships, *African Renaissance*, 19(2), 159-177. Available at https:///doi:10.31920/2516-5305/2022/19n2a8

Nenguda, R. & Scholes, M. C. 2022. Appreciating the Resilience and Stability Found in Heterogeneity: A South African Perspective on Urban Household Food Security [Original Research], F*rontiers in Sustainable Food Systems*, 6. Available at https://doi.org/10.3389/fsufs.2022.721849

Neumark-Sztainer, D., Story, M., Perry, C. & Casey, M. A. 1999. Factors influencing food choices of adolescents: findings from focus-group discussions with adolescents, *Journal of the American Dietetic Association*, 99(8), 929-937. Available at https://doi.org/10.1016/s0002-8223(99)00222-9

Nyembe, S.N. 2015. Preserving traditional leafy vegetables using indigenous knowledge-based drying technologies to improve household food security in Limpopo Province, South Africa. Master's Dissertation. Faculty of Science and Agriculture, University of KwaZulu-Natal. Pietermaritzburg

Okop, K. J., Ndayi, K., Tsolekile, L., Sanders, D. & Puoane, T. 2019. Low intake of commonly available fruits and vegetables in socio-economically disadvantaged communities of South Africa: influence of affordability and sugary drinks intake, *BMC Public Health*, 19(1), 940. Available at https://doi.org/10.1186/s12889-019-7254-7

Piqueras-Fiszman, B. & Jaeger, S. R. 2016. The incidental influence of memories of past eating occasions on consumers' emotional responses to food and food-related behaviors, *Frontiers in psychology*, 7, 943.

Qwabe, Q. N. & Pittawaty, T. 2023. Exploring the Role of Indigenous Vegetables in Rural Livelihoods: Perceptions from the Ntuze Community, *South African Journal of Agricultural Extension*, 51, 142-154. Available at http://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S0301-603X2023000100009&nrm=iso

Rosanna, L. B. 2006. A Practical Guide to Focus-Group Research, J*ournal of Geography in Higher Education*, 30:3, 463-475. Available at: https://10.1080/03098260600927575

Scheltema, M., Meyer, F., Delport, M. & Gxotiwe, V. 2015. *Adding value to the South African maize value chain*. Bureau for Food and Agricultural Policy.

Schlebusch, G. 2002. Cognition and the language of learning in South Africa: A grade 10 Economics perspective, *The Qualitative Report*, 7(3). Available at http://www.nova.edu/ssss/QR/QR7-3/schlebusch.html

Slade, C., Baldwin, C. & Budge, T. 2016. Urban planning roles in responding to food security needs, *Journal of Agriculture, Food Systems, and Community Development*, 7(1), 33-48.

Stadlmayr, B., Trübswasser, U., McMullin, S., Karanja, A., Wurzinger, M., Hundscheid, L., Riefler, P., Lemke, S., Brouwer, I. D. & Sommer, I. 2023. Factors affecting fruit and vegetable consumption and purchase behavior of adults in sub-Saharan Africa: A rapid review [Systematic Review], *Frontiers in Nutrition*, 10. Available at https://doi.org/10.3389/fnut.2023.1113013

Temple, N. J., Steyn, N. P., Fourie, J. & De Villiers, A. 2011. Price and availability of healthy food: a study in rural South Africa, *Nutrition*, 27(1), 55-58. Available at https://doi.org/10.1016/j.nut.2009.12.004

The World Bank Group, 2020. *Poverty & Equity Brief. Sub-Saharan Africa: South Africa*. Available at https://databank.worldbank.org/data/download/poverty/33EF03BB-9722-4AE2-ABC7-A

UNEP, FAO & UNDP. 2023. *Rethinking Our Food Systems: A Guide for Multi-Stakeholder Collaboration. Nairobi*. Available at https://www.undp.org/sites/g/files/zskgke326/files/2023-06/esf_rethinking-food-systems_dtp04_04_med-res.pdf (accessed 4 December 2023).

United Nations Department of Economic and Social Affairs, Population Division, 2022. *World Population Prospects 2022: Summary of Results*. UN DESA/POP/2022/TR/NO. 3.

Van Rensburg, W. S. J., Van Averbeke, W., Slabbert, R., Faber, M., Van Jaarsveld, P., Van Heerden, I., Wenhold, F. & Oelofse, A. 2007. African Leafy Vegetables in South Africa, *Water SA*, 33(3): 317-326.

Venskutonis, P. R. & Kraujalis, P. 2013. Nutritional Components of Amaranth Seeds and Vegetables: A Review on Composition, Properties, and Uses, *Comprehensive Reviews in Food Science and Food Safety*, 12: 381-412. Available at https://doi.org/10.1111/1541-4337.12021

Vermeulen, H., Meyer, F. & Schönfeldt, H. C. 2023. A basic healthy food basket approach to evaluate the affordability of healthy eating in South Africa and Kenya [Original Research], *Frontiers in Sustainable Food Systems*, *7*. Available at https://doi.org/10.3389/fsufs.2023.1181683

Vorster, I. H. J., Van Rensburg, J. W. S. & Venter, S. L. 2007. The importance of traditional leafy vegetables in South Africa, *African Journal of Food, Agriculture, Nutrition and Development*, 7: 4-13.

Weinberger, K. & Msuya, J. 2004. Indigenous Vegetables in Tanzania: Significance and Prospects, *Technical Bulletin*, 31, 1-600.

Dr Nokuthula Vilakazi is currently a lecturer at Durban University of Technology and postdoctoral researcher for the African Research Universities Alliance Centre of Excellence in Sustainable Food Systems (ARUA-SFS). Her research interests include exploring the potential of neglected and underutilised species for food and nutrition security, as well as the potential use of non-conventional food processing techniques to improve the nutritional quality of the neglected and underutilised species. Previously she was a lecturer in the Department of Nutrition at the University of Pretoria (UP) and a project coordinator for Future Africa's Early Career Research Leader Fellowship at UP.