



Indigenous crops and cultural dynamics in the markets of Nakuru County, Kenya

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ABSTRACT

Based on ongoing research conducted in Nakuru County, Kenya, the paper analyses food markets in the region. It interrogates the local foodscape investigating the nexus between food supply's commodity consistency and local ethnic diversity. Analyzing the role of Indigenous Crops in the market, it points out ethnic diversity is not straightforwardly a factor for market expansion and diversification. Rather, it shows that merchandise standardization and reduction answer to commercial and infrastructural needs of the sellers as well as a conservative attitude in consumers' taste and consumption attitude.

1. Introduction

Are migration and ethnic diversity always a factor for food market diversification? Are they always factor for the valorisation of traditional products? These are the two main questions the paper addresses based on the results of a field research conducted in the markets of Nakuru County, Kenya. It highlights how the ethnic plurality of local area does not lead to the enrichment of the food products in the local markets, but rather to a standardization of the food supply. In particular, the authors underline how in the Nakuru County the presence of ethnic diverse population transforms the market into a neutral zone, where people purchase mostly the main ingredients of their diet, drawing instead from other formal and informal networks and self-production to procure the most culturally significant products of their diet.

The article begins with an introduction of the current debate in food and economic anthropology concerning the effects of two divergent dynamics in the market: globalization, as a homologating factor, and cultural diversity, as an element that enriches the diversity in the products. It follows with the presentation of the results of the ethnographic research carried out in Nakuru County in 2018. The foodscape of the markets of the region is described to highlight how ethnic diversity does not boost the richness of food markets, rather it converts them into a neutral zone populated with staple foods.

The authors have contributed in various ways to the writing of this paper. MFF and DMZ carried out the market survey in collaboration with Slow Food Kenya. MFF analysed and modelled the socio-cultural dynamics of the markets and DMZ documented and analysed the food

products supply; MFF coordinated the editing of the first draft, in particular by developing paragraphs 1, 2, 5 and 6; DMZ has developed paragraphs 3, 4 and the analytical apparatus of graphs and tables. The final draft of the article has been edited by MFF.

The names of the products in English are shown in the text. Furthermore, all the interview passages, of which the original was in one of the local languages, have been translated and indicated in English.

2. Market development and ethnic diversity

The ethnographic reality of a market lies in between a dichotomy: on the one hand market defines the social institutions for the exchange of goods (market); on the other hand, it refers to the physical places and the precise moments in which exchanges are carried out (marketplace). As Stuart Plattner (1989) suggests: "a market can exist without being localized in a marketplace, but it is hard to imagine a marketplace without some sort of institutions governing exchanges." Thus, once the ethnographic lens is pointed at a marketplace, the reasoning should go beyond the apparent contradiction and embracing the "set of social institutions, social actors, property rights, products, transactional relationships, trade practices, and cultural meanings framed by a wide variety of factors including, but not limited to, 'purely economic' or 'market' forces" (Bestor 2001) they embody. In this endeavour, the analysis of the cultural dynamics that affect the selection and exchange of goods appear a privileged objects of analysis able to shed light on the overall complexity (Law and Mol 2002) that underpins the everyday life of a marketplace (Colloredo-Mansfeld 2005; Narotzky 2005; Mayer 2005; Elyachar 2005; Rankin 2004). In

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particular it highlights the connection between everyday practices, cultural identity (both individual and collective), economic choices, and food consumption (Hull 2016; Sutton 2016; West 2016) in an overall context of profound change.

There is a current assumption in the debate in the social sciences concerning markets. It links local ethnic diversity to the proliferation and diversification of food products traded in the marketplaces. This assumption is rooted in a long-term history, which unfolds from the narratives of cities and provinces which populate the literature: From the tales of Tahican, Quengianfu, and Anbalet Mangi narrated by Marco Polo (1982), to the stories of the great discoveries in the sixteenth-century (e.g. Pigafetta 1956; Scortecci 1936); from the most recent tales of explorers (e.g. Fairhead 2003), to the imagination of exotic places described by great contemporary writers (e.g. Calvino 1993; Terzani 1998). This assumption is also strictly connected to the ethnography of large and small markets, from Turin (Black 2012) and Cairo (Elyachar 2005) to those of rural areas of Nigeria (Okere 1983) and Nepal (Rankin 2004), which conveyed the idea that the marketplace is a meeting place for cultures, and this encounters straightforwardly lead to merchandise diversification and expansion.

This assumption has taken a prominent place in the public debate connected with the issue of migration. Contemporary global ethnoscape (Appadurai 1996) is distinguished by massive migrations that are mobilizing people within the countries and internationally due to conflicts or strong economic imbalance (Zanfrini 2018). Together with these phenomena, which mostly impact the lower and medium strata of the society, already in the '90s, Bauman (1998) pointed out the intensification of mobility among more affluent social groups. Twenty years later, the contribution still draws attention to the role of social elites, as well as highlights the overall social complexity laying behind migration. Thanks to mobility, the global ethnoscape is transforming and, with it, knowledge and ecosystems are hybridizing (Pieroni and Vandebroek 2009) making multiculturalism central to the political agenda (Fontefrancesco, 2012), and having food markets enriched with new products (Abbotts 2016; Domingos et al. 2014), as well as novel foodways (see Mata Codesal 2010; Park 2017). Thus, migration seems a major social force that is expanding the local foodscape and the array of products traded every day, and a commonly used proxy of this change is the introduction in the marketplace of plant species that can be ascribed to the category of Indigenous Crops (hereafter ICs) specifically linked to the dietary habits of some of the ethnic groups that compose the local ethnoscape.

The ICs are defined in the literature as wild and cultivated species and ecotypes spread in particular areas of the world but globally rare, whose current production and consumption are limited relative to their economic and dietary potential (Gruere et al. 2007). It is estimated that in the African continent 539 vegetables (greens, cereals, and legumes) and 645 fruit belong to this category (Padulosi 2017). Nevertheless, if on the one hand, the United Nations has seen in them a tool for the achievement of the Millennium Development Goals, in particular, to fight against hunger and to strengthen environmental sustainability, on the other hand, there are several constraints concerning their production, marketing and consumption on large scale (Will 2008). Over the last two decades, a growing interest for ICs has been registered both in the scientific and public sectors. In particular, the marginalization of these products at the local level has been investigated (Petrini 2009; Shiva 2000, Shiva, 2012), linking together the issue of biodiversity loss to that of the erosion of cultural diversity due to the imposition of globalized cultural models and products (AaVv, 2011; Padulosi et al., 2002; Prescott Allen and Prescott Allen 1990). In the light of this emerging picture, which ties together several issues connected to local development, ICs appear to be an important proxy to understand the sociocultural changes that underpin the transformation of the market, and in particular the impact of migration and globalization. On the one hand, these products see at a local level their space contended for and lost in the face of the introduction of new commercial, international

species. On the other hand, the presence of ICs in the market is sustained by migrants who look for them because “they facilitate the construction of discrete migrant subjectivities and group identities by both inclusion – in that, they reaffirm relations between migrants – and exclusion – in that, others in the host region do not share migrant tastes.” (Abbotts 2016).

The scientific debate, therefore, offers a clear key to interpret the role of the ICs in the marketplace. Conversely, it implicitly opens unanswered questions about the interpretation of their absence in a highly plural context; questions that call into question the practices of production, exchange and consumption as well as the materiality of the marketplace. The paper tackles this issue basing the reflection on a research conducted in Nakuru County.

3. The research

The paper is based on the research carried out in the Nakuru County, in the Kenyan Rift Valley (see Fig. 1) between 2018 and 2019 as a part of the broader research project SASS – Sustainable Agri-Food System Strategies funded by the Italian Ministry of Education, University, and Research. The study aimed at investigating and analysing the social structure and dynamics of the food market and the role played by Indigenous Crops within it (Corvo and Fontefrancesco, 2018).

The research spanned between 2017 and 2019 (Fontefrancesco et al., 2020). The design of the research has been informed by an analysis of the existing literature on ICs in Kenya aimed at identifying the most widespread species in the Country with particular attention to the ones produced, harvested and consumed in the Nakuru County. The literature identifies a limited sample of food products of animal origin, being the majority of the domestic breeds linked to indigenous communities (Barstow and Zocchi 2018). However, the largest part of the ICs in the region belongs to the plant kingdom. In Kenya, more than 800 food plants have been documented, of which 210 are cultivated or wild vegetables (Maundu et al. 1999). In Nakuru County, the role played by leafy vegetables, commonly defined as African leafy vegetables or Indigenous leafy vegetables, is highlighted. The following ICs are identified as the most relevant: *Amaranthus* sp., *Basella alba* L., *Brassica carinata* A.Braun, *Cajanus cajan* (L.) Millsp., *Cleome gynandra* L., *Corchorus olitorius* L., *Cucurbita* sp., *Solanum nigrum* L. e *Vigna unguiculata* (L.) Walp. (Shackleton et al. 2009). In particular, the County is characterized by the presence of the following local species: *Crotalaria brevifida* Benth., *Crotalaria ochroleuca* G.Don, and *Urtica massaica* Mildbr. (Maundu and Imbumi 2003).

In Kenya, ICs consumption has declined substantially from the pre-colonial period to the end of the 20th century (Maundu 1997). National agricultural policies aimed at implementing crops for the export have led to the reduction in terms, both of consumption and production, in particular of the so-called African leafy vegetables (Irungu et al., 2006). Only since the 1990s, the trend has changed. The government's promotion of traditional vegetables has renewed the general public's interest in the nutritional properties, and the commercial potentials of these products. In so doing, it supported the creation of new market opportunities, such as supply contracts between small producers and players in large-scale retailing (Abukutsa-Onyango et al., 2007; Irungu et al., 2006; Ngugi et al. 2007). Despite this positive trend and opportunities, ICs are struggling in the market, dampened by the fragmentation not only of the value chain, but also by the very structure of food demand (BMI Research 2018).

Market research was conducted in 2018 in collaboration with Slow Food Kenya. It investigated ethnographically 19 markets of the Nakuru County that are mapped in Fig. 2 and listed in Table 1 (Fontefrancesco and Zocchi, 2019). The markets were chosen to cover the entire region and the different typologies of markets present in the area.

Field research was divided into three main steps: inspection of the market, mapping of the offer and collection of information relating to the products. The focus of the research was on the traditional markets, while supermarkets were analysed as a local verification for the on-

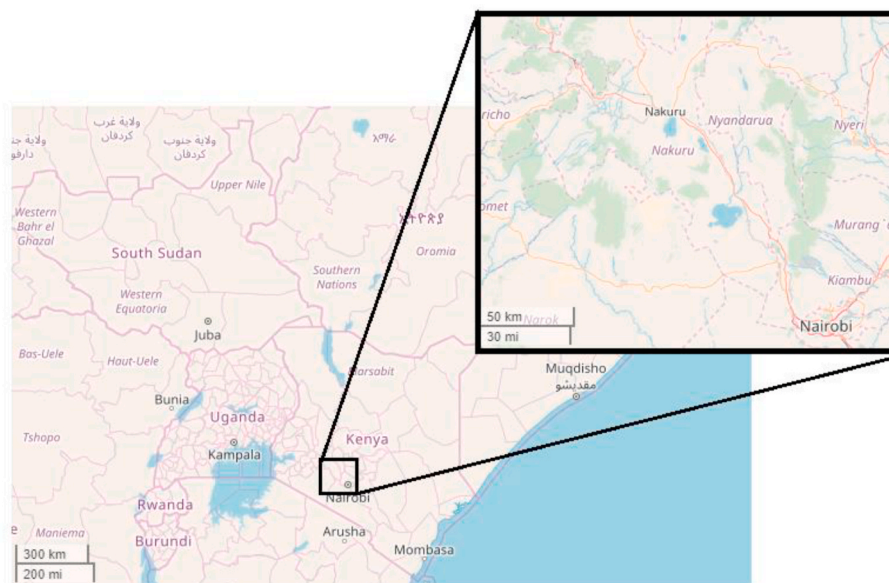


Fig. 1. Localization of Nakuru county.

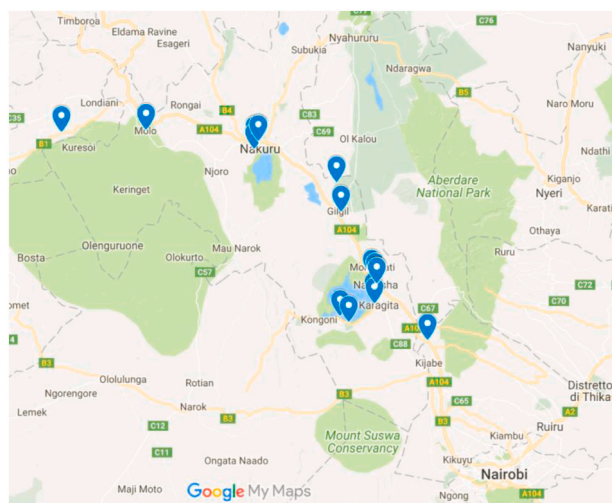


Fig. 2. Localization of the analysed market within Nakuru county.

going transformation. The analysis looked mainly at fresh products and artisanal processed products. During the research, the availability of ICs, in particular, those of plant or fungal origin, and of their processed products identified either beforehand through the literature review or directly in the field, have been assessed.

The research was carried out through semi-structured interviews with traders and market managers. The interviews were also aimed at understanding the structure and dynamics of the markets, paying attention to the availability and diversity of supply, trade, purchasing, and consumption practices. The background of sellers and consumers has been further investigated through the life history method (Bertaux 1999).

4. The food market in Kenya and in Nakuru County

Kenya is one of the ten largest countries and national economies in Africa, and the main one of the East African Community (I.M.F. 2018). It has met a fast and steady demographic growth since 2000, reaching 47.5 M people in 2019 in 2016 and life expectancy at birth scores 65 years while 40% of the population is under 15 (U.N. 2017). The national

economy still relies heavily on agriculture in 2016 generating 35.6% of gross domestic product and employing 60% of the workforce. However, the nation is facing fast urbanization, with an annual growth of 5% of the urban population and 33% of the total population living in urban centres (U.N. 2017). The demographic trend is fuelling the economy. In the 2012–2016 period, Kenyan GDP grew 39.9% reaching the total amount of 70.53 billion US dollars (2017).

The agricultural and agri-food sectors have gradually changed due to an increasing industrialization process (BMI Research 2016; Hakizimana et al., 2017; Sanchez et al. 2009; Snipes and Gitonga 2014). This new green revolution was driven by the production of cash crops for the global market, such as tea, coffee, tropical fruit, tobacco, and spices. A pivotal role in the agriculture sector has been played by the flower industry (Dolan 2007), whose products are mostly sold in Europe and India. In this context of social and economic growth, internal food market expanded, with an average annual rate of over 10% in the last five years (BMI Research 2016, BMI Research, 2018). This figure reflects the rise in food demand, largely thanks to the expanding economic possibilities of the urban middle class (BMI Research 2016, BMI Research, 2018). This datum couples with a deep transformation concerning the places and modes through which food is purchased. While organized food retail industry expanded led by domestic players, such as Nakumatt, Uchumi, Tuskys and Naivas (BMI Research 2016), and turned into a primary source for urban middle and high classes and foreigners living in the country, small local shops, traditional markets and peddlers respond to the needs of lower urban classes as well as communities in the rural and peri-urban areas (Lubaale and Nyang'oro, 2013).

The last decade has corresponded with a progressive transformation of the Kenyan food market. While the agri-food market is still very fragmented, a network of exchanges, marked by strong mobility of goods, has emerged across the Country. Specifically, in urban areas, demand for regional products, such as camel milk (Musinga et al. 2008), has substantially grown. New urbanized middle classes who migrated from the marginal rural areas of the Country are the ones who mainly purchase those products. In spite of this, local and traditional products, and ICs still have a marginal place in the market, even in peri-urban and rural areas.

Nakuru County is situated in the Rift Valley. It borders eight other counties namely, Baringo to the North, Laikipia to the North East, Nyandarua to the East, Kajiado to the South, Narok to the South West with Bomet and Kericho to the West. The County covers an area of

Table 1

List and characterization of the analysed markets.

Name	Location	Coordinates	Type of market
Chepseon Market	Chepseon Village, Kipkelion District, Nakuru County	−0.25621, 35.47766	Retail
Delamere Farm Shop	Naivasha Town, Naivasha District, Nakuru County	−0.693, 36.41998	Supermarket
Gilgil market	Gilgil Town, Naivasha District, Nakuru County	−0.49893, 36.32683	Retail
Gitare market	Gitare Village, Naivasha District, Nakuru County	−0.40949, 36.31187	Retail
Jamaa supermarket	Naivasha Town, Naivasha District, Nakuru County	−0.71772, 36.43291	Supermarket
Kamere landing beach	Kamere Village, Naivasha District, Nakuru County	−0.81562, 36.32404	Wholesale/ Retail
Kamere market	Kamere Village, Naivasha District, Nakuru County	−0.83367, 36.35004	Retail
Karagita landing beach	Karagita village, Naivasha District, Nakuru County	−0.76199, 36.42562	Wholesale/ Retail
Karagita market	Karagita village, Naivasha District, Nakuru County	−0.77747, 36.42768	Retail
Kinare market	Kinare village, Kiambu county	−0.88916, 36.589	Wholesale
Molo City Market	Molo Town, Molo District, Nakuru County	−0.24993, 35.73448	Wholesale
Naivas supermarket	Naivasha Town, Naivasha District, Nakuru County	−0.7163, 36.43567	Supermarket
Naivasha municipal market	Naivasha Town, Naivasha District, Nakuru County	−0.71691, 36.43532	Retail
Naivasha Wholesale Market	Naivasha Town, Naivasha District, Nakuru County	−0.71672, 36.43624	Wholesale
Nakuru wholesail and retail market	Nakuru Town, Nakuru District, Nakuru County	−0.2852, 36.07709	Wholesale/ Retail
Ponda mali market	Nakuru Town, Nakuru District, Nakuru County	−0.30808, 36.0625	Retail
Top market	Nakuru Town, Nakuru District, Nakuru County	−0.28466, 36.07485	Retail
Tuskys Supermarket	Naivasha Town, Naivasha District, Nakuru County	−0.70379, 36.4295	Supermarket
Nakumatt, WestSide Mall	Nakuru Town, Nakuru District, Nakuru County	−0.28721, 36.0636	Supermarket

7235.3 km² and is located between longitudes 35° 28' and 35° 36' East and latitudes 0° 12' and 1° 10' South. It lies about 2100 m above sea level.

It is a cosmopolitan region with a population of about 500.000 people. It presents an ethnoscape dominated by Kikuyu, Maasai communities, originating from the region, and other ethnic groups (e.g. Kalenjin, Luhya, Luo, Kamba) (Sassi and Zucchini 2018). The multi-cultural milieu is the result of the internal mobility that moved people from all across Kenya to the region to work in the industrial, commercial or administrative activities of Nakuru and other cities, or to work on farms, in particular, greenhouses, in Naivasha.

The economy of the County is mostly based on tourism and agriculture. Nakuru is the fourth largest city in Kenya with an economy heavily based on manufacture and the third sector. The surrounding area, though, is known for its agriculture, characterized by a wide network of small farms and also vast agricultural enterprises. Among the most cultivated crops in the County are wheat, barley, maize, beans and vegetable that provide the primary raw material for the food manufacturing industries in Nakuru (Ogeto et al., 2013). However,

flower farming is the most known agricultural production of the areas whose goods, mostly produced around Lake Naivasha, are exported to Asia and Europe and represented a major driver for the local economy (Adeola et al. 2018; Bolo 2008). Despite those levels of economic development, the County still presents high poverty and unemployment levels (Sassi and Zucchini 2018).

This figure is reflected in the conspicuous and widespread justification of formal and informal markets and the livelihoods economy adopted by local communities that combine trade, self-production, and consumption.

5. The foodscape of the markets in the Nakuru County

The research outlined fundamental aspects of the foodscape of Nakuru County. 155 food products were identified and documented during the food scouting activities carried out in the markets. In the market of Nakuru County there is a greater diversity of plant products (111) followed by processed foods (27), and animal products (17). From a quantitative point of view, the most important are fruits (30), legumes (26) and leafy vegetables (15). The representativeness of these categories is, however, less relevant if we look at their frequency (see Table 2). Table 3 shows that only two species of fruits, 5 legumes, and 3 leafy vegetables have a significant occurrence, being documented in 10 of the 19 markets.

Thus, the agri-food market is dominated by a limited number of products mainly cash crops. The most common products in the area are: potatoes (16), among tubers, red onions (16), tomatoes (16) and cabbages (13), among vegetables, finger millet (13), rice (12) and maize (10), among cereals, kale (14) and amaranth leaves (13), among leafy vegetables and, finally, bananas (12) and mangoes (8) within the fruit category.

The product offer does not change significantly according to the geographical location of the market. Some differences can be found looking at the type of market and the context where it is placed. Differences concerned the number of products exchanged, the order of commercial importance and the origin of the products. In the wholesale marketplaces of urban and peri-urban areas, the food products traded in greatest quantities are cabbage, tomato, mango, banana, and maize. With regard to their origin, it is possible to highlight a double trend: vegetables, tubers, and cereals are produced locally while most of the fruit products come from other Kenyan counties. On the other hand,

Table 2

Most frequent vegetables products in the markets.

Scientific name	Product name	Category	Frequency
<i>Solanum tuberosum</i> L.	Potato	Roots and tubers	16
<i>Allium cepa</i> L.	Red onion	Vegetables	16
<i>Solanum lycopersicum</i> L.	Tomato	Vegetables	16
<i>Brassica carinata</i> A.Braun	Collard green	Leafy vegetables	14
<i>Ipomoea batatas</i> (L.) Lam.	Sweet potato	Roots and tubers	14
<i>Colocasia esculenta</i> (L.) Schott	Taro	Roots and tubers	14
<i>Amaranthus</i> sp.	Amaranth	Leafy vegetables	13
<i>Brassica carinata</i> A.Braun	Cabbage	Vegetables	13
<i>Eleusine coracana</i> (L.) Gaertn.	Finger millet	Grains and cereals	13
<i>Lablab purpureus</i> (L.) Sweet	Lablab bean	Legumes	13
<i>Lens culinaris</i> Medik.	Lentil	Legumes	13
<i>Pisum sativum</i> L.	Pea	Legumes	13
<i>Musa</i> sp.	Plantain	Fruits	12
<i>Oryza sativa</i> L.	Rice	Grains and cereals	12
<i>Beta vulgaris</i> L.	Swiss chard	Leafy vegetables	12
<i>Solanum nigrum</i> L.	African nightshade	Leafy vegetables	11
<i>Musa</i> sp.	Sweet banana	Fruits	11
<i>Zea mays</i> L.	Maize	Grains and cereals	10
<i>Mangifera indica</i> L.	Mango	Fruits	8

Table 3

ICs and their frequency in the markets.

Scientific name	English name	Category	Frequency
<i>Colocasia esculenta</i> (L.) Schott	Taro	Roots and tubers	14
<i>Amaranthus</i> sp.	Amaranth	Leafy vegetables	13
<i>Eleusine coracana</i> (L.) Gaertn.	Finger millet	Grains and cereals	13
<i>Lablab purpureus</i> (L.) Sweet	Lablab bean	Legumes	13
<i>Cucurbita</i> sp.	Pumpkin	Vegetables	13
<i>Solanum nigrum</i> L.	African nightshade / Black nightshade (Allochthonous)	Leafy vegetables	11
<i>Vigna unguiculata</i>	Cowpea	Legumes	9
<i>Cajanus cajan</i> (L.) Millsp.	Pigeon pea	Legumes	9
<i>Vigna unguiculata</i> (L.) Walp.	Cowpea leaves	Leafy vegetables	7
<i>Solanum nigrum</i> L.	African nightshade / Black nightshade (Indigenous)	Leafy vegetables	6
<i>Phaseolus lunatus</i> L.	Broad bean	Legumes	6
<i>Cucurbita</i> sp.	Pumpkin leaves	Leafy vegetables	6
<i>Sorghum bicolor</i> (L.) Moench	Sorghum	Grains and cereals	5
<i>Urtica massai</i> Mildbr.	Stinging nettles	Leafy vegetables	4
<i>Corchorus olitorius</i> L.	Jute mallow	Leafy vegetables	3
<i>Symphytum</i> × <i>uplandicum</i> Nyman	Russian comphrey	Leafy vegetables	3
<i>Basella alba</i> L.	Malabar spinach	Leafy vegetables	2
<i>Cucurbita</i> sp.	Pumpkin leaves	Leafy vegetables	2
<i>Pennisetum glaucum</i> (L.) R.Br.	Pearl millet	Grains and cereals	2
<i>Crotalaria brevidens</i> Benth.	Slender leaf	Leafy vegetables	2
<i>Cleome gynandra</i> L.	Spider plant	Leafy vegetables	2
<i>Annona senegalensis</i> Pers.	Wild custard apple	Fruits	2
<i>Citrullus lanatus</i> (Thunb.) Matsum. & Nakai	Egusi melon	Fruits	1
<i>Brassica carinata</i> A. Braun	Ethiopian mustard	Leafy vegetables	1
<i>Flacourtia indica</i> (Burm.f.) Merr.	Governor's plum / Indian plum	Fruits	1
<i>Coccinia grandis</i> (L.) Voigt	Ivy gourd / Scarlet gourd	Vegetables	1

markets located in rural areas tend to focus the offer on a smaller number of locally grown products.

In the urban and rural retail markets, small-scale vegetable products complement cash crops offer. Among them, there are traditional leafy vegetables and fruit products (wild and cultivated) including banana passion (*Passiflora mollissima* (Kunth) L.H.Bailey), egusi melon (*Citrullus lanatus* (Thunb.) Matsum. & Nakai), ivy gourd (*Coccinia grandis* (L.) Voigt), mountain paw paw (*Vasconcellea pubescens* A.DC.). It should be noted that the amount, as well as the frequency of the aforementioned products, are limited.

The supply documented in the traditional market is almost fully available in supermarkets and further supplemented with exotic products. The supply of vegetables and fruit is enriched by the inclusion of products of foreign origin and provenance. Several vegetables frequently used in Indian and Chinese cuisine has been recorded during the fieldwork.

Leafy vegetables have a central position both for the present and for the depth of the offer. A similar situation has been observed for legumes and cereals. The supply consists of traditional species such as (*Vigna*

unguiculata), lablab bean (*Lablab purpureus* (L.) Sweet) and pigeon pea (*Cajanus cajan*), within legumes, finger millet (*Eleusine coracana* (L.) Gaertn.), pearl millet (*Pennisetum glaucum* (L.) R.Br.) and sorghum (*Sorghum bicolor* (L.) Moench) among cereals. A range of vegetable products that are not available in traditional markets complements the offer in the supermarkets.

On the contrary, the supply of processed food in the traditional market is limited as are the methods used to preserve them. Cereal flours and leafy vegetables flours, produced by drying and milling them, are the most common goods. Fermented products instead are almost absent from the markets of the County. The only one documented during the fieldwork has been *busaa* that is a fermented beverage based made with germinated millet seeds. In the supermarket stores, on the other hand, the variety of processed products is greater, especially for flours and substitute goods made with cereals. According to the informants and interviewees, the differentiation of the supply of these categories aims to meet the multi-ethnic demand with several cereal mixtures made with one or more grain species.

In the surveyed markets, 27 IC species belonging to six different product categories were recorded. Most of them are leafy vegetables (12), legumes (4), and cereals (4). The offer of traditional fruits, greens and tubers were instead less diversified.

Those products are however limited in their diffusion and the offer is very standardized. Of the 27 documented products, only 22.2% of them have been documented in more than 10 markets. Among the most frequent are taro (*Colocasia esculenta* (L.) Schott), amaranth (*Amaranthus* sp.), finger millet (*Eleusine coracana*), lablab bean (*Lablab purpureus*), pumpkin (*Cucurbita* sp.) and African nightshade (*Solanum nigrum*).

This trend is even more evident if we take into account the data regarding the frequency of leafy vegetables. Of the 12 documented products, the most common are African nightshade (introduced species) and amaranth (cultivated species). These species have been identified almost in all the surveyed markets both the traditional ones and supermarkets. From a first analysis, the African nightshade appears to be the most widespread traditional leafy vegetable in the regional markets of Nakuru.

The availability and frequency of the other leafy vegetables are much more limited. In particular, jute mallow (*Corchorus olitorius* L.), Malabar spinach (*Basella alba*), spider plant (*Cleome gynandra* L.) and Russian comphrey (*Symphytum* sp.) have been recorded in retail markets and, in few cases, in wholesale markets located in rural areas. During the interviews, it has emerged that the lower occurrence of these species is due to a lack of knowledge of the product and the reluctance of Kenyan consumers to introduce new foods into their diets. The consumption of certain ICs, such as slenderleaf (*Crotalaria brevidens*), jute mallow and spider plant, is also linked to specific ethnic groups.

In addition to that, the marketing of such products is affected by their limited shelf life and the limited use of preservation techniques. Leafy vegetables are usually dried and grounded into a powder. This method is only used to preserve certain species such as amaranth and stinging nettles (*Urtica massai*).

To complete the analysis of the role played by the ICs in the markets, the link between the diversity of supply and the type of market should be considered. Fig. 3 shows the trends. In general, in the traditional market, the category with the broadest variety of products is that of leafy vegetables. This datum differs from what it has been recorded in the supermarket where cereals and legumes are the most common ICs.

As regards leafy vegetables, there are significant differences between wholesale and retail markets concerning the supply. In almost all the wholesale markets, only three products were recorded: amaranth, African nightshade, and cowpea leaves. On the contrary, the retail markets showed a wider range of product. In this case, substantial differences have been documented between rural and urban areas. At the general level, there is a great diversity of leafy vegetables. In rural areas, it has been possible to record several wild species. On the contrary, in the markets located in the peri-urban areas, the diversity of products was

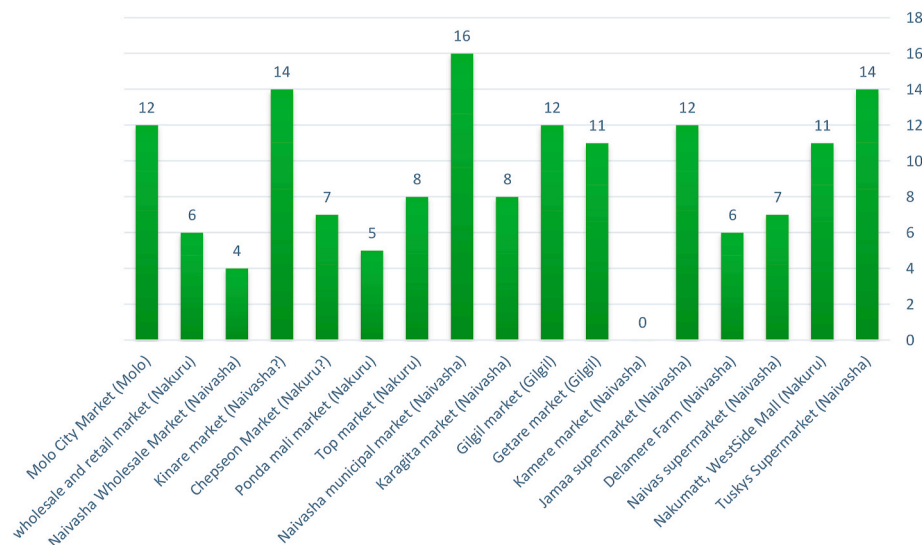


Fig. 3. Number of ICs in the analysed markets.

minimal being amaranth and African nightshade the most common species.

The offer of ICs in the supermarkets is very similar to that recorded in traditional marketplaces. As mentioned above, the main differences are represented by a greater variety of cereals and legumes, many of which are not traded in traditional markets. Among leafy vegetables, the supply includes all products sold in traditional wholesale markets. However, diversity is smaller than in retail rural and urban markets.

6. Causes of marginalization

In spite of the gastronomic richness in the use of ICs, which has been documented at a domestic level in the Nakuru county (Ellena 2018), and more generally in the nation (Barstow and Zocchi 2018), the research highlights a standardized foodscape in the markets of the Nakuru County. This datum does not appear to be the result of policies or economic initiatives promoted by international market players, and it strongly clashes with the expectations linked with a strongly culturally diverse area. Thus, moving away from common interpretative assumption concerning market trends, the research highlights how in this marginalization, the cultural diversity plays a central role together with the infrastructural one in motivating the entrepreneurial choices of marginalizing ICs in the market.

Food consumption is deeply conditioned by ethnicity both in terms of the choice of ingredients and their preparation. The research highlighted ethnicity is even more important than the place of residence or the census of belonging in leading individual's gastronomic choices, by limiting the consumption of vegetables, as in the case of the Maasai (Fontefrancesco and Lekanaya, 2018, Volpato 2018), by fostering the use of fresh leafy vegetables, among the communities of farmers and hunter-gatherers (Maundu 1997), or fish, as in the case of Luo, or fermented plant-based products, as in the case of Kikuyu (Kamau 2013; Sassi and Zucchini 2018). All the different groups present specific gastronomies that are fostered at home as well as in the public sphere. These customs are rooted in an individual and collective tradition that feeds identity processes that are embedded into daily practice and in the oral narrative of the past of ethnic groups and their gastronomy (Jansen et al. 1987; MacWilliam et al. 1995). This cultural dynamic affects the gastronomic demand on which the domestic economy of households is based. During the interviews, sellers confirmed this datum highlighting the fragmentation of demand and the strong dependence on the ethnic and cultural background. To use the words of an informant, a trader in the Nakuru market: "People eat what they are already used to eating [...]"

not try other products". Thus, the use of ICs is the one that mostly expresses and identifies the ethnic difference, and the informants suggested a strong resistance to change their habits opening up to new products and preparations.

Food supply in the local markets is deeply affected by this ethnic distinction, marginalizing ICs in favour of cash crops such as potatoes, onions, tomatoes, cabbage, and carrots, which are among the most widespread and common goods in urban and rural markets. When ICs, such as leafy vegetables, grains, or traditional processed foods are widely spread in a market is because the area is densely populated by a particular group whose foodways hinge around these products or the use of the products is shared by a plurality of different ethnic groups (Sassi and Zucchini 2018). This particular configuration of the foodscape is the result of precise entrepreneurial choices taken by the market sellers which can be summarized through the words of one of the sellers of the Top Market in Nakuru: "I sell what they ask me; not necessarily what I like or what I would like for my daughter."

Thus, demand drives supply. This fact is accentuated by the infrastructural configuration of the marketplaces. Due to the lack of facilities, especially storage and refrigeration technology, the choice of products also responds to the actual possibility of long-term storage of goods. ICs are mostly fresh products with a short shelf life. A seller in Molo explained the choice in these terms: "Sir, why should I try to sell something I am not sure to sell? Maybe I can gain more money because I sell ... Yes! But I can also lose money because I have to throw everything away because spoiled ... So better be sure to have something at the end of the day ..." Many of the shopkeepers/vendors pointed out that it was their choice not to sell such products even if they were aware of a possible demand from the local population because they were not sure the ICs would last long enough.

ICs are mostly marginalized in the rural area. Informants pointed out, similarly with other causes, one reason is the poor infrastructural condition of the marketplace and the limited public that constrains the possibilities of a food business. Moreover, self-production further reduces the demand for these products. Families, in fact, use part of their kitchen gardens to produce the ICs they mostly need. As a farmer from Gilgil commented: "I grow them at home. Why should I buy them at the market?". For the rest, as in the case of urban dwellers, they use other channels, mostly informal, for purchasing ICs. Small orders are made to relatives or trusted people who live in rural areas. They are made by phone, paid through M-Pesa service (money transfer via mobile phone), and transported to their home by bus or taxi (e.g. *matatu* and *boda-boda*). These practices of informal trades are mostly documented in the rural or peri-urban areas.

In urban areas, marketplaces have a more central role. ICs are more a common part of the market foodscape. The combination of better infrastructure in the marketplaces that allows better storage and conservation of the goods, as well as a larger and faster market that offer a better opportunity for rapid sale also of ICs, and the limited possibilities for self-production, support their presence (Ruel et al. 2005). Moreover, in the urban centre, ICs can be easily found in the supermarket. There, the presence is the result of precise commercial policies of the stores aimed at fully meeting all needs of all their customers, despite their ethnic background.

7. Conclusions

Is it ethnic diversity a driver of expansion of the market? Not always. The paper suggests decoupling ethnic diversity and food variety in the market.

Ethnic diversity does not automatically lead to an introduction of ICs in the marketplace; conversely, it can lead to their marginalization. The research suggests behind the marginalization of ICs it seems it does not lay any international intervention, rather it is the effect of an on-going phenomenon that links together individual's cultural needs with infrastructural limitations in making the market into a neutral zone populated by a limited array of products, widely shared and accepted by a multi-ethnic community.

This configuration suggests market, also in a context of development, plays an important role within the domestic economy. However, it is not the place where individuals look for their identity products, because, for this purpose, people may look in other direction and to other channels. Thus, the market is a fundamental platform on which individuals base their everyday subsistence but is not the main social platform for their cultural reproduction and integration.

The centrality of the ethnic background in shaping individual's taste, as well as the conservative attitude linked to it open new reflection on the sociocultural meanings of a market, and above all to the possibility of its development. In particular, the actual role market and ICs can play to foster cultural integration, and the practices that should be implemented to move forward in that direction are in need of further explorations.

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