Sustainable Consumption, the Middle Classes, and Agri-food Ethics in Brazil, China, and South Africa: **Trends, Practices, and Influences**

The Project Team:

Co-Investigators:

Professor Rita Afonso (Universidade Federal do Rio de Janeiro)

Professor Roberto Bartholo (Universidade Federal do Rio de Janeiro)

Professor Mike Crang (Durham University)

Dr Shari Daya (University of Cape Town)

Professor Bob Doherty (University of York)

Dr Fernando Fastoso (Hochschule Pforzheim)

Dr Hector Gonzalez-Jimenez (ESCP, Madrid)

Professor Dorothea Kleine (University of Sheffield)

Professor Cheryl McEwan (Durham University)

Dr Stefania Vicari (University of Sheffield)

Professor Guojun Zeng (Sun Yat-sen University)

Researchers:

Geetika Anand (University of Cape Town)

Cristine Carvalho (Universidade Federal do Rio de Janeiro)

Dr Kim Coetzee (University of Cape Town)

Dr Suzanne Hocknell (Newcastle University)

Daniel Kirby (University of Sheffield)

Dr Megan Lukas (University of Cape Town)

Dr Luiza Sarayed-Din, (Universidade Federal do Rio de Janeiro)

Longjie Wang (Sun Yat-sen University)

Rebecca Whitehead (University of Cape Town)

Dr Shuru Zhong (Sun Yat-sen University)

Principal Investigator:

Professor Alex Hughes (Newcastle University, UK)

Executive Summary

This research was funded by the UK's Economic and Social Research Council and conducted between 2018 and 2021. It places the spotlight on the growing middle classes in the global South and, given their increasing spending power, issues of ethics and sustainability regarding their food consumption choices, values, and practices. The burgeoning global middle classes suggest that consumption in the global South, the values it expresses, the changing food cultures and consequent environmental pressures are becoming ever more relevant and in need of critical research. The study identifies the current and potential roles of consumption in the global South in terms of addressing major global sustainability challenges in the food sector. It examines these issues in Brazil, China, and South Africa, offering comparisons of the potential of different drivers of sustainability in particular political, commercial and cultural settings. The cities of Rio de Janeiro in Brazil, Guangzhou in China, and Johannesburg in South Africa are used as case studies.

Objectives:

(i) To identify the different kinds of sustainable food consumption evident in the three countries, their historical and geographical influences, and their potential as levers for positive change.

(ii) To identify consumer influence in forms of sustainable food consumption, including forms intentionally linked to civic action as well as ordinary practices of food consumption involving sustainable actions.

(iii) To evaluate the cultural influences, trends, and technologies affecting sustainable consumption of food.

Key Findings:

Defining Sustainable and Ethical Food:

We found no single understanding of sustainable and ethical food within or between our three food contexts, though healthy, safe food was felt by most to be the basis of any kind of sustainable food system.

To be sustainable and ethical, food must at a minimum be nutritious, safe, desirable, and accessible, and produced in ways that do not make it harder to feed people in the future.

Sustainability and ethics are not only about organics or addressing climate crisis but involve everything from food safety to working conditions for farm workers, to healthy soils, zero carbon, strong local economies, reducing waste, robust local food cultures, and animal welfare and its role in preventing disease transmission. Sustainable and ethical food systems also need to be resilient to economic downturns or weather events and responsive to social, economic, and cultural issues.

Accessing and consuming sustainable and ethical food:

Middle class consumers in Brazil, South Africa and China display a current tendency to engage in sustainable consumption and curtailment behaviours. The intent to engage in the next 12 months in such behaviours is even more pronounced. These findings are consistent across all three countries.

Consuming home cooked and fresh foods seems to be a priority in all three countries. Interestingly, reducing food waste by, for example, using leftovers, are prevalent curtailment behaviours in all three countries.

Food practices and customs are local but are connected to increasingly globalised food systems.

Food consumption choices involving considerations of ethics and sustainability interplay in different ways with fear, altruism, convenience, memory, belonging, and aspiration.

Barriers to, and Opportunities for, Change:

Barriers:

More consumers reported wanting to eat ethical and sustainable foods than did so in practice. These foods were often perceived to be more expensive and only on sale in more affluent areas. Many participants felt high costs of these products to be prohibitive, seeing eating ethical and sustainable food as a lifestyle choice of those rich in time and money.

Participants reported struggling to balance and evaluate the conflicting and overlapping messages concerning how food is produced and processed and the implications of that for health and society. There are three main responses to this across all three case studies: resignation (whether expressed through indifference, powerlessness, or clinging to habitual practices); guilt about not being able to act correctly, and effort to try and eat well across all the different messages.

Many consumers mistrusted labels indicating 'ethical' and 'sustainable' products and struggled to juggle and prioritise the different demands on their pocket, time, and knowledges.

Knowing about a topic is not the same as being able to act on that knowledge. Diets are personal and are entangled with a consistent sense of self and of belonging. Participants reported difficulties in making positive changes to their food practices where notions of sustainable food conflicted with other considerations.

Opportunities:

There is an opportunity to prompt desire for sustainable and ethical foods by building on nascent awareness that personal health is entangled with the health of the environments in which food is produced. For example, in Guangzhou this opportunity is entangled with the concept of tian-ren-he-yi (the unity of people and nature).

Whether for pleasure, family health, traditional cultures, climate crisis, labour rights, food in all its guises is in some way about care. There is an opportunity to harness people's desire to care by supporting the availability of environmentally sustainable products such as organics to all communities, for example through buying co-operatives or public procurement.

There is an opportunity for food system actors (companies, government, civil society) to co-create transparent messaging enabling consumer/citizens to make dietary choices that align with their desire to care for themselves and others.

There is a need for joined up policy and renewed transparency on the operation and regulation of food systems from farm to post-consumer 'waste'. This is essential to overcome the feelings of powerlessness and distrust. Across all three cities some participants felt it was the responsibility of government to use 'choice editing' to make sure that only healthy, safe, and sustainable food was on sale.

There is an opportunity to harness the best of local food traditions and practices as part of community pride and desirable lifestyle choices, including promoting traditional crops suited to local growing conditions and validating and facilitating mundane practices of re-use, frugality, and care.

Contents

1. Introduction 5.
1.1 Importance of the Research 5.
1.2 Why Brazil, China, and South Africa? 5.
1.3 Sustainable and Ethical food 6.
1.4 Who are the New Middle Classes? 7.
1.5 Research Design and Methods 7.

2. Food Systems and Retail Landscapes 11.
2.1 Rio de Janeiro, Brazil 11.
Background
Findings
Creating Change

2.2. Guangzhou, China 15.
Background
Findings
Creating Change

2.3 Johannesburg, South Africa 17.
Background
Findings
Creating Change

3. Consumption Knowledge, Practice, and Trends 20.
3.1 Demographics 20.
3.2 Influences 21.
3.3 Issues and Trends 25.
3.4 Tensions between Intention and Practices 27.
3.5 Barriers to Change 29.

4. Comparing Sustainable Consumption and Sustainable Curtailment Behaviours across the Case Studies: Reporting Survey Data 30.
4.1 How do sustainable consumption behaviours (SCOB) and sustainable curtailment behaviours (SCUB) vary by country? 30.
4.2 What drives SCOB and SCUB by country and what does not? 33.
4.3 Additional analyses 37.
4.4. Summary of survey findings 39.

5. Findings and Levers for Change 40.

References 42.

Acknowledgements 46.

1. Introduction

1.1 Importance of the Research

Food is a powerful social and cultural force in all human societies. It is also a major industry with impacts for climate, environments, communities, health, and livelihoods.

The UN's Sustainable Development Goal 12 recognises the need to support countries in strengthening their technological capacity to enable more sustainable patterns of consumption, to promote sustainable public procurement practices, and to ensure that consumers have the relevant information and awareness for sustainable lifestyles.

This research offers comparisons of how ethical and sustainable food consumption is mobilised, understood, practised, encouraged, and hindered in three distinct global South contexts. It examines how ethical and sustainable consumption is influenced by food memories and traditional values, as well as by economic, social, and political change, and how this relates to the wider context of urbanisation, global population growth, and globalising consumerism.

1.2 Why Brazil, China, and South Africa?

The expanding consumption patterns of the growing middle classes in countries of the global South provides a stimulus to economic growth and simultaneously threatens environmental sustainability. Brazil, China, and South Africa are each the dominant economy in their respective regions. Each has significant middle-class populations in which shifts towards sustainable food consumption are likely to have global impact. The three countries offer case studies through which to explore and contrast ways in which sustainable food consumption is defined, performed, practised, and mobilised in global South contexts.

Brazil: In terms of institutional context, conflict over environmentally degrading monocultures has led to state and nonstate actors being institutionally engaged in ethical food provisioning systems (Ariztia et al. 2013). Movements of cooperatives and of the solidarity economy are deeply socially embedded and the state has used its procurement power to support family farms and organic production (Kleine and Brightwell 2015). The previous reformist left-wing government, bolstered by a vocal civil society, implemented ethical policies which are coming under stress by economic recession, political and institutional instability. In terms of consumer ethics and practices, there is strong public support for state use of environmental and social criteria to build solidarity between consumers and producers. Ethical consumption has taken a political citizenship outlook (Alves and Pereira 2015; Barbosa et al, 2014; Nespolo et al. 2016; Portilho 2010) with strong resonance in social media (Brazil is the third largest nation of Facebook users in the world (Statista, 2017)). However, there is also evidence of the stimulation of ethical consumption by companies and business organisations, with strong investment in advertising (Portilho, 2005) and the individualisation of responsibility on environmental and social issues that were previously within the sphere of the state (Mazetti 2012; Portilho et al. 2011; Silva, Araújo and Santos 2012). In terms of trends and fashions, there are high levels of individual ethical consumption with up to 54% of middle-income households purchasing 'ethically marketed products' (Akatu 2012). Thus, ethical consumption is a component of a modern and fashionable lifestyle informed by and enacted on social media.

By 2019, there was a shift of political regime in Brazil after 16 years of a left-wing party in the federal government, with a far-right president elected in 2018 with a conservative and authoritarian discourse and practice. In the wake of the COVID-19 pandemic, Brazil has changed from a country with high rates of employment to a context with 14 million unemployed in 2021. In 2021, with 9% of Brazilians going hungry (Rede Penssan, 2021), the country returned to the UN World Hunger Map. Inflation in Brazil in 2021 was 8.59% (Agência Brasil, 11/Oct/2021). Brazil was also among the countries with the most disastrous management of the COVID-19 pandemic, with more than 600,000 deaths from COVID-19 recorded by 2021.

China: In terms of institutional context, the state has historically been the major actor in modes of food provisioning. Concerns with the effects of pollution on food and damage to the environment are reflected in the 13th 5-year plan. Market-led reforms have created an institutional foodscape dominated by large state-related providers 4 and contracts, and a consumer market mixing transnational/national retailers and traditional wet markets. China is a major exporter and the 4th largest consumer in the world of organic food, with a market valued at €3.7bn in 2015 (Willer and Lernoud 2016). A plurality of competing codes concerning environmental standards and state and business initiatives promise traceability (Klein 2009). In terms of consumer ethics and practices, traditional foods and modes of cultivation, previously derided as anti-modern (Hung 2013) or associated with poverty and backwardness, are being revalorised as authentic and pure (Wu 2014; Park 2014). The scope for non-state actors to pursue policies and collective political campaigns is limited, but there are many market devices, such as traceable barcodes, in the largest online market in the world, where 40% of online shoppers are purchasing food (McKinsey 2015). In terms of trends and fashions, popular concern over food quality shapes food supply debates, reflecting a lack of trust in standards and non-branded products and in many 'conventional' food suppliers (Yan 2012). Consumers use digital media to voice concerns (Sirieix et al 2011). Market studies indicate rising consumption of premium brands (McKinsey 2016).

South Africa: In terms of institutional context, post-apartheid agribusiness is tasked with addressing social inequalities, but rising food prices have seen the government prioritise food security. Emerging alliances between government, business and unions are evident in consumer campaigns (e.g. Proudly South African promoting local procurement and economic investment, fair labour practices and environmental standards). In terms of consumer ethics and practices, substantial growth of black middle classes (Udjo 2008; Visagie 2013a,b) is opening up nascent ethical markets (Hughes et al 2015). Price and affordability of food is important (McEwan et al. 2015), but changing consumer preferences shaped by growing health and environmental awareness have led to an increased demand for sustainable foods. Major retailers are selling increasing volumes of organic produce. Trends and fashions: Status and image are growing in importance as the middle classes expand (Kaus 2013); ethical food consumption is intertwined with aspiration and quality. Civil society organisations use social media, technology and networks of actors in innovative and effective ways to mobilise ethical food consumers (e.g. the South African Sustainable Seafood Initiative, SASSI, uses mobile apps to enrol consumers to put pressure on mainstream retailers and restaurants. Food security is a key issue in South Africa, with extreme levels of inequality and rising food insecurity (11% of the population (6.5 million people) suffering from hunger in 2019 and 27% of children with impaired growth: Statistics South Africa). This was made worse by the COVID-19 pandemic, accompanied by drought and rising food prices: An estimated 12 million people in South Africa, or 20% of the country's population, are currently facing severe food insecurity (Moseley and Battersby, 2021).

1.3 Sustainable and Ethical Food

Sustainability and ethics have been a key topic in recent years debated both in the scholarly and mainstream literature (e.g. United Nations, n.d.; Whelan and Fink, 2016). Meanwhile, sustainable consumption is also relevant regarding food related behaviours, not least

given the impact that food consumption in emerging economies can have on the planet (Eyhorn et al., 2019). In particular, the number of middle-class consumers is expected to rise globally to 5.5 billion in 2030 (European Commission, n.d.). These consumers also display an increased interest in sustainable and ethical practices (McEwan et al., 2015), thus making them a key segment of interest.

The climate crisis may be global, but its impacts are local. What might count as ethical food production or consumption are far from clear, though principles generally include: ecological sustainability, sensitivity to local food practices, cultures, economies, and environments being open to being accountable for the impacts of those food practices across food systems and learning from the best practices of others. Ethical food consumption would involve navigating and juggling those complex food knowledges, choices, and practices in the context of personal circumstances. One size does not fit all.

1.4 Who are the New Middle Classes?

The middle-class categorisation is extremely diverse. At its most basic, it includes those that are neither the poorest nor the richest in any society, a range that tends to situate them within households where at least one member has a job requiring both professional qualifications and limited amounts of manual labour. In many countries, though, this covers a vast swathe of the population. In Brazil the IBGE (2017) uses an income centred approach to include in the Middle Class all the population of classes C and D, comprising the ones with family earnings between 1 to 5 monthly minimum salaries. The middle class is complex in China and is hard to define, so we use the working definition of middle class, that is whose annual household income is 90,000 to 343,5000 RMB[1]. In South Africa an income status of between R10,000 and R25,000 per month is typically considered to be middle class (Ndetlyana, 2014) but as legacies of colonialism, apartheid and corruption have resulted in a vast differentiation between richest and poorest, our participants self-defined in terms of class.

Exactly where people sit within the range of middle-class sub-strata depends on a loosely defined combination of status markers, including disposable income, cultural capital, education, living standards measures, wealth, ethnicity, and home district. A distinguishing element that emerges when thinking about the new middle-classes in contrast to the traditional middle classes, however, is precarity across one or more of the status markers, making this group vulnerable to economic recession or price rises.

1.5 Research Design and Methods

This research was conducted between 2018 and 2021.

In each country we chose a case study city – Guangzhou, Johannesburg, and Rio de Janeiro - that is a large metropolitan setting, identified at the start of the research with economic and new spaces of consumption and foodscapes that are in rapid transition. Each city is identified in the business press and consultancy literature as a key location for marketing to growing middle classes (Oxford Economics, 2016).

Phase 1, Food System Actors: In each country, some 30 food system actors were interviewed, including people working in government, civil society, wholesale, retail, hospitality, public procurement, NGOs, production and campaign groups, influencers, and celebrities. Each interview explored the background and role of the interviewee in the organisation, their understandings and criteria of sustainable and ethical food, their understandings of middle-class demographics and their

[1] The criteria to define the Guangzhou middle classes is calculated to be 1.5 times the McKinsey (national) level https://www.mckinsey.com/industries/retail/our-insights/mapping-chinas-middle-class (accessed 13/11/21). With this calculation, the Guangzhou middle classes fall into 90,000 to 343,5000 RMB,

consumption of sustainable and ethical food, organisational policies and practices as they pertain to sustainable and ethical food, and key influences and trends they saw as influencing their organisation and wider publics.

In Brazil, the 30 interviews were conducted from September 2018 to April 2019 with a balanced distribution along the 5 Interest groups: 7 of the interviewees are from 'Government & Civil Society', 5 from 'Campaigner & NGO', 5 from Restaurant & Hospitality, 5 from 'Retailer & Wholesaler', 4 from 'Celebrity & Influencer' and 4 from 'Other'.

In China, the 30 interviews were conducted from September 2018 to December 2018: 2 of the interviewees are from 'Government & Civil Society', 6 from 'Campaigner & NGO', 8 from Restaurant & Hospitality, 12 from 'Retailer & Wholesaler', and 2 from 'Other'.

In South Africa, the following 28 interviews were conducted between September 2018 and August 2019: 5 of the interviewees are from 'Government & Civil Society', 4 from 'Campaigner & NGO', 3 from Restaurant & Hospitality, 8 from 'Retailer & Wholesaler', 5 from 'Celebrity & Influencer' and 3 from 'Other'.

Phase 2, Consumer Practices: In each city, we interviewed some 30 people from a range of middle-class backgrounds (covering different age, ethnic, gender, employment, income, and educated groups) and followed up with a smaller sub-set of some10 households from each city for more detailed ethnographic work. Interviews addressed household food consumption practices, judgments about 'good' food and influences on notions of ethicality and environmental and social values. Respondents were also asked to reflect on (and demonstrate) their online practices as consumer-citizens, including how they collected information, shopped and/or reviewed online. Ethnographic research involved 'go-along' (Kusenbach 2012), accompanied shopping interviews and co-cooking sessions to capture the complexities and nuances of food choices, judgments, engagement with government and corporate ethical initiatives, and the ordinary ethics of food purchase and use. As part of this phase, digital ethnography explored the role of social media and online tools as devices implicated in ethical judgement and the creation of markets for sustainable foods.

Brazil: Between January and September 2019, semi-structured interviews were conducted in Rio de Janeiro with 31 middle class households as well as ethnographies with 10 out of the 31 participants in the neighbourhoods of Botafogo, Maré/Campo Grande, and Méier/Maracanã.

China: 30 semi-structured interviews were conducted from January 2019 to March 2019 across different districts of Guangzhou (Tianhe, Huangpu, Haizhu, Yeuxieu, Liwan, Baiyun, Panyu, and Conghua), and 12 ethnographies were conducted from June 2019 to July 2019. South Africa: 38 semi-structured interviews were carried out from March to July 2019 across Johannesburg and 12 ethnographies were conducted from June 2019 to July 2019.

Phase 3, Digital Sphere: to evaluate the cultural influences, trends and technologies affecting ethical consumption of food in and across the three country case studies, we undertook research focusing specifically on the digital sphere. The work with consumers produced culturally specific understandings of which platforms, apps and tools are relevant to consumers. Participants were asked: a) which top 3 search terms they use to look for information on consumption choices online; b) which top 3 key accounts (e.g. of campaign organisations) they follow on social media, and; c) whether they follow celebrities who might influence their buying decisions. These terms and account names guided text mining of social media in Brazil and South Africa to examine the traction of key values, actors and lines of influence. For a period of 12 months, cloud-based Discovertext software was used to mine the public Facebook and Twitter accounts of the campaign organisations and celebrity accounts named by participants (in English in South Africa and in Portuguese in Brazil). Government restrictions and technical differences inhibited access to social media for text-mining purposes in China.

A mixed methods approach to people's digital lives also included discussing their use of apps and social media in interviews, accompanied browsing on their phones, and observation of digital device usage patterns during shopping or cooking at home. The survey included questions on online access and usage (see further details on the survey below). Further, food system actors were asked about their digital communications and social media strategies.

Phase 4, Evidencing Trends: To widen the reach of the research and produce material with traction with policy and commercial actors we built on the in-depth analysis of the earlier work to gather quantitative data through an online survey. The aims of the survey were: assessing how sustainable consumption and curtailment behaviours identified in each country apply across a larger sample of consumers within each country; determining intentions to engage in such behaviours in future in each country; identifying values transcending local context and scale that drive sustainable consumption for each country as well as potential differences in them between countries. To achieve these aims, quantitative data was gathered in the Summer of 2021 through a web-based survey of middle-class consumers in the three focal countries. Comparable samples of the middle-class demographic in each of the three case study countries were accessed via Qualtrics, an online research panel to obtain a total of approximately 1,500 responses from the three focal countries. After data purification procedures the final sample rendered slightly above 500 responses per country (Table 1). The questionnaire was originally developed in English and used in South Africa (the most commonly-spoken second language and the lingua franca of the public domain). All scales employed were adopted from the literature where available. The questionnaire was then professionally translated into Portuguese and Mandarin using double-back translation procedures for use in Brazil and China respectively.

Table 1: Phase 4 Survey Sample characteristics

Country/cities	Brazil: Sao Paulo; Rio de Janeiro; Brasilia	South Africa: Johannesburg; Cape Town; Durban	China: Beijing; Shanghai; Guangzhou
Participants	528	529	529
Female/male	56.4%/43.4%. (0.2%NA)	60.7%/38.9% (0.4%NA)	53.5%/45.9% (0.6%NA)

NA: Not applicable

2. Food Systems And Retail Landscapes

2.1 Rio de Janeiro, Brazil

Background

The research coincided with a change of federal government and a concomitant shift in policy direction in Brazil. In the years prior to this 2019 political change, food poverty, public health, social assistance, and family farming had been priorities for policy and for funding. Government, NGOs, and campaigners had taken an inter-sectoral approach to improve food safety, food security and public health. This included sugar, salt and GM/transgenic food labelling, efforts to reduce food and packaging waste across the food system, healthy eating programmes and supporting market access for small producers. There were programmes aimed to counterbalance the power of multi-national food actors over the Brazilian food supply system which, it was argued, had channelled unhealthy food into major urban areas with subsequent poor health outcomes for the general populace.

Key programmes in existence prior to 2019:

PNAE (the national plan for school food) sits within the Programme of Food Acquisition (PAA), which supports and protects family agriculture. In addition to nutritional outcomes, by mandating a minimum of 30% of funds passed on by the program to the municipalities to be invested in the direct purchase of family farming products the PNAE supports food producing communities and Brazilian food cultures.

GUIA set nutritional standards and guidelines, which intersected with the National Food and Security strategy, recommending diets lean towards fresh ingredients and family farming. This programme intersects with the work of the Ministry of Work and Pensions in the solidarity economy, supporting access to market for small producers.

SUS/SUAS (Health and Social Assistance schemes). The SUS is a full, universal, and free access health system for the entire population of Brazil. The approach here including health prevention with the GUIA as a basis for this. Whilst the paired SUAS system, which is the social service assistance system, also uses the Food guide as a parameter for intervention and information.

Since 2019, the incoming Bolsonaro administration has turned away from this social welfare and community solidarity model by freezing all public investment. Not only have the above programmes been deprioritised but legislation that supports the prioritisation of neo-liberal economic policies has seen support for the expansion of large-scale agri-business into previously protected natural areas and permitted them to use pesticides that continue to be banned elsewhere in the world. The administration has prohibited uncertified organic products from being sold outside of farmers markets, thus effectively excluding small producers from mainstream markets.

Traditional Brazilian diets included a mix of rice, beans, vegetables, and meat. The retail food landscape has changed rapidly in recent decades and Brazil has become one of the world's biggest consumers of sugar. Supermarkets, including transnational corporations, now dominate domestic food retail in Rio de Janeiro, and over the last forty years sugary snacks and ultra-processed foods have increased in availability. Responsible for 60% of the wholesale market of Brazil, the Dutch company Makro also has a share of the retailer marketplace and distributes to small shops and restaurants chains. The biggest retailers are Pão de Açúcar Group and Carrefour, both with a large store network in the different cities of Brazil. However, one major chain, Hortifruti (like Food Lovers Market in South Africa or wet markets in China), specialises in fresh vegetables, fruits and poultry. Farmers markets are supported in Rio de Janeiro by networks organising collective purchasing directly from small rural producers.

Brazil is a leading global consumer of meat. Conversely, it also has a rapidly growing vegetarian and vegan population and an increasing market for plant-based foods. Big food has moved into this market with meat and dairy substitutes. Vegetarian, organic, free-range and free-from products are readily available in supermarkets, specialist stores and farmers markets, often with a large additional price tag.

Findings

Our food system interviewees felt that sustainable or ethical food consumption was not a main driver of food practices in Brazil. However, reported notions of 'good food' included health, empowerment, and food security concerns which in connecting social, environmental, and economic outcomes resonate with the United Nations' Sustainable Development Goal 12.

(i) Food security/sustainability with an economic focus: Although using different lenses to look at food sustainability, the interviewees tended to refer to three variables - social, environment and economy. However, once explaining the priorities and drivers of their institutions, they tended to focus on the economic aspect of sustainability revealing an organizational concern with issues of affordability, farmers' welfare, the solidarity economy, and addressing food waste.
Food waste was indicated as an issue with interviewees explaining how much money could be saved if food waste was reduced. The solidarity economy was highlighted as a way of dealing with income distribution (farmers/producer welfare) and food affordability. Those initiatives were usually valued for the importance placed on distributing money to small producers as well as making food in a fair price available for the population. Criticisms of organic foods, sometimes seen as synonymous with sustainable food, relate to issues of affordability and accessibility. Interviewees who criticised organic food reflected on the high price required to pay for an organic label, the investment needed for a totally pesticide free production, and the high prices of such products.

(ii) Health and fitness and food safety considerations were mentioned by key informants as a way of describing the food quality related to both preventive health actions as well as people's intentions to be fit. Within this perspective, food cooked at home is valued, including the use of vegetables and fruits, frequently given as examples of sustainable food. In addition to that, it is interesting to note that the idea of vegetarianism was mentioned quite often and usually embedded in this understanding of healthy food consumption. Gluten-free, lactose free and certain dietary food was also mentioned.

(iii) Food and empowerment was a central theme of food sustainability articulated by some government representatives and campaigners who were usually describing the challenge of both encouraging/defending the Brazilian traditional way of eating as healthy and providing access to quality information about food to everyone. Having the discussion of food sovereignty as the main background, both government representatives and campaigners stressed the fundamental role of the Food Guidebook to the Brazilian Population (Guia Alimentar da População Brasileira) as a government initiative fostering the adequate and healthy eating for Brazilian population. Usually referred to as Guia, rather than a diet prescription guidebook, it is a document addressing nutrition practices that are oriented to food in natura and minimally processed. Defending the Brazilian way of eating as sustainable, the Guia became a political reference since 2014 to both government institutions as well as some global south countries, which have asked for consultancy/support of the Brazilian government (Ministry of Health) to develop similar documents focused on nutrition and food sovereignty.

Another interesting finding related to this belief is the reflections about food knowledge as power. Addressing the challenges and opportunities of food information access, several interviewees have addressed the fact that many Brazilians are still lagging behind when it comes to the quality of the food information. Most of the key informants focused on explaining how access to information plays a role in food choice, which is seen as a privilege. Other interviewees, including from the retail and hospitality sectors, and influencers, emphasised how the discourse of sustainable food can reinforce the Brazilian social divide and inequalities, since it usually refers to a type of food that not everyone can afford and have access to, e.g. organics.

Creating Change

Our research took place at the cusp between two governments with very different priorities. Prior to 2019, legislation and cross-sectoral cooperation had played a key role in creating change towards sustainable diets. At the time of writing, sustainable change in the immediate future is likely to take place with limited engagement from the federal government.

The GUIA and the PNAE have however laid a strong foundation of reinvigorating pride in traditional Brazilian ways of eating as healthy and sustainable. Farmers markets and organic fairs are already linking personal health with supporting family farms to support their communities and land.

"... food is much more than ingesting nutrients and this is the message of Guia ... People want flavours, experiences, there is your own history" ***(Government representative)***

In this regard, the desire for health and wellness could also be used to support traditional diets and farming. Tapioca for instance is a free-from food that has a long tradition in Brazilian cooking.

Food waste was also raised by our participants as an area ripe for change. Whether that is waste due to distribution process inefficiencies or tackling food abundance culture by creating pride and aspiration around creative uses of leftovers or the healthy eating possibilities of lacto-fermentation that are already taking hold at organic fairs.

2.2. Guangzhou, CHINA

Background

China has become one of the largest food markets in the world, and it continues to grow rapidly (EU SME Centre 2013). When we began this research in 2018, we noted the diversifying foodscape of Guangzhou. The transformation and upgrading of the traditional market, the rise of new neighbourhood market brands, and the emergence of fresh retail brands in the high-end market. Since then, the emergence of Covid-19 has brought an increased use of online food services and a wider range of retailers entering this market.

The Chinese food system can be divided into two parts. The first part is conventional food networks, whose production side consists mainly of industrialized, large-scale farms and millions of small farmers who use pesticides and fertilizers. The distribution side consists of supermarkets, wet markets, community stores, and online stores, etc. The second part is the alternative food networks, which consists of small-scale family-based farms that adopt organic farming and their sales and consumption networks. The two components are relatively independent and are currently less connected. The latter is a very small niche market, with a market share expected to be less than one percent.

It is estimated that the food retail sales of China have reached 7.89 trillion CNY in 2018 (National Bureau of Statistics, 2019), with per capita spending on food doubling in the decade from 2000 (Scott et al. 2018).

Nationally, Vanguard is the largest supermarket chain, with 100 billion CNY sales as of 2018, followed by another domestic company RT-Mart, then Walmart and Carrefour (China Chain Store & Franchise Association 2019). However, the online retail giants of Alibaba and Jingdong are expanding rapidly in the food sector both online and offline through their subsidiaries Hema Fresh and JD Daojia. However, in much of China, household-producers and 'traditional' wet markets still maintain a high level of popularity and vitality (Zhang and Pan 2013) (wet markets house independent vendors selling an array of fresh foods) remain popular (cf. Zhong et al. 2020). In 2014, market share for fresh food was 60% traditional wet markets, 34% hypermarket and supermarkets, with the remainder in emerging channels such as online retailers (Kantar Worldpanel 2014). Currently the market share held by wet markets is falling whilst online food retail is soaring. However, there are large regional differences - wet markets still prevail in the south of the country and in rural areas (Zhong et al. 2021).

Since the Economic Reforms of 1978, China has doubled its production of grain and meat, and the yield of aquatic products has increased over ten times (National Bureau of Statistic of China 2016). Meanwhile, China also imports an enormous amount of food, especially dairy products and seafood from the global market, retail sales of which are over 1 trillion CNY in 2019. There has been a similarly meteoric rise in the use of chemical fertilizer increasing more than fivefold from 8.8 to 54 million metric tons, and applications per hectare increased from 59 kg to 341 kg over the same period (Scott et al. 2018). Nonetheless, according to a report of the International Federation of Organic Agriculture Movement, China had the third largest areas of land under organic cultivation in the world (3.1 million hectares), however this only occupied 0.6% of China's total agricultural land.

China has a national pesticide certification scheme with three levels: organic, green and non-hazardous. In 2018, the retail sales of certified organic food increased by 18% to 63.6 billion CNY, 0.8% of all food retail sales (Young et al. 2010). However, small-scale organic farms can rarely afford the certification fees and this produce is often sold within alternative food networks that rely on more personal connections to build confidence in a product. Alternative food networks have been growing since the early 2000s. The model most frequently includes Community Supported Agriculture and farmers markets. According to the statistics we obtained from a CSA workshop, at present there are more than 100 CSA farms and 1,500 small-scale organic farms in the nation, mostly in suburban areas around larger metropolises, together with conventional small farms major metropolises such as Beijing, Guangzhou, Shanghai, and Chengdu all have farmers markets. However, this does not represent mainstream eating, Guangzhou, a city of 18 million people (National Bureau of Statistics of China)[2] has only one farmers market rotating between two sites, typically with 20 stalls.

Findings

Understandings of sustainable and ethical food varied considerably amongst our food industry participants. Within our study, respondents from mainstream food retail and hospitality sectors described both how it was the responsibility of the government and officials to make changes to food production and how sustainable food consumption has emerged as a high value niche market. Although the government has promoted the concepts of 'reducing food waste' and 'protecting green mountains and green mountains' it is consumer choice that has garnered the most attention. Retailer programmes of sustainable consumption have largely focused on healthy diets for

[2] http://www.stats.gov.cn/tjsj/

achieving sustainable lives and communities. In this regard, companies have invested their resources in the development and promotion of free-from products such as plant-based proteins and milks. However, participants from the alternative sector and NGOs thought about sustainability in complex ways, and themes that emerged included: food safety; reduction in pollution and moves towards more natural production; building communities and supporting neighbourhoods, local economies and farmer incomes; soil as a living thing supported by traditional compositing; thriving ecosystems and resilient businesses as entangled; production methods as present in the flavours and textures of foods; addressing the loss of consumer understandings of farming, in the context of urbanisation and industrialisation and the loss of farming knowledge; changes in meat production and animal growth rates; overcoming the association of plant-based foods with religious practices; the tension between food choices as linked to health outcomes and food as lifestyle choice; qin jian jie yue (勤俭节约) or it's a shame to waste resources (lang fei ke chi 浪费可耻); building respect for the farmers, nature, and the land; building food justice between food producers and consumers; and fostering respect for the environment.

Considerations of the accessibility of sustainable and ethical foods varied depending on understandings of what those terms mean and on what is valued. Certified sustainable food was understood to be more expensive (typically, three to five times) and not available for all products. Green food (reduced pesticide content) is more available and cheaper than pollution-free (sprayed but not taken up by the plant) or organic.

For conventional actors, **the theme of traceability and sustaining steady safe supply chains** emerged here as more important than environmentally sustainable for its own sake. Interviewed retailers said that traceability would help them to transfer partial accountability to other suppliers along the supply chain when they get food incident reports from consumers. As small organic farms do not have official traceable records, their products are not favoured by conventional actors.

The words 'Normal' and 'Conventional' come up a lot in these conversations. This remained the case when participants were criticising the 'normal' and 'conventional' as a problematic legacy of changes over the last 40 years away from traditional practices and an embracing of industrialised farming methods. Within both the conventional and alternative sectors, there is some concern about economic pressure to adapt to trends and to scale up to survive. The increasing power of the supermarket and online sectors were part of this trend with likely impacts on wet markets as part of sustainable local economies, communities, and ways of life: "If you can keep up with the rhythm of the times, you can avoid being eliminated" (Hospitality representative). Alternative Food Network actors argued that large scale conventional production has become so dominant because in current economic systems such standardisation is the way to make money, but that there are other lifestyle benefits to small scale alternative systems.

Labelling: In China, the official certification system includes three levels - organic food, green food and non-hazardous food. Getting the certification is difficult for some household-based organic farms as they are not able to afford the fee. Therefore, they cannot claim their products are "organic food" despite the fact that they follow a strict organic production process. Instead, they use names such as 'ecological food' or 'safe food' in marketing. Although one retail respondent welcomed labels as offering choice, other participants struggled to trust them, while still others critiqued the compartmentalisation of certification forcing people to focus on pesticides or other chemicals at the expense of other forms of sustainability. Of far greater concern for our participants, however, was how labels relate to trust within the food system. Outside of the Alternative Food Networks, food supply chains in China are often long, with the agricultural areas situated far from major urban centres. Trust here relates both to food actors not trusting each other or the certification system and consumers not trusting food system actors. Almost all of our participants felt that the test and trace system is not sufficient and cannot be trusted, yet foods are tested at every stage of the chain. This lack of trust impacts on the willingness of food system actors to pay for certification, preferring instead direct relationships with consumers.

Barriers: Participants did not report sustainability as good business sense. It is most commonly understood by practitioners as good for communities rather than as good economic sense under current market systems. Currently the Alternative Networks are a largely separate system to the one provisioning mainstream retailers. There was some suggestion that this may change as trust in pesticide certification for food safety reasons opens awareness of sustainable foods to a wider demographic. Yet in alternative networks, the personal touch of direct supply was valued by some even without certification. This then raises questions about limitations for the potential for continued growth of brands within alternative networks. A concern here is that the power of the mainstream markets shifts the sustainable market towards more standardised, monocrop farming with implications for farmers in regions without the landscape to conduct such largescale production.

Some participants noted the rapid growth in meat consumption in China as wealth has increased. They point to the social status of meat eating and the association of vegetarianism with Buddhism as dual blockages to a shift to more plant-based eating.

Creating Change

As everywhere, food practices in China are strongly linked to family, memory, and aspiration and are considered mundane, entrenched, and difficult to change. Yet in the last half century practices of production, purchase and consumption have changed considerably as wealth has increased. Changes include increased meat consumption, the rise of the supermarket and more convenience foods. However, many of our participants explained that consumers retain a strong sensorial understanding of the food they eat.

This sensorial knowledge, alongside food scares associated with long food chains, has exerted pressure for change at all nodes of the food system. To date, change has taken two routes. The first, in the mainstream food system, has involved increasing standardisation, surveillance and tracing which favours the bigger producers. Yet consumer confidence remains low. Alternative networks have sought to build trust with consumers through direct purchasing and sharing the true costs and profits of production.

In China, the concept of sustainability is most strongly associated with the sustainable development of people and society, with a particular focus on health and food safety. It is the order of "body-food-place", to care first for the body and then about place. Campaigners, food activists and alternative producers feel that education and hands-on experience is key to helping urban young people understand and desire sustainable foods as they relate to Chinese traditions of body and place.

In organic production, our understanding of plants is similar to that of traditional Chinese medicine. It is a kind of macroscopic and holistic understanding of a whole (Campaigner).
"Our platform is not just a sales platform, it is also an educational platform. So we began to convey more ideas to consumers, not only for the safety of consumption, but also for the health of the soil, to support these young people to return to their hometowns and solve some social problems, the loss of rural labour, the loss of the youth" ***(Retailer).***

2.3 Johannesburg, South Africa

Background

The South African foodscape is diverse, encompassing formal and informal trade, traditional and modern influences, both African and Western, and under-nutrition alongside increasing expenditure on food. The deeply unequal national context creates insecurity and insufficiency for large swathes of the population. Non-state actors play an important role in driving regulation within the food sector.

The South African formal food retail sector is dominated by a few key players namely Shoprite, Pick n Pay, Woolworths, SPAR. According to the 2019 Global Powers of Retail report, Shoprite Holdings is the only South African retailer included in the richest 100 worldwide.

After the country's transition to democracy in1994, government procurement was identified as a key part of the economy-wide transformations necessary to enhance and facilitate the participation of black people in the South African economy. Thus, all procurement in South Africa is subject to Section 217 (1) of the South African Constitution which states that any organ of state, at any level of government, must procure goods or services in a manner which is fair, equitable, transparent, competitive and cost-effective. Section 217 (2) recognises "categories of preference in the allocation of contracts" and states that these categories can be for the "protection or advancement of persons, or categories of persons, disadvantaged by unfair discrimination".

The political priorities related to food have not changed substantially since the end of apartheid in 1994. As a country with a high level of inequality, persistent poverty and food insecurity, the focus of public policy has been on attending to availability on the supply side, and addressing access, hunger and nutritional quality on the consumption side.

South Africa's Preferential Procurement Policy Framework Act (PPPFA) was first gazetted in 2000 and followed by three versions of regulations, the most recent version being effective from April 2017. In 2003, the Broad-Based Black Economic Empowerment (B-BBEE) Strategy and the Act (Act 53 of 2003) were published and promulgated. The Broad-Based Black Economic Empowerment Amendment Act, 2013 (Act No. 46) came into operation in October 2014; and Preferential Procurement Regulations in 2017.

It is in this legislative context that any government programmes, procurement, codes and standards in the food sector occur.

Since 2000 there have been many rounds of discussion documents for a policy on organic food production. With no strong signal that the drafting process was producing a policy or finalising accompanying standards, the private sector-initiated Organic Standard was accepted as an IFOAM standard in December 2017 (SAOSO, 2019).

The South African National Standard (SANS) 1647, published in July 2018, was the outcome of a 6-year collaboration between WWF and representatives from the commercial and small-scale fishing sectors, seafood importers and exporters, retailers, hospitality, consumers, government departments (DAFF, DoH) and regulatory bodies (SABS, NRCS) to address the widespread mislabelling of seafood products on the local market. Compliance with this standard is still voluntary.

Findings

Informants listed **a range of things as constituting sustainable or ethical food**, including: reduced plastics and waste; reduced water use; support for communities; healthy eating and nutrition; tackling apartheid legacies; tightening regulation; 'clean' food; reducing meat consumption; buying local food. Several informants mentioned that terms like 'organic' and 'sustainable' are still open to interpretation (and therefore also possible misuse), as there are no government policies prescribing minimum standards of compliance. Some participants, particularly in mainstream food systems understood ethical food to be separable from sustainable food. However others, particularly in the third sector, reported that looking after the health of people now is good for current and future human and environmental health, and that heritage, indigenous foods, traditional, low-input, mixed farming, direct supply, land reform, fair wages and community engagement all go hand in hand with sustainable food systems.

Inequalities emerged as a major ethical concern across all sectors. Across these different categories, sustainable and ethical food practices were seen by many respondents as integral to reducing inequalities. This is linked to how 'sustainable' and 'ethical' are understood as being connected to processes across food supply chains rather than about buying a particular product. Here, sustainable and ethical food are understood as a collective achievement, which is good for health, wellbeing, and economies now as well as for the future of communities and ecologies.

The **accessibility of sustainable and ethical foods** depends on how those terms are understood. Some informants outside of mainstream food systems reported sustainable labelling as a marketing tool, sometimes linked to lifestyle aspiration. Despite high recognition, and a desire to do the right thing, consumer take-up appears to be mixed. Labels divided opinions in our industry participants. They were seen by some as too narrowly focused, often single-issue, and so about marketing and price points rather than about sustainable and ethical practices in the round. They were also seen as being expensive and therefore excluding smaller companies from market access. Some respondents referred to some weakly managed and regulated labelling initiative. The proliferation of labels was also seen to be an issue, sometimes presenting confusion to the consumer, particularly where retailers chose their own standards over third party ones. SASSI, the South African Sustainable Seafood Initiative, was one of the most innovative and recognised labels.

In terms of barriers to creating more sustainable forms of food consumption, various issues were raised by food system actors. The compartmentalisation of sustainable and ethical criteria sometimes forced consumers to choose between them. Limited awareness of the middle-classes of their complicity in social justice issues was also raised as an issue. Government protecting agribusiness and retailers over consumers or small producers e.g. around voluntary compliance was also seen as an issue. Sitting behind some of the resistance to regulation seems to be the notion that customer choice is nothing to do with industry structures or marketing. Infrastructure was noted as a blockage to small producers. For some, the issue lies in legacies around food and farming where conventional large-scale methods, labour relations, land ownership, crops and big retail chains are seen by those in power as the only way to feed the population. In the alternative sector, infrastructure blockages were often understood as a colonial legacy where profits are privatised and the environmental, inequalities and health costs are socialised, raising questions of who pays the financial costs for improvements to systems. Alongside this, some participants described a devaluing of indigenous foods and farming practices alongside the promotion of unseasonal, European and processed foods which were felt to be bad for the environment, farmers, welfare, and health. Conversely, within the conventional sector, concern was expressed about the uncertainty for farmers around the land transformation issue creating a challenge for the sustainability of the local supply chain. The inequities in land ownership and access that remain in post-apartheid South Africa is an unresolved and contentious issue.

Creating Change

Whilst all participants acknowledged that some change is necessary, there were a number of different suggestions for routes to change, from making current systems fairer to more radical systemic change. For some, connecting past, present and future was key to storying pride but also creating other possible futures not defined by apartheid or by neo-liberal value systems. To varying degrees, the retailers asserted that the power to set the agenda lies with upper middle class consumers and they as retailer are just responding to the demands and concerns of their customers. Influencers and campaigners, however, vigorously asserted that the power and responsibility in the food supply chain lies with the retailers because they are able to set the agenda. Emerging alliances between government, business and unions are evident in consumer campaigns.

For example, Proudly South African is a Government supported label connected to its "Eat Well, Eat Safe, Eat Local" programme promoting local procurement and investment, fair labour, and environmental standards. Participants in the third sector saw change as starting with dispersing power away from big food regarding transparency and standards. The Participatory Guarantee Scheme is an alliance of the third sector and small farmers in which the farmers check each other against ethical and sustainable criteria, reducing the costs of certification whilst facilitating market access.

Our research points to a complex picture across all income groups regarding price point, sustainable/ethical choices, and lifestyle consumption. Communicating the complexity of sustainable and ethical practices across food systems was often disregarded in favour of single-issue labelling.

3. Consumption Knowledge, Practice, and Trends

Although similar concerns emerged in all the cities, particularly around food safety and health, local environmental conditions vary, as do systems of food system governance, social and cultural needs, familial traditions and individual aspirations. How those different factors play out in diets in practice depends on the opportunities and barriers in individual and familial situations within food systems.

3.1 Demographics

The living situations and individual roles in household food procurement and preparation varied considerably among research participants and between cities. Some participants lived alone, while others co-habited with partners, children, parents, grandparents, cousins, and/or friends. Some had paid domestic help one or more days a week, some did all the shopping and cooking for their household, some undertook one or other of those tasks, some shared the tasks with other members of the household, and some did neither.

Social Class is a complex intersection of income, wealth, education, precarity, opportunity and status. The middle-classes are therefore a wide-ranging group, which includes both those with inherited wealth, prestige and social connections and the newer middle-classes who are the first generation to have a higher education and /or disposable income but whose position is precarious, dependent on current income for security.

Aspiration and frugality are strong drivers of food choices across the middle-classes. This, however, is not a simple binary, both drivers pull in multiple directions, for example: a foodie aspiration to have a global outlook and be knowledgeable about 'authentic' imported foods; pride in local traditions as being as good as /better than those imported ones; frugality as a necessity of a low or precarious income; aspiration to show that the household has no need to be frugal; particular kinds of frugality as aspirational trend, for example in having the time to be creative with leftovers, or seek out raw ingredients with minimal packaging in Johannesburg and Rio, or to accept the choice limitations of engagement with community supported agriculture in Guangzhou.

Ethnicity, particularly in Johannesburg and Rio, is interwoven with class as a legacy of colonial and post-colonial relationships.

Parenthood: Many of our participants noted that becoming a parent made them take much more notice of both the kinds of foods they ate and how they were produced. Avoiding ill-health through feeding the family safe food was the major concern, but many participants also described using food to help maximise future health.

Gender: although men are involved in food shopping and preparation in all three cities, the role of planning, making purchasing decisions, and cooking, particularly in a family environment most often falls to women. Household role divisions in food labour sometimes led to tensions if the person doing the shopping made different decisions about where to shop and what to buy then the list maker requested. Disagreements included understandings of what constitutes 'safe' or 'healthy food or the trusted sources of this food, but for our participants were most often around the quantity of meat consumption.

Age Group was where we saw the most consistent differences in local ethical and sustainable food practices. Older people, particularly those of the emerging middle classes, more often reported habits and practices borne of frugality, such as cooking with leftovers, which are incidentally sustainable. Although for some middle-class participants, practices of frugality were valued as practices of care. In our study, younger people were more likely to report sustainable intent in terms of purchasing. However, they struggled to convert their concerns into everyday practices, for example being unwilling to eat food leftover from a previous meal or buying sustainably labelled but highly packaged products.

Mobilities: A small sub-set of our participants held a sustainable or ethical focus which was influenced by travel. For the more established middle-classes, this was often linked to overseas travel for education, work or leisure. For the newer middle-classes, influences were more often travel to visit family who still live in more rural areas. Both groups attributed their concerns to an awareness of the impacts of food systems on communities and environments.

3.2 Influences

Across all the demographic groups, in all three cities, shoppers struggled to comprehend the complexities and impacts of food choices, food systems and food practices. Consumers were most often aware of simplistic marketing claims rather than the nuances of the interplay of seasonality, food miles, farming method, processing, packaging and so on. Such claims were often understood as a marketing ploy and even when particular labels were sought out it was because they were considered to be less bad, e.g. less likely to contain high levels of pesticides, than because they were understood as good. Claims that related to health or wellness such as 'free-from' products were often assumed to also be better ethical and sustainable choices. Outside of already ethically committed consumer groups, ethical and sustainable food was most often understood as more expensive, hard to find, less convenient and less tasty.

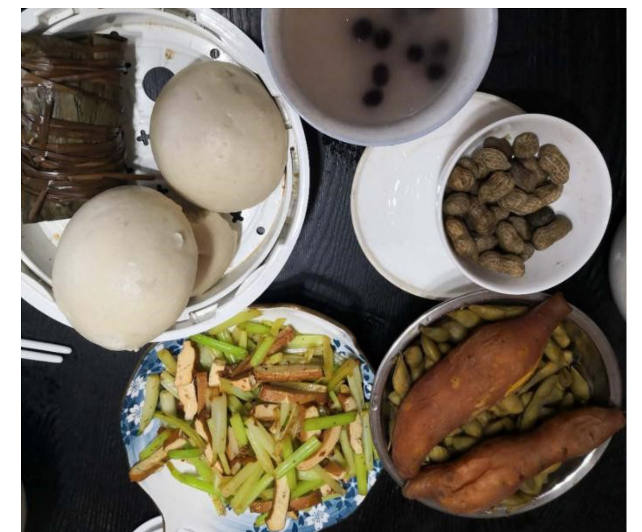
Negative news and events tended to catch the attention of our participants more readily than positive ones. This was particularly the case when it came to food safety. However, although some participants simply tried to avoid products that concerned them, others were pro-active in using social media to seek information about how to make positive choices.

Influence of Government policy at local and national levels was felt by our participants to be significant. Many of our respondents felt that eating good food was much more expensive and time consuming then eating poor food and that it was the role of government to make good food more accessible through supporting both the populace in eating well and producers in doing the right thing.

Influence of brands: High end retailers are more likely to be seen as brands that can be trusted to provide safe and sustainable food and as an aspirational goal. However, price is an inhibitor to access. Trust was not universal though and some participants believed this mark up to be just a marketing ploy. Other participants felt that just because a product has a sustainable label that does not make the whole thing sustainable. For example, because packaging is both wasteful and can lead to over-purchasing and food waste; or because an organic food is imported.

Influence of celebrities: Celebrity chefs and celebrities who cook were recognised as influencing food aspirations. In Rio and Johannesburg, international as well local personalities were cited as being influential. Although such chefs may encourage confidence in home cooking from scratch, their use of imported foods was not necessarily a positive influence on ethical ingredient choices.

Vegetarian, vegan or meat-reducing participants were more likely to note the ethical influence on them of celebrities than did other groups. Rio differed from the other two cities in that two of the most well-known celebrity cooks were both known for promoting local, accessible and healthy food, and for recipes that minimise food waste.



"I'm a big fan of Bela Gil. She is an important personality to me because she shows all the time that eating is not just food. It's a political act and that makes a lot of sense to me, it's intrinsically connected… in the causes against pesticides, against transgenics, about eating better, about recipes, about conscious meat consumption, about reducing meat consumption, adding more vegetables in day-to-day food, looking beyond frying, beyond sugar. Try a more natural, more sustainable lifestyle, not only in the matter of food, but also on other issues such as consumption, clothing, among others." ***(Consumer, Rio de Janeiro)***

Such campaigning celebrities were also working in the Johannesburg and Guangzhou contexts, but their work was more niche and less well recognised across society as a whole. Several campaigners also argued that the prohibitive cost of "influencers" or "celebrities" made it difficult to employ them to promote issues.

In Johannesburg, healthy eating was more often the focus of campaigning food celebrities, although in some cases by e.g. encouraging rediscovering traditional ingredients and recipes through using time saving modern equipment, their work has positive implications for local producers. In Guangzhou the focus was more on regional cooking than any other message. Although in both contexts, vegetarian and environmentally inclined cohorts had their own key influencers.

Influence of NGOs and campaigning groups: Campaigning groups were not often mentioned as sources of influence by our participants. However, news items and documentaries that drew on their work were, as were friends who were engaged in these activities. An exception to this was in Rio where the role of health specialists, including as campaigning celebrities on social media, in guiding and encouraging the consumption of foods for health and fitness considerations was recognised by participants.

Influence of family and peer groups: Family and peer group influences differed from the other influences in so far as being less visually dominated and attending to the smell, taste, and texture of foods. Friends and family perceived as well informed were acknowledged as significant sources of knowledge and an influence on practices. These influences were wide ranging. For example, in Johannesburg one couple boycotted products containing palm oil because of the passion of a family member, whilst across all the city contexts aspirations towards meat reduction and vegetarianism appeared to circulate within friendship groups. Although other issues, for example single-use plastic, were the subject of peer group influence, it seems from our participants that lifestyles such as vegetarian/veganism generate the most traction in aspiration, if not necessarily in practice.

Influence of media: Digital technologies were integrated into the lives of participants across all three cities. Indeed they have become so ubiquitous and mundane that participants sometimes struggled to recall their lines of influence. The ethnographic work was particularly telling here, with our researchers noting that whilst cooking was going on, TVs, tablets and phones were often also in use.

Most of our participants regularly watched television. For, those who did not, it was a conscious choice rather than because they could not afford / did not have access to the technology. Television was not generally used by our participants as a means to seek out specific knowledge about ethical or sustainability issues, nonetheless it did serve as a significant source of information whether through food shows, news programmes, documentaries or advertising content. Perhaps more unexpectedly, in Rio, the food habits of characters on soap operas were noted by campaigning groups as influencing food practices.

Cookery shows were a popular form of entertainment across all the cities. Although many participants struggled to recall the names of cooking celebrities, they could recall the shows they liked to watch, and in South Africa, one campaigner was unequivocal about the influence of TV chefs on consumers, stating that *"we see direct correlations between what MasterChef is cooking and what goes off the shelves. So, if MasterChef is eating Red Roman … we find that Red Roman is off the shelves."*

For many of our participants, news and documentaries appear to be a source of knowledge that is the basis for further research using social media or within peer groups. These are rarely good news stories. Rather, they highlight products and practices of concern. Health is once again a primary hook here, although concern for others, particularly for iconic species arises too. For example, linking single use plastic and ocean mammals, or palm oil and orangutans. Stories about 'super foods' are examples of where a 'good news' story was picked up by our participants.

The use of online searches for ingredients, recipes or other quick snippets of information was almost ubiquitous across our participants. Across all three countries, participants used social media to help them navigate food choices

*"I follow people who are also from the suburbs, they are also from the favela and they post a picture of their dish with rice, beans, zucchini, eggplant. It is a rich dish, accessible, it is a food you would spend R$10, R$15 and it is accessible. It is good to see certain dish, which is something that will nourish you and it does not reinforce the gourmet side of veganism as if it is something made for the elite, because it shows that if you are conscious, which is what I am looking for, you will easily consume it. It is not necessary to earn more than the minimum wage to do it" **(Consumer, Rio de Janeiro)**.*

*"I find this WeChat important! Public account is very important! Because you get in touch with the friends in the circle, and they all share healthy, positive things, you're drawn to look at this information, and it makes sense" **(Consumer, Guangzhou)**.*

On social media these messages become intermingled with those from lifestyle influencers and family and friends, and participants articulated the difficult balance between wanting to learn, being overwhelmed with information, and the pressures of being seen to belong.

*"[The] social media and even your Google searches, actually it's information overload. Because … the hype is like high protein. It's just protein, protein, protein, … and then suddenly it's like coconut, and then I'm a bit confused. So, I go back to my old tried and tested ways, lots of sugar, the old fashioned way… [We] belong to a WhatsApp group, and you are all accountable to each other on what you eat. So, whatever goes into your mouth, you take a picture of it, and you should see those pictures… [but we] hide away the unhealthy stuff. I'm sure everybody does in that group" **(Consumer, Johannesburg)**.*

Influence of food labels: In all three cities, single issue labelling had better traction with our participants in terms of awareness and understanding. Green food was the best widely recognised label in China. SASSI in South Africa, and free-from and transgenic had strong recognition in Brazil. However, with the exception of a few very engaged ethical consumers, our participants in all three cities, even when labels were recognised, understandings of exactly what information about the product they conveyed was highly variable.

Participants with a good understanding of labels were the most likely to also see that issue as a priority. In all three cities, label r ecognition combined with concern for health or the environment was also a strong driver. Amongst younger people, this largely remained the case even for participants who did not entirely trust the checks and balances in monitoring the labelling system.

In our study, older participants in Guangzhou and Black participants in Johannesburg were the most inclined to trust their own senses and knowledge of the materialities of good food then something as lacking in nuance as a single-issue label. Nonetheless, trust of particular brands was reported across all demographic groups in all three cities.

Influence of food memories: When asked, participants related strong food memories and influences from childhood diets. Although not usually framed in the language of sustainability, for our first- or second-generation urban residents, food memories often included a sense of the pleasure in simple things and of frugality as an important part of that. For some this prompted feelings of dissonance between their appreciation of the convenience and choice of city-based food worlds, and an awareness of something lost. Participants described a yearning for flavour that they felt was entangled with, but was more than, a connection between the rhythms of the land and the communities it supported.

"The old taste is gone… I don't think you'll find that taste again. In the past, the ingredients and the present are totally different things. In the past, the pigs were all fed wild vegetables and grew up with them. Now, the pigs are all fed with feed, which makes them taste different. And now the water quality has also changed, all the things nourished including vegetables and animals taste different ***(Consumer, Guangzhou)****.*

"When I was young, I thought pork and chicken were delicious, but now I can't eat the most expensive one in the city. Because the time for meat growth is too short, it is all quick" ***(Consumer, Guangzhou)****.*

Such nostalgia was not an outright rejection of the foodscapes of the city. Food practices build on these traditional knowledges and memories, combining the old and new. This can result in more sustainable or ethical practices, but not necessarily so. For example, in Guangzhou many participants did still try to eat in a hyper seasonal way, where foods are in season for maybe only two weeks at a time. However, this is not a local seasonality but a China-wide understanding, where a product that is grown in one specific region may be in demand nationally according to the solar term.

However, as outlined in the food system section, a small but significant minority of participants with a strong health, sustainable and / or ethical ethos constructed their diets, their work and even their identities around adapting old ways to urban life.

3.3 Issues and Trends

Health linked to sustainability: Health outcomes were a priority consideration for participants in all three cities and, in all three city contexts, sustainable food was often equated with maximising health. Concerns here included:

- Food safety concerns of taking care to avoiding adulterated or modified foods, by checking labels and eating a varied or seasonal diet; body, beauty, and weight loss and the aspiration towards the consumption of free-from food items (e.g. gluten-free, meat free) that have become associated with the wellbeing industry. This group were more likely to think in terms of foods or 'superfoods' than diets generally. Younger cohorts in Johannesburg and Rio were the most likely to understand highly processed products labelled as 'free-from' as also healthy and/or sustainable: *"To me it's those magic words, organic, gluten free, wheat free, those would be healthy foods Then yes, your fresh greens"* ***(Consumer, Johannesburg)****.*
- Avoidance of industrial farming methods. For younger participants, particularly parents of young children, looking after health was more likely to include seeking out products that were labelled as pesticide free, hormone free, free-range or meat free, but other forms of sustainability were not a primary focus here, and often not on the agenda at all.
- In our study, older consumers were more likely to seek out ingredients (rather than products) that they considered to be healthy and were more likely to eschew labels in favour of trusting their own senses. This latter effect was particularly strong in Guangzhou and less strong in Rio.

"The food that everyone eats every day, food directly affects the health of the human body.… in the future, the original, traditional farmhouse dishes produced in remote areas will become more and more popular… I believe that modern technology has brought convenience to our lives, but modern technology should never be used in food production. We should maintain the original and nature-based food production mode and avoid adding too much artificial hormones and chemicals on food" ***(Consumer, Giangzhou)****.*

Within this health trend is a recognition that food production practices impact on the health of the consumer, although for the most part the focus is on the perceived 'goodness' done by a particular food within the eater's body, rather than on the positive contributions made to environment, welfare, and / or communities through the means of its production.

- Organic branding was recognised in all the cities and was often associated with personal health rather than environmental sustainability or farm worker or animal welfare. Indeed, this conflating food labelling as saying something about personal health was common. There is potential here to build on the connections between individual health and healthy environments and fair communities but as yet that entanglement is poorly understood by most consumers.

Meat reduction and vegetarianism including Meat Free Mondays were an emerging trend across all three cities. Although for some participants the key driver was animal welfare or climate crisis, for most it was health concerns as outlined above. Practices here included the purchase of highly processed, often imported, food stuffs as a meat substitute. Something which led some in the emerging middle classes to believe that plant-based diets are an expensive lifestyle choice beyond their means. Whilst for others, particularly in Rio, it was associated with an aspirational dimension. Across all three cities, meat eating emerged as the issue most divided by gender, with men often wanting to eat meat in greater quantities then women. Although vegetarianism / veganism were small but emerging trends in all three cities, for the most part our female participants just wanted to eat a bit less meat.

The traditional in the new: Although all our participants lived in large cosmopolitan cities, many had family connections to other ways of living. They enjoyed the convenience and opportunities of city living, but also felt that this had its risks and costs. In part this was expressed as a yearning for a connection to a (possibly idealised) rural way of life, in part a thirst to continue or rediscover distinctive local food practices. Across all three cities, but particularly in Guangzhou and Black participants in Johannesburg, this yearning went beyond the plate to an expressed desire for access to smallholdings /or other outdoor growing space.

Support for local and direct purchasing: Across all three cities, although messages around changes to food choice to support local and small-scale food businesses were less widely known, where they were known, they had significant traction. In Johannesburg and Rio, consumers sought out products produced within their own countries with some going further to seek regional products. In Guangzhou, following some food safety scares, the trend was slightly different, with some products being sourced from international supply chains for safety reasons. However, the desire for in-season Chinese products, particularly from horticulture, remained strong. Across all the contexts and within all the participant groups there was a small subset of consumers who described actively looked for products from small and medium sized businesses with more direct supply chains. Including direct purchasing from producers. This trend was stronger in Guangzhou and Rio than in Johannesburg and rested on two main ethical concerns – that of supporting farmers and local independent businesses, and access to food considered safe and unadulterated. For these participants, direct purchasing-oriented food systems were a good way to retain the values of traditional life ways within the convenience of city-living.

Food as lifestyle: For the middle-classes, having enough to eat is, for the most part, affordable. As such, this 'food as lifestyle' trend includes aspects of the previous trends in that food and food consumption have become packaged as part of a lifestyle choice. 'Food as lifestyle' is a trend in which a necessity is repackaged as a form of aspiration or

indulgence. This can include the purchase of niche, often imported, products, the ultra-processed free-from products discussed above, or the micro-indulgence of eating out.

*"A pizzeria with a firewood oven and they make a wonderful dough, very thin… At the weekends, even though it is more expensive, it is worth it because of the environment, the atmosphere of being in a place that, since it is more expensive, it is invariably more tranquil. Tranquillity is what matters. Since we live in the favela, it is always very busy. It is always in 220 volts, people are very agitated. This space, for example, is calmer…" **Consumer, Rio de Janeiro)**.*

Organics and plant-based eating are examples of practices that were understood as sustainable and aspirational by participants across all three city contexts. However, not all such aspiration involves new consumption. In Guangzhou, there is a saying amongst older people: qin jian jie yue or it's a shame to waste resource()' and across all our cities some of our participants took pride in practicing this in mundane details, such as bringing shopping bags, or using leftovers

3.4 Tensions between Intention and Practice

In all three cohorts, the ethical and sustainable practices reported in the interview phase of the project were not always evident in the ethnographic phase. Three key tensions emerged across all the city contexts when it came to putting those knowledges into practice: fear/trust; mutuality/convenience; aspiration/tradition.

Fear/trust: In all three cities, our participants expressed concern about the integrity of food system actors and the controls on food supply chains, particularly regarding food safety. Approaches to managing these concerns varied considerably, and included different combinations of: boycotting particular brands, seeking out the reassurance of a trusted label or brand name, and/or trusting more direct contact with producers. It should be noted, however, that participants who opted for known brands or labels were less sure in their choices than respondents who turned to shorter supply chains. This latter group were more likely to trust the evidence of their own senses.

Mutuality/convenience: Our respondents linked food choices not only to concerns about their own health, but to care for others within food webs. This care, though, does not map straightforwardly onto practices. In all three cities concern for others was in tension with convenience. Convenience here is not just about time saving, but accessibility and affordability. This resonates with findings from other consumption studies (Meah and Jackson, 2017).

In terms of plastics, the message around avoiding single use carriers had traction in all three cities, but the participant shopping diaries across all the cities contain many images of single use supermarket carrier bags even when the participant had noted a concern for the issue.

In Johannesburg and Rio there was ethical awareness of structural inequality linked to post-colonial legacies around land and property.

*"I boycott certain supermarket because I heard that they did not pay overtime hours of the workers…. I try to buy more organic things. If I see organic coffee for example, which has a good price, I know it is more expensive. But sometimes there are some that have, for example, in the MST [Landless Workers Movement] store by the way, there is a very good one and then I buy it. By buying, we are fostering, helping these products to reach better, easier, cheaper for everybody" **(Consumer, Rio de Janeiro)**.*

In Johannesburg, for some, urban life had opened up possibilities of a shared food culture that drew on the diverse cultural heritages of the population. However, the foods that were available in mainstream retailers often leaned towards crops or products originating from the global North.

A much smaller driver, but one that cut across class factors, was concerns for practices of mutuality/social sustainability. This group were willing to spend more time and effort to identify good food. They hope not only to avoid harm but to make a contribution to the wellbeing of others. In Johannesburg, amongst the new (often black) middle classes there was some desire to actively support black farmers and black-owned businesses.

*"Food for me is very attached to wellbeing and love and nourishing the soul and community and demonstrating care" **(Consumer, Johannesburg)**.*

In sum, the desire to support those who had historically been excluded is seen as one factor amongst many – if all other things are equal regarding convenience, price, accessibility, and quality, then these businesses are more likely to be supported.

Aspiration/tradition: In all three cities, participants had combined their food memories with their current living situations and aspirations to create their own food practices. For one group, the pull of the 'old' was the stronger force. This included care for family traditions, cultural belonging, local economies, and a means to live within ecosystem capabilities. Respondents from the newer middle classes were more likely to focus on social sustainability and frame ethical and sustainable behaviours as about connection and belonging.

*"It comes back to that authenticity thing. Understanding authentic flavours. Flavours that are linked to memory. Taste that is linked to memory. Understanding that food is a big component of my cultural background. Food is a connector for us. Especially as coloured [3] people, food is a mechanism that we would use to break down barriers. We would come together over a meal and food has always been a kind of mechanism to open access to people. To break down barriers. So, taste, flavour, celebration" **(Consumer, Johannesburg)**.*

For a second group, a global palate, and the seeking out of novel or niche foods, was a presentation of middleclass belonging and an outward looking global identity. A third group, whilst valuing simple home-cooked foods, and critiquing the power relations of traditional foodways, aspired to encompassing the best of what other cultures had to offer into their diets and food practices. A fourth group, particularly incorporating younger demographic groups, expressed aspirations for belonging which involved ethical or sustainable food as trends. For example, at the time of the study, younger, more-educated respondents described plant-based eating as appealing and on trend:

*"The supermarkets that have more of these products, which are the most expensive, the organic ones and these ones amuse me better than the cheaper markets. I think that is it. It pleases me better… those nice different foods; I find it cool" **(Consumer, Rio de Janeiro)**.*

[3] Despite a problematic history and often contested usage, apartheid racial categories continue to be widely used and some respondents self-identify as coloured. In areas of the Western and Northern Cape, there are specific historical and political meanings attached to what it means to be 'black', 'white' and 'coloured' (Erasmus, 2000).

3.5 Barriers to Change

Accessibility to foods seen to be sustainable and ethical is a limiting factor, particularly for the emerging middle-classes. For example, where participants would have preferred organic but were blocked by lack of availability or affordability, they often sought out transgenic-free or hormone-free products, and those involving reduced pesticide use as an acceptable compromise. In practice though, these different issues had to be juggled and prioritised. Consumers struggled to weigh up, juggle and prioritise concerns about healthy or safe food with information and/or trends around the environmental or social implications of those same foods. Even where messages were clear, well-resourced, and well-targeted, they were subject to tensions which impacted on how those messages were (or were not) prioritised and translated into practices.

A small sub-set of participants were willing to spend a great deal of time and effort to identify foods and food systems that worked towards a combination of environmental protection, labour rights, animal welfare, and individual health. These participants tended to be wealthier and to identify themselves as part of an actively engaged ethical community. And in all the city contexts, with the exception of committed vegetarians, ethical and sustainability messages had far less traction when eating outside the home.

4. Comparing Sustainable Consumption and Sustainable Curtailment Behaviours across the Case Studies: Reporting Survey Data

This section outlines the results of the quantitative phase of the project (Phase 4 outlined in Section 1.5). It presents the results of the survey addressing the following two objectives: (i) How do sustainable consumption behaviours (SCOB) and sustainable curtailment behaviours (SCUB) vary by country? and (ii) What drives SCOB and SCUB by country and what does not?

We adopted or adapted measures from the literature for motivations to engage in sustainable food consumption. We measured values (Van Doorn and Verhoef, 2015), self-expression (Wilcox et al., 2009) and self-presentation tendencies (Malär et al., 2011), health, price, fitness, and quality consciousness (Lichtenstein et al., 1993; Verstuyft et al., 2012; Moorman, 1990; Ailawadi et al 2001), food nostalgia (Gao et al.; 2020) and food neophobia (Dickson-Spillmann et al., 2011) as potential drivers of sustainable food behaviours.

4.1 How do sustainable consumption behaviours (SCOB) and sustainable curtailment behaviours (SCUB) vary by country?

Aggregated scores per country

Table 2 presents the aggregate scores[4] for SCOB and SCUB in each of the three countries. All three countries show a tendency towards engagement in SCOB, with mean scores above the midpoint of 2.5 (scale: 1 never – 4 always), with China presenting the highest value with 2.93. In terms of SCUB, all three countries also demonstrate scores above the mid-point of 2.5. Again, China presents the highest value with 2.92. Overall, the data show that respondents in our three national samples engage in sustainable consumption and curtailment behaviours.

With regard to future intent to engage in sustainable behaviours (ISB) (Table 3), data from the three countries shows mean scores of above 4 on a 5-point Likert scale (1 strongly disagree – 5 strongly agree). These scores suggest that individuals are keen to engage in SCOB and SCUB during the next 12 months.

Overall, the data suggests that middle-class consumers in Brazil, South Africa and China are both engaging and willing to engage in sustainable behaviours.

Table 2: Aggregated mean scores SCOB and SCUB

Full sample	Brazil		South Africa		China	
	Mean	SD	Mean	SD	Mean	SD
SCOB (1 never-always 4)	2.73	0.50	2.83	0.43	2.93	0.40
SCUB (1 never-always 4)	2.77	0.60	2.69	0.53	2.92	0.46

[4] These scores represent an aggregation of all the items related to either SCOB, SCUB, or ISB. Below are tables showing the scores associated with each individual item.

Table 3: Aggregated mean scores ISB in the next 12 months

Full sample	Brazil		South Africa		China	
	Mean	SD	Mean	SD	Mean	SD
ISB (1 strongly disagree – strongly agree 5)	4.29	0.73	4.05	0.80	4.25	0.53

Scores by country and specific behaviour

Table 4 shows detailed mean scores for specific sustainable consumption behaviours (SCOB). The data highlights that in particular "eating home cooked food" and "eating more fresh food" are key SCOB in all three countries. Interestingly, these values are highest among Brazilian consumers (3.58/4 and 3.42/4). In contrast, "eating vegetarian or vegan food" is slightly below the mid-point (2.23/4 to 2.38/4) of the scale, thus suggesting that such food options are considered, but not a priority for middle-class consumers in the three countries in terms of SCOBs.

Table 4: SCOB data by items

SCOB data by items (1 never-always 4)	Brazil	South Africa	China
Eating home grown food	2.26	2.43	2.45
Eating organic/free-range/ecological. (SA: +Sassi certified)	2.59	2.50	3.01
Brazil: Eating food that is Family agricultura/ agricultura solidaria/food produced by Cooperatives/by the MST-Movimento dos Sem Terra; (South Africa: Eating food that is fair trade); (China: pro poor, fair trade, family agriculture)	2.32	2.69	2.64
Eating food which is locally/regionally grown	2.87	3.10	3.17
Eating vegetarian or vegan food	2.36	2.23	2.38
Eating food that is in season	2.97	3.05	3.16
Eating home cooked food	3.58	3.52	3.23
Eating more fresh food (e.g. fruits and vegetables)	3.42	3.29	3.36
Brazil: Eating Vegetable/fruit rejects; (SA: Food from informal traders); (China: Food that is produce in a traditional way)	2.22	2.42	2.98

Table 5 shows detailed mean scores for specific sustainable curtailment behaviours (SCUB). The data highlights that in particular "minimizing household waste by reducing food waste at home" and "minimizing household waste by bringing your own bag when you do food shopping" are key SCUB in all three countries. These scores are highest among Chinese consumers (3.19/4 and 3.19/4). In contrast, "eating lower quantities of animal products" and "eating lower quantities of milk and dairy products" is mostly slightly below the mid-point (2.25/4 to 2.51/4) of the scale, thus suggesting that such behaviours are considered, but not a priority for middle-class consumers in the three countries. Specifically, South African consumers represent the lowest scores in these two items (2.28/4 and 2.25/4).

Table 5: SCUB data by items

SCUB data by items (1 never-always 4)	Brazil	South Africa	China
Eating lower quantities of animal products (e.g. meat or eggs)	2.51	2.28	2.48
Eating lower quantities of milk and dairy products	2.42	2.25	2.38
Eating less processed food	2.73	2.58	2.70
Minimising household waste/trash ...by using fewer bags when you go food shopping	3.00	2.99	3.05
Minimising household waste/trash .. by bringing your own bag when you do food shopping	3.01	2.97	3.19
Minimising household waste/trash ..by reusing food containers (e.g. from takeaway food)	3.01	2.87	3.12
Minimising household waste/trash ..by reducing food waste at home (e.g. by using up leftovers)	3.14	3.18	3.19
Minimising household waste/trash ..by composting my kitchen waste	2.54	2.40	2.78
Minimising household waste/trash ..by choosing products with less or better packaging (e.g., paper instead of plastic)	2.85	2.71	3.10
Minimising household waste/trash ..by ordering less/taking doggy bags home when I visit a restaurant	2.48	2.73	3.24

Table 6 presents the detailed mean scores with regard to intent to engage in sustainable behaviours in the next 12 months. Middle-class consumers in all three countries demonstrate positive intentions with scores around and above the 4/5 mark. Particularly, the intent to engage in curtailment behaviours is higher than consumption behaviours in all three countries. This difference may be driven by other motives related to middle-classness (e.g. finances and awareness of ethical consumption practices) as the acquisition of ethical foods may entail an extra financial effort, while the reduction of food waste does not.

Table 6: Intent to engage in sustainable behaviours by item

Intentions to engage in SCBs (1 strongly disagree to strongly Agree 5)	Brazil	South Africa	China
I will increase the amount of sustainable/ ethical food that I buy in the next 12 months	4.07	3.89	4.09
I will reduce household food waste/ trash in the next 12 months	4.52	4.20	4.42

4.2 What drives SCOB and SCUB by country and what does not?

First, we analysed the drivers of sustainable consumption and curtailment behaviours by country. We considered present behaviours as outcome variables (consumption and curtailment) as well as future intentions to engage in sustainable food consumption and curtailment behaviours.

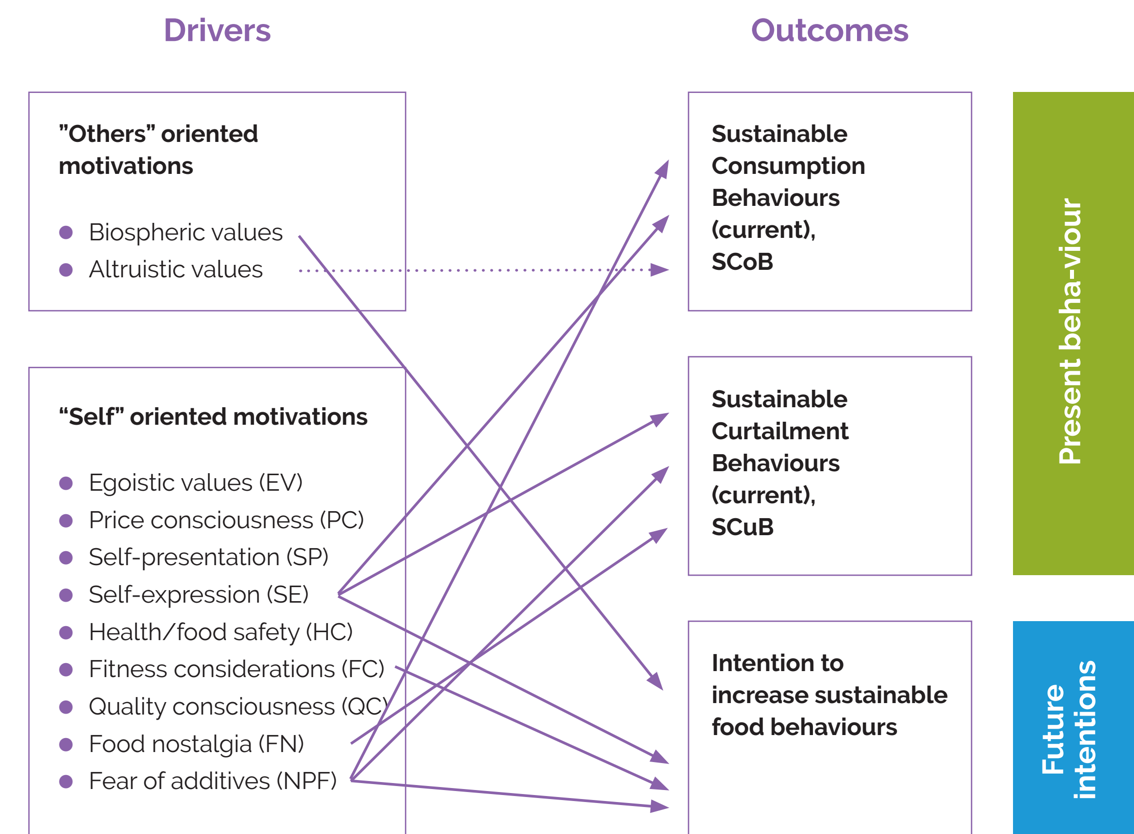
Brazil

Figure 1 presents the findings for Brazil. They show that present sustainable food behaviours are driven negatively by altruistic values ("helping others") and positively by self-expression ("sustainable behaviours reflect my self-view"), food nostalgia and health concerns (fear of additives). Thus, the Brazilian data suggests that the middle classes there engage in sustainable food behaviours out of self-interest only. Still, it is striking that the self-interest reflected in our data is devoid of intentions to impress others by being "seen to do the right thing", i.e., not associated with self-presentation. Instead, sustainable food behaviours matter to the middle classes in Brazil for self-expressive, health (fitness and additive-freedom) and nostalgic qualities. Perhaps more surprising is the finding that sustainable food consumption is driven by altruistic values negatively. I.e., the more altruistic someone is, the less sustainable food they consume. Potential reasons for this surprising finding are that altruistic middle-class consumers in Brazil do not believe in the ability of sustainable food consumption to help others. Part of this may have to do with ethical certification scepticism, i.e., their lack of belief in the ability of certifications such as Fairtrade to improve the lives of farmers. Similarly, neither may they identify locally/regionally produced food as supporting farmers in a positive manner.

Finally, future intentions to engage in sustainable food behaviours are driven by biospheric values ("helping the environment"), self-expression and health concerns (fitness consciousness and fear of additives).

In sum, it seems that Brazilian the middle-classes engage in sustainable food behaviours today only for their self-benefit yet those with a care for the environment express intentions to increase such behaviours in future.

Figure 1 Survey findings for Brazil



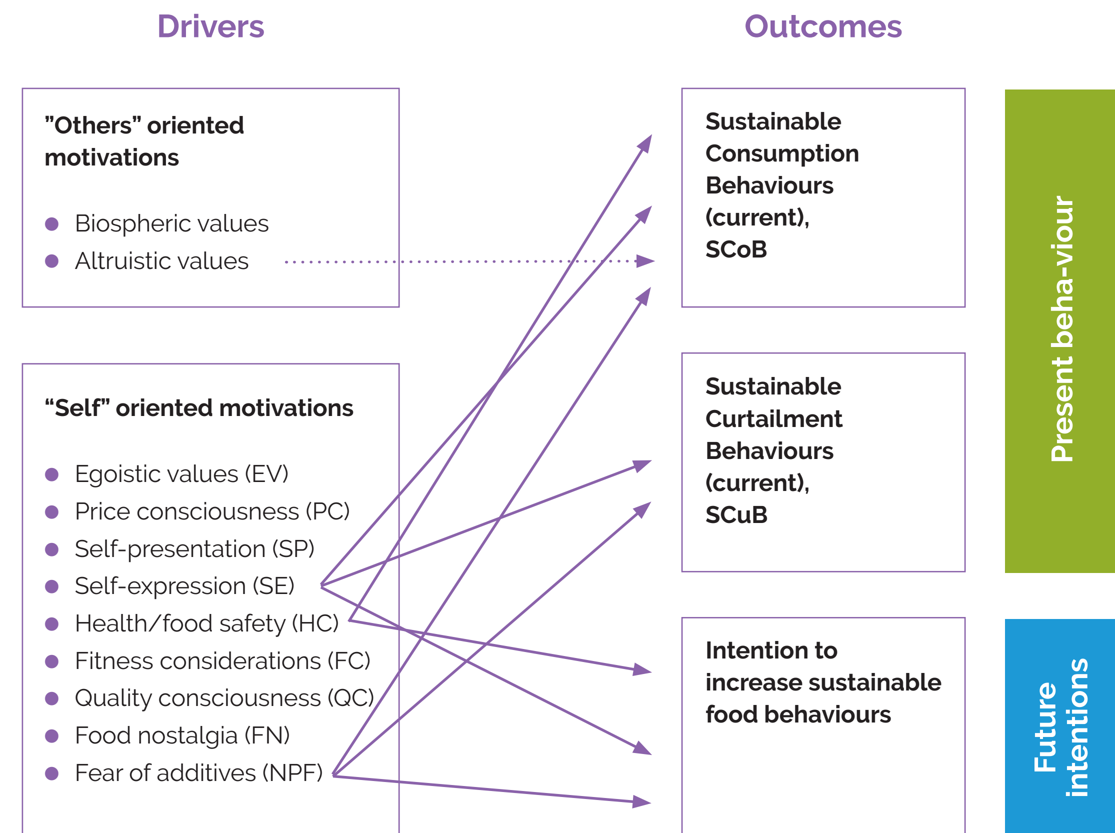
South Africa

Figure 2 presents the findings for South Africa. They show that present sustainable food behaviours are driven negatively by altruistic values ("helping others"), and positively by self-expression ("sustainable behaviours reflect my self-view), and health concerns (food safety and fear of additives). Meanwhile, future intentions to engage in sustainable food behaviours are driven by self-expression and health concerns (food safety and fear of additives).

As in Brazil, the South African data suggests that the middle classes there engage in sustainable food behaviours only out of self-interest. Similarly, future intentions are predicted only by self-related motives. As in the Brazilian case, the self-interest reflected in our data is, again here, devoid of intentions to impress others by being seen to do the right thing. Instead, self-expressive and health benefits (fitness and additive-freedom) drive preference.

As with the Brazil sample, the possibly most striking finding here is that sustainable food consumption is driven by altruistic values, yet negatively. As in Brazil, potential reasons are ethical certification as well as the lack of confidence that locally/regionally produced food will support farmers in a substantial manner.

Figure 2 Survey findings for South Africa



China

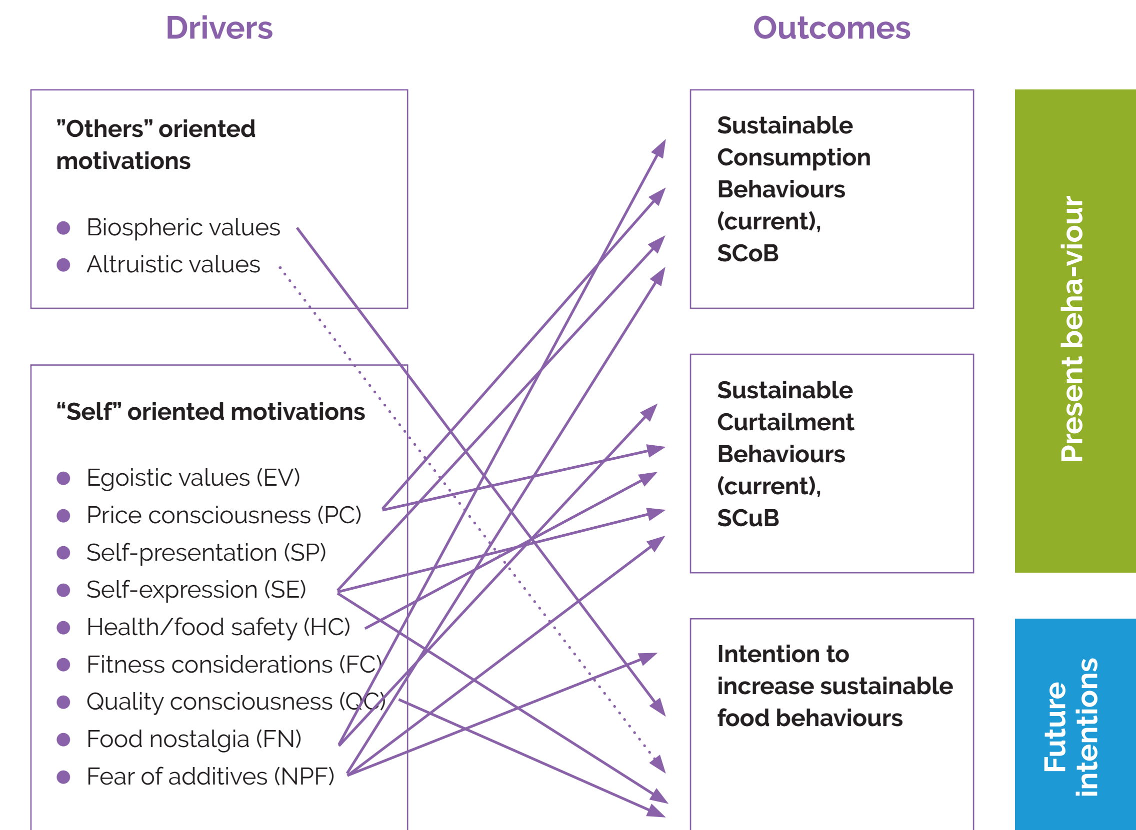
Figure 3 presents the findings for China. They show that current sustainable food behaviours in China are driven solely by self-interest in form of self-expression and health benefits (health concerns and fear of additives), which overlaps with the other two countries. In addition, the sustainable food behaviours of the Chinese middle-classes are further driven by quality (positively) and price consciousness (negatively), as well as food nostalgia. This is an interesting finding, as these drivers do not overlap with those in Brazil and South Africa. The message emerging from the data is that Chinese consumers are motivated to engage in sustainable food behaviours out of a larger range of considerations and, specifically, that they expect sustainable food to be both higher in quality (an attractant to consuming it) and in price (a barrier).

In contrast to the former two countries, altruism does not drive current sustainable food behaviours at all. Taken together, the findings of the three countries are consistent in that neither altruistic nor biospheric values positively drive sustainable consumption or curtailment behaviours. Put simply, the middle-class consumers in our samples are driven by self-interest in their current sustainable food behaviours. They do not seem to believe that such behaviours, as of today, help improve the environment or the lives of others. These findings are important as they are out of line with previous research on Global North consumers.

Finally, future intentions to engage in sustainable food behaviours in China are driven by self-interest in form of, again, self-expression, quality consciousness and health concerns (fear of additives). However, and strikingly in the case of China: also altruistic and biospheric values drive future sustainable food behaviours. These findings suggest that concern for others and the environment is not yet a reason for Chinese middle classes to consume sustainable food but it is likely to become one in future.

Taken together, the findings on the influence of others-oriented drivers of future intentions to engage in sustainable consumption and curtailment behaviours in our three countries is not straightforward. Such intentions are driven by biospheric values in Brazil and by both biospheric and altruistic values in China. In South-Africa, such values play no role in shaping future intentions. The takeaway message about the role of others-oriented motivations to engage in sustainable food behaviours in this context are twofold. First, others-oriented motivations do not shape current behaviour in any of the three countries. Instead, people in all three countries engage in sustainable food behaviours out of self-interest. Second, others-oriented motivations shape future intentions to perform sustainable food behaviours only partially. Thus, and overall, the belief in middle-class consumers in Brazil, South Africa, and China in the ability of sustainable food consumption and curtailment behaviours to "save the planet" or "to help others" seems limited.

Figure 3 Survey findings for China



4.3 Additional Analyses

To gain deeper insights, we further broke down the samples by middle classness and income levels. Details on the categorisation are provided below.

Middle-Classness

The scores below were based on a median split in terms of consumers middle classness in order to categorise them as low vs. high middle classness (Table 7). The middle-class index was based on five items considering ownership or engagement with the following: Car, home, private health insurance, fee paying school, and studied at university. Each of these items contributed 1 point, with scores ranging from 0 to 5. The median was 4, therefore, participants below 4 were classified as low in terms of middle-classness, while those with scores at 4 and above were classified as high in terms of middle-classness.

Overall, when comparing consumers scoring low vs. high in terms of their middle classness, increases in mean SCOB and SCUB scores between the two groups are evident in all three countries, but highest among Brazilian consumers compared to South African and Chinese (Table 7). In terms of ISB, increases are highest among Chinese consumers, followed by Brazil and South Africa. This finding suggests that high middle classness consumers tend to engage in more sustainable behaviours.

Table 7 Aggregated scores by middle classness (low vs high)

Full sample	Brazil		South Africa		China	
	Low (229)	High (299)	Low (259)	High (270)	Low (161)	High (368)
SCOB	2.64	2.81	2.77	2.89	2.88	2.96
SCUB	2.67	2.85	2.66	2.73	2.89	2.94
ISB	4.19	4.38	3.97	4.12	4.08	4.33

Income

The obtained income data was divided into 6 income ranges (Table 8). Low income (within middle class) corresponds to the first three income ranges, while high income (within middle class) corresponds to the 3 top income ranges. The table below shows a summary of the low (1-3) and high (4-6) income middle class ranges. Overall, when comparing consumers scoring low vs. high in terms of their income, increases in SCOB and SCUB are evident in all three countries, but South Africa demonstrates the smallest relative increase among the three countries. In terms of ISB, the highest increase is evident among Chinese consumers, followed by Brazil and, surprisingly, South Africa shows a slight decrease.

Table 8 Income ranges

	Low middle class income range	High middle class income range
Brazil	3750 BRL – 11250 BRL	11251 BRL – 20000 BRL
South Africa	12750 ZAR – 38300 ZAR	38301 ZAR – 67000 ZAR
China	5801 RMB-17500 RMB	17501RMB - 30500 RMB

BRL = Brazilian Real; ZAR = South African Rand; RMB: Renminbi

Table 9 SCOB, SCUB, ISB aggregated by low vs high income ranges

Full sample	Brazil		South Africa		China	
	Low (435)	High (93)	Low (403)	High (126)	Low (178)	High (351)
SCOB	2.72	2.81	2.82	2.85	2.85	2.97
SCUB	2.74	2.88	2.68	2.75	2.84	2.97
ISB	4.27	4.41	4.07	3.99	4.10	4.33

*numbers in parentheses represent the sample size for each sub-sample

4.4 Summary of Survey Findings

Middle class consumers in Brazil, South Africa and China display a tendency to currently engage in sustainable consumption and curtailment behaviours. The intent to engage in the next 12 months in such behaviours is even more pronounced. These findings are consistent across all three countries. Further, consuming home cooked and fresh foods seem to be a priority in all three countries. Interestingly, reducing food waste by, for example, using leftovers, are prevalent curtailment behaviours in all three countries.

Moreover, our findings suggest that sustainable food consumption is determined by others-oriented motivations in Brazil and South Africa but not China. I.e., concern for others and the environment is not yet a reason for Chinese middle classes to consume sustainable food. Only self-oriented motivations like self-expression and quality consciousness contribute to sustainable food consumption and curtailment behaviours. However, the data also shows that when it comes to future intentions to engage in sustainable food behaviours those others-related motivations are important also for Chinese consumers. Overall, our findings also show that sustainable consumption is not used, in any of the three countries, as a way to self-present, i.e., to craft perceptions of "sophistication" about oneself in others. These findings suggest that engaging in sustainable food behaviours does deliver status benefits to middle-class consumers in any of the three countries of focus.

5. Findings and Levers for Change

Defining Sustainable and Ethical Food:

We found no single understanding of sustainable and ethical food within or between our three food contexts, though healthy, safe food was felt by most to be the basis of sustainable food systems.

To be sustainable and ethical, food must at minimum be nutritious, safe, desirable, and accessible, and produced in ways that don't make it harder to feed people in the future.

Sustainability and ethics are not just about organics or climate crisis, but involve everything from food safety to working conditions for farm workers, to healthy soils, zero carbon, strong local economies, reducing waste, and robust local food cultures, to animal welfare and its role in preventing disease transmission. Sustainable and ethical food systems also need to be resilient to economic downturns or weather events and responsive to social, economic, and cultural factors.

Accessing and Consuming Sustainable and Ethical Food:

What unites the emerging middle classes across all three of our city contexts are time pressures, and the precarity of their disposable income. For some communities, the sustainable or ethical food choices available locally are limited.

Food practices and customs are local but are connected to increasingly globalised food systems.

Food consumption choices involving considerations of ethics and sustainability interplay in different ways with fear, altruism, convenience, memory, belonging, and aspiration.

Middle class consumers in Brazil, South Africa and China display a tendency to currently engage in sustainable consumption and curtailment behaviours. The intent to engage in the next 12 months in such behaviours is even more pronounced. These findings are consistent across all three countries.

Consuming home cooked and fresh foods seem to be a priority in all three countries. Interestingly, reducing food waste by, for example, using leftovers, are prevalent curtailment behaviours in all three countries.

Barriers to, and Opportunities for, Change:

Barriers:

More consumers reported wanting to eat ethical and sustainable foods than did so in practice. These foods were often perceived to be more expensive and only on sale in more affluent areas. Many participants felt high costs of these products to be prohibitive, seeing eating ethical and sustainable food as a lifestyle choice of those rich in time and money.

Participants reported struggling to balance and evaluate the conflicting and overlapping messages concerning how food is produced and processed and the implications of that on health and society. There are three main responses to this across all three case studies: resignation (whether expressed through indifference, powerlessness, or clinging to habitual practices); guilt about not being able to act correctly, and effort to try and eat well across all the different messages.

Many consumers mistrusted labels indicating 'ethical' and 'sustainable' products and struggled to juggle and prioritise the different demands on their pocket, time and knowledges.

Knowing about a topic is not the same as being able to act on that knowledge. Diets are personal and are entangled with a consistent sense of self and of belonging. Participants reported difficulties in making positive changes to their food practices where notions of sustainable food conflicted with other considerations.

Opportunities:

There is an opportunity to prompt desire for sustainable and ethical foods by building on nascent awareness that personal health is entangled with the health of the environments in which food is produced. For example, in Guangzhou this opportunity is entangled with the concept of tian-ren-he-yi (The unity of people and nature).

Whether for pleasure, family health, traditional cultures, climate crisis, labour rights, food in all its guises is in some way about care. There s an opportunity to harness people's desire to care by supporting the availability of environmentally sustainable products such as organics to all communities, for example through buying co-operatives or public procurement.

There is an opportunity for food system actors (companies, government, civil society) to co-create transparent messaging enabling consumer/citizens to make dietary choices that align with their desire to care for themselves and others.

There is a need for joined up policy and renewed transparency on the operation and regulation of food systems from farm to post-consumer 'waste'. This is essential to overcome the feelings of powerlessness and distrust. Across all three cities some participants felt it was the responsibility of government to use 'choice editing' to make sure that only healthy, safe, and sustainable food was on sale.

There is an opportunity to harness the best of local food traditions and practices as part of community pride and desirable lifestyle choices, including promoting traditional crops suited to local growing conditions and validating and facilitating mundane practices of re-use, frugality and care.

References:

Agência Brasil (11/10/2021) Financial market points out that inflation should close the year at 8.59%. Available at https://agenciabrasil.ebc.com.br/economia/noticia/2021-10/mercado-financeiro-diz-que-inflacao-deve-fechar-o-ano-em-859#:~:text=A%20meta%20de%20infla%C3%A7%C3%A3o%20de,14%25%20registrados%20na%20semana%20passada , access in October, 2021.

Ailawadi K.L., Neslin S.A., Gedenk K. (2001). Pursuing the value-conscious consumer: store brands versus national brand promotions. Journal of Marketing, 65 (1), 71-89.

Akatu (2012) Rumo à Sociedade do Bem-Estar. <http://www.akatu.org.br/pesquisa/2012/PESQUISAAKATU.pdf> (accessed 02.06.14).

Alves MA, Pereira LTM (2015) "A Rastreabilidade dos Alimentos como Política Pública: Exercício do Direito à Informação e o Compromisso Ético com o Cumprimento das Normas Ambientais". Revista Monografias Ambientais. Santa Maria 14 (2) 170-182.

Ariztia T, Kleine D, Brightwell MG, Agloni N, Afonso R and Bartholo R (2014) "Ethical consumption in Brazil and Chile: institutional contexts and development trajectories" Journal of Cleaner Production 63 84– 92.

Barbosa L, Portilho F, Wilkinson J and Dubeux V (2014) "Trust, participation and political consumerism among Brazilian youth" Journal of Cleaner Production 63 93-101.

China Chain Store & Franchise Association, 2019. Top 100 China Stores in China 2018.http://www.ccfa.org.cn/portal/cn/xiangxi.jsp?id=439693&type=10003

Dickson-Spillmann, M., Siegrist, M., & Keller, C. (2011). Attitudes toward chemicals are associated with preference for natural food. Food quality and preference, 22(1), 149-156.

Erasmus, Z. (2000) "Some kind of white, some kind of black: Living the moments of entanglement in South Africa and its academy". In: B. Hesse, ed. Un/settled Multiculturalisms: Diasporas, Entanglements, Transruptions. London: Zed, pp. 185–207

European Commission (n.d.). Developments and Forecasts of Growing Consumerism. Competence Centre on Foresight. Retrieved November 2nd, 2021. URL: https://knowledge4policy.ec.europa.eu/foresight/topic/growing-consumerism/more-developments-relevant-growing-consumerism_en

EU SME Centre. 2013. "The Food and Beverage Market in China" Accessed January 07, 2018. https://www.statista.com/outlook/253/117/food-beverages/china#market-revenue

Eyhorn, F., Muller, A., Reganold, J. P., Frison, E., Herren, H. R., Luttikholt, L., ... & Smith, P. (2019). Sustainability in global agriculture driven by organic farming. Nature Sustainability, 2(4), 253-255.

Gao, J., Lin, S. S., & Zhang, C. (2020). Authenticity, involvement, and nostalgia: Understanding visitor satisfaction with an adaptive reuse heritage site in urban China. Journal of Destination Marketing & Management, 15, 100404.

Hung P-Y (2013) "Tea forest in the making: tea production and the ambiguity of modernity on China's southwest frontier" Geoforum 47 178-188.

Jackson, P. (2015). Anxious appetites: Food and consumer culture (Vol. 2). Bloomsbury Publishing.

Kantar Worldpanel. 2017. "Market Share of the Top Ten Retailers in China". Kantar Worldpanel website. Accessed November 11, 2017. https://www.kantarworldpanel.com/cn/grocery-market-share/china/snapshot

Kaus W (2013) "Conspicuous consumption and 'race': evidence from South Africa" Journal of Development Economics 100 63-73.

Klein J (2009) “Creating ethical food consumers? Promoting organic foods in urban Southwest China” Social Anthropology 17 74-89.

Kleine D and Brightwell MdG (2015) “Repoliticising and scaling-up ethical consumption: lessons from public procurement for school meals in Brazil” 67 135-147.

Kusenbach M (2012) “Go-alongs” In Handbook of Qualitative Research in Education Deelamont S (Ed) Edward Elgar Publishing), pp. 252-264

Lichtenstein, P., Harris, J. R., Pedersen, N. L., & McClearn, G. E. (1993). Socioeconomic status and physical health, how are they related? An empirical study based on twins reared apart and twins reared together. Social science & medicine, 36(4), 441-450.

Malär, L., Krohmer, H., Hoyer, W. D., & Nyffenegger, B. (2011). Emotional brand attachment and brand personality: The relative importance of the actual and the ideal self. Journal of marketing, 75(4), 35-52.

Mazetti, H (2012) “O consumo consciente e a governamentalidade neoliberal” Mediação, Belo Horizonte 14 (14) 97-111.

McEwan, C., Hughes, A., & Bek, D. (2015). Theorising middle class consumption from the global South: A study of everyday ethics in South Africa’s Western Cape. Geoforum, 67, 233-243.

McKinsey (2016) The Modernization of the Chinese Consumer (March) (http://www.mckinseychina.com/wp-content/uploads/2016/03/The-Modernization-of-the-Chinese-Consumer_EN.pdf) (accessed 02/04/17).

Meah A. and Jackson P (2017) “Convenience as care: culinary antinomies in practice” Environment and Planning A 49(9) 2065-2081

Moorman C. (1990). The effects of stimulus and consumer characteristics on the utilization of nutrition information. Journal of Consumer Research, 17 (3), 362-374.

Moseley W and Battersby J (2020) The vulnerability and resilience of African food systems, food security, and nutrition in the context of the COVID-19 pandemic. African Studies Review, 63 (3), 449-461.

National Bureau of Statistic of China. 2016. China Statistical Yearbook 2016. Accessed on June 20, 2019. http://www.stats.gov.cn/tjsj/ndsj/2016/indexch.htm

National Bureau of Statistic of China 2019 http://www.stats.gov.cn/tjsj/zxfb/201902/t20190228_1651265.html

Nespolo D, Borelli VA, Fidelis ACF, Machado SM, Olea PM and Rocha JM (2016) “Consumo consciente, meio ambiente e desenvolvimento sustentável: análise da tomada de decisão com base nas heuristicas” Rev. Adm. UFSM, Santa Maria 9 137-148.

Ndetlyana M (2014) Middle-Class in South Africa: Significance, Role and Impact (BRICS 6th Academic Forum, March 10th 2014).

Oxford Economics (2016) Future Trends and Market Opportunities in the World’s Largest 750 Cities: How the Global Urban Landscape Will Look in 2030 (December 2016)

Park C-H (2014) “Nongjiale tourism and contested space in rural China” Modern China. 40.5: 519-548.

Portilho F (2010) “Self-attribution of responsibility: consumers of organic foods in a certified street market in Rio de Janeiro, Brazil” Etnográfica [Online] 14 (3) Online desde 21 Outubro 2011, URL : http://etnografica.revues.org/203 ; DOI : 10.4000/

Portilho F, Castaneda M and Castro IRR (2011) “A alimentação no contexto contemporâneo: consumo, ação política e sustentabilidade” Ciência & Saúde Coletiva 16 (1) 99-106.

Portilho F (2005) Sustentabilidade Ambiental, Consumo e Cidadania (São Paulo: Cortez).

Rede Penssan - Rede Brasileira de Pesquisa em Soberania e Segurança Alimentar, 2021. Vigisan: Inquérito Nacional sobre Insegurança Alimentar no Contexto da Pandemia da Covid-19 no Brasil. Rio de Janeiro. Available at http://olheparaafome.com.br/, access in July, 2021.

Scott, S., Si, Z., Schumilas, T., & Chen, A. (2018). Organic Food and Farming in China: Top-down and Bottom-up Ecological Initiatives. Routledge.

Silva MG, Araújo NMS and Santos JS (2012) “Consumo consciente: o ecocapitalismo como ideologia” R. Katál., Florianópolis 15 (1) 95-111.

Sirieix L, Kledal PR and Sulitang T (2011) “Organic food consumers’ trade-offs between local or imported, conventional or organic products: a qualitative study in Shanghai” International Journal of Consumer Studies 35 670-678.

Statista (2017) Leading countries based on number of Facebook users as of April 2017 https://www.statista.com/statistics/268136/top-15-countries-based-on-number-of-facebook-users/ (accessed 24 April 2017)

Udjo EO (2008) The Demographics of the Emerging Black Middle Class in South Africa (University of South Africa Bureau of Market Research Reports, 375, Pretoria, Bureau of Market Research).

United Nations (n.d.). Goal 12: Ensure sustainable consumption and production patterns. Sustainable Development Goals. Retrieved October 19th, 2021, from URL: https://www.un.org/sustainabledevelopment/sustainable-consumption-production/

Van Doorn J., Verhoef P.C. (2015). Drivers of and Barriers to Organic Purchase Behavior. Journal of Retailing, 91 (3), 436-450.

Verstuyf, J., Vansteenkiste, M., & Soenens, B. (2012). Eating regulation and bulimic symptoms: The differential correlates of health-focused and appearance-focused eating regulation. Body Image, 9(1), 108-117.

Visagie J (2013a) “Who are the middle class in South Africa? Does it matter for policy?” Econ 3x3 29th April, (http://www.econ3x3.org/article/who-are-middle-class-south-africa-does-it-matter-policy#sthash.5ZpGM-8nu.dpuf) (accessed 09/04/14).

Visagie J (2013b) “Income groups: things are tight around the middle” Mail and Guardian 2nd August (http://mg.co.za/article/2013-08-02-00-things-are-tight-around-the-middle) (accessed 09/04/13).

Willer H and Lernoud J (2016) The World of Organic Agriculture: Statistics and Emerging Trends 2016. (Research Institute of Organic Argriculture (FiBL), Frick & IFOAM – Organics International, Bonn).

Whelan, T., & Fink, C. (2016). The comprehensive business case for sustainability. Harvard Business Review, 21(2016).

Wilcox K., Kim H.M., Sen S. (2009). Why Do Consumers Buy Counterfeit Luxury Brands? Journal of Marketing Research, 46 (2), 247-259.

Willer H and Lernoud J (2016) The World of Organic Agriculture: Statistics and Emerging Trends 2016. (Research Institute of Organic Argriculture (FiBL), Frick & IFOAM – Organics International, Bonn).

Wu X (2014) "The farmhouse joy (nongjiale) movement in China's ethnic minority villages" The Asia Pacific Journal of Anthropology 15 158-177.

Yan Y (2012) "Food safety and social risk in contemporary China" The Journal of Asian Studies 71 705-729.

Young, William, Kumju Hwang, Seonaidh McDonald, and Caroline J. Oates. "Sustainable consumption: green consumer behaviour when purchasing products." Sustainable development 18, no. 1 (2010): 20-31.

Zhang QF and Pan Z (2013). The transformation of urban vegetable retail in China: Wet markets, supermarkets and informal markets in Shanghai. Journal of Contemporary Asia 43(3), 497-518.

Zhong S., Crang, M. & Zeng, G. (2020). "Constructing freshness: the vitality of wet markets in urban China." Agriculture and Human Values 37 175-185

Zhong S, Chen Y, and Zeng G (2021) "Multiple problematisations: The logics governing wet markets in two Chinese cities" Urban Studies

Acknowledgements:

We are grateful for the Economic & Social Research Council grant (ES/R005303) funding the research for this report. We thank all those participating in the research for their time and insight. The views expressed in this report are those of the authors. We also acknowledge an N8 Agri-food small grant, which served as seed corn funding for this project.

Itambé
piraquê