



Mapping of food industry strategies to influence public health policy, research and practice in South Africa

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Abstract

Objectives To identify the corporate political activity (CPA) of food industry actors in South Africa.

Methods We studied the CPA of ten different food actors for the period Jan 2018–April 2019. We used a systematic approach and existing framework to collect and analyse information available in the public domain, including material from the industry, government, academia and civil society.

Results Food industry actors in South Africa established multiple relationships with various parties in and outside the South African government. These included interactions between large food companies and the Department of Basic Education, the Department of Sport & Recreation, the Department of Health, and the Department of Agriculture. In addition, the food industry-sponsored community programs, with a focus on poverty alleviation and undernutrition. Moreover, food industry actors influenced science were directly involved in policy-making and helped frame the debate on diet and public health in South Africa.

Conclusions It is crucial that there is increased transparency, disclosure, and awareness of industry strategies, and that mechanisms to address and manage industry influence are strengthened in the country.

Keywords Commercial determinants of health · Corporate political activity · Food industry · Non-communicable diseases

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Introduction

Malnutrition and non-communicable diseases (NCDs) are major health issues in South Africa. The prevalence of overweight for girls aged 5 to 19 years old increased from 8.9% in the early 2000s to 29.4% in 2016, with similar increases observed for boys (Global Nutrition Report 2018). The consumption of ultra-processed food products, which are often high in fat, sugar and salt, and lack essential nutrients, is particularly problematic (Igumbor et al. 2012; Monteiro et al. 2013; Delobelle et al. 2016). In parallel, the prevalence of underweight is still high (15.3% for girls and 24.3% for boys, in 2016), although these rates have decreased in recent years (Global Nutrition Report 2018).

Government policy action, such as regulations to restrict the exposure of children to marketing of unhealthy products, are likely to help curb the NCDs epidemic (The United Nations 2011). In December 2017, the South African government passed a Health Promotion Levy with increased taxes on sugar-sweetened beverages (SSBs) (South African Revenue Service 2018). South Africa is

also discussing the development of a new front-of-pack labelling system and restrictions to unhealthy food marketing in and around schools, in order to improve the food environment in the country.

There is growing evidence that the food industry, particularly large transnationals, uses a diverse range of practices to influence public health policy, research and practice (The PLoS Medicine Editors 2012; Moodie et al. 2013; Mialon et al. 2015). These practices are referred to as “corporate political activity” (CPA) (Hillman and Hitt 1999). For the food industry, the CPA consists of action-based strategies (instrumental strategies) and argument-based strategies (discursive strategies) (Table 1).

Importantly, there is limited research on the CPA of the food industry in Africa. This is despite increasing acknowledgment that the industry seems to have been influential during the development and implementation of recent food policies in the country. In a study published in 2016, Delobelle et al. (2016) explained that the food industry was also lobbying for self-regulation in areas such as marketing to children. A recent study found that in South Africa, food industry actors misrepresented scientific and economic evidence during the development of the Health Promotion Levy, through the production and dissemination of work that would create doubt and ignorance, which the authors described as “agnogenic practices” (Fooks et al. 2019). The food industry has continued to critique the policy, with claims, for example, that it is contributing to the country’s economic decline and loss of jobs (Grant-Marshall 2018; Holmes 2018).

Our research objective was to identify, if they existed, the CPA strategies of the food industry in South Africa.

Methods

For our purposes here, the term “food industry” refers to: manufacturers of ultra-processed foods and sugar-sweetened beverages; trade associations that represent these manufacturers; public relations firms who work on behalf of the above industry actors; and other individuals or groups affiliated with the food industry.

We followed the recommendations of Mialon et al. (2015) to identify the CPA of the food industry using publicly available data, as described below. This approach has, for example, been used in Europe (Mialon and Mialon 2018; Tselengidis and Östergren 2019), South East Asia (Jaichuen et al. 2018) and the Western Pacific (Mialon et al. 2016a, b), amongst others.

Identification of industry actors

We studied the CPA of the most prominent food industry actors in the South African market. We used the global market research Euromonitor Passport database to identify the five largest packaged food manufacturers and largest sugar-sweetened beverages manufacturer (national-level ownership, in terms of market shares) in South Africa in 2018: Tiger Consumer Brands Ltd (Tiger Brands); Pioneer Foods (Pty) Ltd (Pioneer Foods); Clover SA (Pty) Ltd (Clover); Parmalat SA (Pty) Ltd (Parmalat); Nestlé South Africa (Pty) Ltd (Nestlé); and Coca-Cola South Africa (Pty) Ltd (Coca-Cola).

We included three of the most prominent trade associations in the food industry: the South African Sugar Association (SASA); the Consumer Goods Council of South Africa (CGCSA); the Beverage Association of South Africa (BEVSA); and another prominent organisation supported by the food industry, the International Life Science Institute (ILSI) South Africa. These organisations were identified through discussions with local experts. Coca-Cola and Tiger Brands were members of BEVSA, and all of the companies, except Clover, were members of the CGCSA.

Identification of sources of information

We included different sources of information in this study, such as industry material (websites, social media accounts), government material (websites of different Ministries, of the Parliament, etc.), other material from professional associations’ websites and newspaper articles. A detailed list of sources consulted for this study is available in Supplementary Material 1. In addition to these sources of information, we consulted with two experts in public health nutrition from South Africa, who shared their experience on the CPA of the food industry in the country and helped to ensure we reviewed relevant sources of information.

Data collection and analysis

Data collection was conducted in April 2019 for data published between Jan 2018–April 2019. All data collected was in English. The first author led data collection and analysis. On social media, when one message (or messages with a similar content) was shared more than once, we only included it once in our database. Information was collected in an Excel database, including the name of the company; the source of information (media, industry, etc.); the data identified online; the coding of that data, amongst the different CPA strategies; any important comment to help understand the context of the data collected; and the URL

Table 1 Conceptual framework for categorising the corporate political activity of the food industry (Mialon et al. 2018)

Instrumental strategies		
	Practices	Mechanisms
Coalition management	Constituency recruitment—external—establish relationships with key opinion leaders and health organisations	Promote public–private interactions with health organisations
		Support professional organisations, including through funding and/or advertising in their publications
		Establish informal relationships with key opinion leaders
		Support the placement of industry-friendly personnel within health organisations
		Support physical activity initiatives
Coalition management	Constituency recruitment—external—seek involvement in the community	Support events (such as for youth or the arts) and community-level initiatives
		Undertake corporate philanthropy
		Support physical activity initiatives
		Support events (such as for youth or the arts) and community-level initiatives
		Support events (such as for youth or the arts) and community-level initiatives
Coalition management	Constituency recruitment—external—Establish relationships with the media	Establish close relationships with media organisations, journalists and bloggers to facilitate media advocacy
		Establish fake grassroots organisations (‘astroturfing’)
		Procure the support of community and business groups to oppose public health measures
		Discrediting public health advocates personally and publicly, e.g. through the media, blogs
		Infiltrate, monitor the operation and advocacy strategies of public health advocates, groups and organisations
Coalition management	Constituency fabrication	Creating antagonism between professionals
		Discrediting public health advocates personally and publicly, e.g. through the media, blogs
		Infiltrate, monitor the operation and advocacy strategies of public health advocates, groups and organisations
		Discrediting public health advocates personally and publicly, e.g. through the media, blogs
		Infiltrate, monitor the operation and advocacy strategies of public health advocates, groups and organisations
Coalition management	Constituency fragmentation and destabilisation	Creating antagonism between professionals
		Discrediting public health advocates personally and publicly, e.g. through the media, blogs
		Infiltrate, monitor the operation and advocacy strategies of public health advocates, groups and organisations
		Discrediting public health advocates personally and publicly, e.g. through the media, blogs
		Infiltrate, monitor the operation and advocacy strategies of public health advocates, groups and organisations
Information management	Production	Fund research, including through academics, ghostwriters, own research institutions and front groups
		Cherry-pick data that favour the industry, including use of non-peer reviewed or unpublished evidence
		Participate in and host scientific events
		Propose industry-sponsored education
Information management	Amplification	Suppress the dissemination of research that does not fit the industry’s interests
		Emphasise disagreement among scientists and focus on doubt in science
		Criticise evidence, and emphasise its complexity and uncertainty
		Fronting: concealing industry links to information/evidence, including through the use of scientists as advisers, consultants or spokespersons
Information management	Suppression	Suppress the dissemination of research that does not fit the industry’s interests
		Emphasise disagreement among scientists and focus on doubt in science
		Criticise evidence, and emphasise its complexity and uncertainty
		Fronting: concealing industry links to information/evidence, including through the use of scientists as advisers, consultants or spokespersons
Information management	Credibility	Fronting: concealing industry links to information/evidence, including through the use of scientists as advisers, consultants or spokespersons
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		Fronting: concealing industry links to information/evidence, including through the use of scientists as advisers, consultants or spokespersons
Direct involvement and influence in policy	Indirect access	Lobby directly and indirectly (through third parties) to influence legislation and regulation so that it is favourable to the industry
		Use the “revolving door”, i.e. ex-food industry staff work in government organisations and vice versa
		Use the “revolving door”, i.e. ex-food industry staff work in government organisations and vice versa
		Use the “revolving door”, i.e. ex-food industry staff work in government organisations and vice versa
Direct involvement and influence in policy	Incentives	Fund and provide financial incentives to political parties and policy makers (donations, gifts, entertainment or other financial inducements)
		Fund and provide financial incentives to political parties and policy makers (donations, gifts, entertainment or other financial inducements)
		Fund and provide financial incentives to political parties and policy makers (donations, gifts, entertainment or other financial inducements)
		Fund and provide financial incentives to political parties and policy makers (donations, gifts, entertainment or other financial inducements)
Direct involvement and influence in policy	Threats	Threaten to withdraw investments if new public health policies are introduced
		Threaten to withdraw investments if new public health policies are introduced
		Threaten to withdraw investments if new public health policies are introduced
		Threaten to withdraw investments if new public health policies are introduced
Direct involvement and influence in policy	Actor in government decision making	Seek involvement in working groups, technical groups and advisory groups
		Seek involvement in working groups, technical groups and advisory groups
		Seek involvement in working groups, technical groups and advisory groups
		Seek involvement in working groups, technical groups and advisory groups
Direct involvement and influence in policy	Actor in government decision making	Provide technical support and advice to policy-makers (including consultation)
		Provide technical support and advice to policy-makers (including consultation)
		Provide technical support and advice to policy-makers (including consultation)
		Provide technical support and advice to policy-makers (including consultation)

Table 1 (continued)

Instrumental strategies		
	Practices	Mechanisms
Legal actions	Use legal action (or the threat thereof) against public policies or opponents	Litigate or threaten to litigate against governments, organisations or individuals
	Influence the development of trade and investment agreements	Influence the development of trade and investment agreements such that clauses favourable to the industry are included (e.g., limited trade restrictions, mechanisms for corporations to sue governments)
Discursive strategies		
Domain	Argument	
The economy	Stress the number of jobs supported and the money generated for the economy	
Governance	Demonise the ‘nanny state’	
Expected food industry costs	Policy will lead to reduced sales/jobs	
	Cost of compliance will be high	
Frame the debate on diet- and public health-related issues	Stress the good traits of the food industry	
	Shift the blame away from the food industry and its products, e.g. focus on individual responsibility, the role of parents, physical inactivity	
	Promote industry’s preferred solutions: education, balanced diets, information, public–private initiatives, self-regulation (reformulation)	

of the website where the information was collected. Data analysis was deductive and informed by the CPA framework described in Table 1. As categories of CPA strategies are not mutually exclusive, on some occasions observed examples were classified into multiple categories.

The third author reviewed the coding of 100% of the data, and the second author reviewed the coding of 10% of the data. Agreement about coding of the data was reached after discussion amongst all authors.

Reporting of results

We include examples that have been observed during data collection to illustrate the broad range of CPA strategies of the food industry in South Africa. Each example is allocated with a code starting with the letter A, followed by a number (A1, A2, etc.), which correspond to the data collected in Supplementary Material 2.

Results

We found 107 examples of CPA by food industry actors in South Africa. In total, there were 49 examples of coalition management; 30 examples of information management; 4 examples of direct involvement and influence in policy-making; and 51 examples of discursive strategies (Table 2). We noted that, despite being competitors, many of the food industry actors included in our analysis worked

in partnership through different platforms, such as the CGCSA or ILSI South Africa.

Coalition management

Coalition management consists in recruiting constituencies in and outside the food industry to better influence public health policy, research and practice. This was the second most common observed CPA strategy of the food industry in South Africa, for the period of data collection.

First, we identified several alliances between food industry actors and public bodies in many sectors of the South African government, with the objective of promoting nutrition education or improving the health of the population in a broad sense (Table 3). This included partnerships with the Department of Agriculture; the Department of Basic Education (DBE); the Department of Health; and the Department of Sport & Recreation.

We identified multiple partnerships between food industry actors and the DBE. During the launch of a new nutrition centre in the country, where representatives from Tiger Brands were present, the Minister of Education declared:

We are proud to say that our partnership with Tiger Brands is a gold standard in collaboration between Government and our social partners. Your [Tiger Brands] investment in our sector is very critical in building a South Africa we envisaged back in 1994 during our period of innocence. [A105]

Table 2 Occurrences of corporate political activity strategies of the food industry (South Africa, Jan 2018–April 2019) (these categories are not mutually exclusive)

	Coalition management	Information management	Direct involvement and influence in policy	Legal strategies	Discursive strategies
Tiger Brands	15	2			1
Pioneer Foods	3				2
Clover South Africa	3				1
Parmalat South Africa		1			1
Nestlé South Africa	10	17			12
Coca-Cola South Africa	3	1			2
South African Sugar Association	9	6	2		7
Consumer Goods Council of South Africa	2				1
Beverage Association of South Africa	4	2	2		24
International Life Science Institute—ILSI South Africa		1			
Total number of occurrences	49	30	4	0	51

In South Africa, the “Nestlé for Healthier Kids initiative” was launched in May 2018 in the premises of the DBE. In addition, Nestlé and the DBE organised multiple events during 2018 that aimed to “educate children about healthy eating” [A47, A49, A52, A54-5, A62-4].

We noted that some of the initiatives developed by the industry in schools were branded. For example, Pioneer Foods’ breakfast programme provided children with a “selection of cereals such as Pronutro, Bokomo Corn Flakes, White Star Instant porridge to the schools; as well as bowls, spoons, long life milk and aprons for the food handlers.” [A70]

In addition to these partnerships with different branches of the government, some companies built alliances with local communities. For example, SASA donated sugar to more than 100 organisations [A78]:

Sugar is donated on a monthly basis to organisations implementing food security programmes for children, families and communities in chronically poor circumstances. Our involvement in this programme is motivated by the desire to help government address national priorities such as the alleviation of poverty and hunger and to contribute to its efforts to build a strong and healthy society. [A77]

SASA also had a “Sugar Industry Trust Fund for Education (SITFE)” which provided support to students in tertiary education. The alumni of the programmes included “a number of South Africa’s prominent leaders including Minister of Transport (...), Judge President of the Western Cape, (...) Minister of Cooperative Governance and Traditional Affairs (...) and his wife”. [A85]

Clover “donated a renovated, six bedroom house in Pretoria to the Children’s Haematology Oncology Clinic’s (CHOC) Childhood Cancer Foundation” [A35]. The donations were reported to come from money generated from the sales of products of the Clover Nutrikids brand [A34], which is marketed as providing healthy nutrition to kids [A35]. We noted that the event for the opening of the house was branded with the company’s logo [A35].

Actors in the food industry also built alliances with health professionals in nutrition and dietetics. Nestlé and the SASA sponsored the “Continuing Nutrition Education (CNE) Programme for Dietitians and Nutritionists” in 2019 [A66]. The CGCSA was an official partner of the National Nutrition Week [A31], and Tiger Brands was a sponsor of the Association for Dietetics in South Africa and of the Heart and Stroke Foundation of South Africa [A100, A106]. Tiger Brands hosted a “learning forum with the University of Johannesburg to engage with academic and public-sector thought leaders on the impact of in-school breakfast programmes” [A103].

Information management

We found multiple examples of the influence of the food industry on the dissemination of evidence in nutrition and public health. Through this strategy, the industry disseminates data that favours its products and practices, including through the use of non-peer-reviewed or -unpublished evidence and its presence in scientific events and in schools. The nutrition education programmes of the DBE and food industry actors, as described above, are examples of children being taught about nutrition and physical

Table 3 Identified alliances between food industry actors and the public sector (South Africa, Jan 2018–April 2019)

Industry actor	Partner in the public sector in South Africa	Other partners, when applicable	Partnership	Reference in Supplementary Material 3
Beverage Association of South Africa	Department of Sport and Recreation Department of Health		Education to “South Africans about the benefits of maintaining a balanced diet and engaging in physical activity as part of a #healthylifestyle”	A7
Coca-Cola South Africa	Department of Health	Global Fund to Fight AIDS, Tuberculosis and Malaria United States Agency for International Development (USAid) Bill and Melinda Gates Foundation	“Project Last Mile” “aims to support African governments in delivering lifesaving medicines and supplies to the hardest-to-reach communities across Africa”	A41
Nestlé South Africa	Department of Basic Education		“Nestlé for Healthier Kids initiative” aims at “Enhancing nutrition and physical education programmes to promote the health and wellbeing of children” Celebration of National Nutrition and Obesity Week in October 2018, which was themed as “Breakfast—the best way to start your day”	A57, A61
	Department of Agriculture		Nestlé Community Nutrition Awards “to promote a culture of gardening and organic food production as a means to reduce hunger and malnutrition”	A58
Pioneer Foods	Department of Basic Education		“Schools Breakfast Nutrition Programme” to provide “a healthy start to the day for more than 26 000 disadvantaged children”	A70
Sugar Association of South Africa	Department of Health		Sponsored an outdoor gym in KwaZulu-Natal	A87
	Department of Basic Education		Four-year partnership pilot programme with TREE, a specialist Early Childhood Development (ECD) organisation, to implement an integrated ECD programme in Pongola rural areas	A88
Tiger Brands	Department of Basic Education		In-school breakfast programme in partnership with the Department of Basic Education’s national school nutrition programme (NSNP)—around 67,500 children covered A prize in the Department of Basic Education’s annual NSNP awards for the best school and best district	A103, A105

activity by producers of food products. Nestlé and the DBE mentioned that they have “commissioned a nutrition education study done by the Vaal University of Technology to measure the impact of this initiative” [A56].

SASA has a “You & Sugar” website, which “offers science-based facts so that you are well equipped to make informed decisions for you and your family” [A89]. SASA organised a “Sugar and Health Symposium” in 2018, which included a presentation from the National Department of Health Director of Nutrition [A86]. SASA, on its websites, also proposed education material for children between 9 and 13 years old and for health professionals [A75–6]. It also participated in workshops for professionals

and indicated that it participated in “medical congresses, symposia and workshops” [A80].

BEVSA issued public statements questioning the science behind the introduction of the Health Promotion Levy and its likely effectiveness:

Some economists don’t believe the #sugartax will really change consumer behaviour when it comes to the high intake of sugar sweetened beverages. [A12]

Direct involvement and influence in policy

The food industry directly lobbied against the Health Promotion Levy on SSBs. The SASA chairperson

explained in the media that they got support from different ministries during the development of the sugar tax:

We would have been worse off, had it not been for the interventions by the President, the Portfolio Committee on Trade and Industry, the Departments of Trade and Industry, Economic Development, and Agriculture, Forestry and Fisheries. We hope the same spirit will prevail, with the relevant stakeholders, when it comes to addressing the exigent issue of the HPL [A83]

In parallel, food industry actors in South Africa publicly campaigned for the government to favour industry self-regulation rather than government intervention. For example, the industry developed the Healthy Food Options (HFO) Forum, where they engaged with the Department of Health [A11]. The stated aim of the Forum is to:

support the manufacture of, and facilitate access to, foods and non-alcoholic beverages that contribute to a healthy diet as part of a healthy lifestyle. (...) Monitored adherence to responsible marketing to children, as well as revised nutrition labelling and promotion of an active lifestyle also form part of these initiatives. [A72]

In line with this self-regulatory approach, BEVSA, Coca-Cola and Nestlé publicly said they were committed to limit their advertisement to children under 12 and to develop healthier options in their portfolio [A19, A40, A63].

Discursive strategies

Discursive (argument-based) strategies included an emphasis on the role of the industry in the economy, the expected costs of the implementation of public health policies, and a framing of the discussion about public health nutrition in ways that are mostly beneficial to the industry.

Role in the economy

The industry made several public claims about its role in the economy. Illustrative examples include the following public statements from industry associations:

Direct employment in the beverage industry has grown by about 5% per year since 2003, faster than SA's overall jobs growth. [A6]

The South African sugar industry provides employment in job starved regions often in deep rural areas where there is little other economic activity or employment opportunity. [A74]

Expected industry costs

Industry actors made numerous claims of job losses and risks to the economy following the introduction of the Health Promotion Levy.

“Sasa has argued that an increase in the Health Promotion Levy (HPL), commonly known as sugar tax would shrink the sugar industry, which contributes about R14 billion to the local economy. (...) “The industry is currently facing a number of serious challenges threatening its sustainability and survival.” (...) “As we speak, Coca Cola which uses sugar has proposed to retrench over 1000 workers and they say this is a direct link to sugar tax (...)” [A73]

Industry as a legitimate actor and promoting its preferred solutions

On different occasions, food industry actors positioned themselves as part of the solution in improving the healthiness of food environments in the country:

CCBSA is committed to working effectively with government and industry to design frameworks to encourage healthy societies. [A40]

At Nestlé, we believe that by helping new generations to learn how to eat well, drink water and take part in physical activities, we are enhancing quality of life and contributing to a healthier future, says Nestlé Public Affairs Manager, Monako Dibetle. [A52]

The solutions proposed by the industry included the provision of information on the products sold by the food companies, as well as reformulation of existing products or formulation of new products as well as a reduction in portion sizes. These solutions are directly aligned with self-regulating activities undertaken by food industry actors recently. Personal responsibility and education were also favoured by the industry as the preferred focus of intervention activities.

Not only did we reformulate products but [also] embarked on a number of different initiatives in partnership with the department of sports and recreation, such as the national recreation day and big walk, to drive increased education to all South Africans. [A30]

Moderation is key – we need to educate people about the consequences of overconsumption and, with this in mind, we have launched an awareness campaign on radio. [A2]

The same messages, including the importance of physical activity, were also prominently highlighted during the interactions between the industry and different ministries, including the DBE, as described above.

Discussion

We found multiple instances of the establishment of relationships between food industry actors and different actors in and outside the South African government. These included interactions between large companies (Coca-Cola, Nestlé, Tiger Brands and the SASA, amongst others) and the DBE, the Department of Sport & Recreation, the Department of Health and the Department of Agriculture. We also found evidence of the influence of the food industry on nutrition science in South Africa and identified that food industry actors developed a number of nutrition education programmes in schools across the country. In addition, food industry actors made extensive use of discursive strategies, emphasising the role of the industry in the economy and making claims that the proposed taxation on sugar-sweetened beverages would lead to economic losses for the country. Finally, we found evidence of direct industry influence and involvement in policy-making in South Africa, with self-regulation commonly advanced as the favoured intervention approach.

The observed CPA practices of the food industry in South Africa are designed to deflect criticism away from the role of the industry and its products in the NCDs epidemic and increase the chances that the solutions favoured by the industry are adopted by the government. This is despite evidence of the relative ineffectiveness of industry-preferred solutions (such as self-regulation), compared to other solutions (such as mandatory restrictions on marketing of unhealthy foods) (Koplan and Brownell 2010; Malhotra et al. 2015). Many of the community events sponsored by the food industry and targeted at children were heavily branded, which is in direct contradiction with industry commitments not to market to children under 12 years old (The International Food and Beverage Alliance 2018). Through these events, the industry products might also get the benefit of being seen to be “endorsed” by government departments, by association. Moreover, the interactions between the government and the industry could compromise the credibility, independence and priorities of the different Ministries. For example, in many community programmes sponsored by the food industry, there was a particular focus on poverty alleviation and undernutrition, but little investment in obesity or NCDs prevention. It could be argued that donations of sugar, for example, might be in direct contradiction with objectives to address the obesity and NCDs epidemic. Furthermore, the

content of the school-based nutrition education initiatives provided by the food industry may not be aligned with relevant national dietary guidelines, although the content of any such initiatives needs further investigation. The industry emphasis on its role in the economy (with a particular focus on job creation) could dissuade the government from regulating the industry. Similarly, the way that the food industry frames the debate on NCDs prevention to focus on the importance of physical activity, “moderation” of food intake, and individual responsibility, serves to deflect the attention away from the role of the food industry and its products in the NCDs epidemic (Greenhalgh 2019; Steele et al. 2019).

This is the first systematic study of the CPA of the food industry for the African continent. It was based on a research protocol that has been implemented in a range of other contexts internationally (Mialon et al. 2016a, b; Mialon and Mialon 2018). A key strength of this approach is that it adopts a comprehensive definition of CPA, including a systematic approach to monitoring multiple CPA strategies. Consistent with findings in other countries, the food industry has been observed to use a wide range of CPA strategies (Mialon et al. 2016a, b; Jaichuen et al. 2018; Mialon and Mialon 2018; Tselengidis and Östergren 2019). More specifically, food companies like Nestlé or Parmalat have been found to be involved in the shaping of science in the Western Pacific and Europe (Mialon et al. 2016b; Mialon and Mialon 2018). Coca Cola has been shown to support the physical activity narrative in many parts of the globe, including through third parties such as ILSI (Mialon et al. 2016a, b; Mialon and Mialon 2018; Greenhalgh 2019; Gómez 2019). Some of the CPA practices of the food industry described in this study have previously been identified in South Africa. For example, in 2012 Igumbor et al. (2012) found that retailers had their own nutrition education programmes and that fast-food restaurants sponsored physical activity programmes. Some companies in the country already had voluntary agreements regarding marketing to children, as well as their own nutrition labelling and reformulated their products (Igumbor et al. 2012; Delobelle et al. 2016). Finally, a recent study describes the many ways in which food industry actors misrepresented evidence during the development of the Health Promotion Levy (Fooks et al. 2019). Many of the practices described in our study were also used by the tobacco industry (Savell et al. 2014; Gilmore et al. 2015). We also noted that food industry actors included in our analysis worked in partnership through platforms such as ILSI or the Consumer Goods Council of South Africa when adopting several political practices, even though individual companies involved in those platforms are competitors in the food market. This type of collaboration was also noted for the alcohol industry in the UK, for example, where

trade associations represent different actors when the actors had a common interest to defend (Holden et al. 2012).

Our study has some limitations. First, our data collection regarding several CPA strategies was constrained by the limited publicly available information in South Africa. For example, there is limited publicly available information on political donations and direct lobbying, in contrast to other countries, such as the USA and the European Union. In addition, we were unable to find details about the conflicts of interest of government officials, nor details about their day-to-day interactions and correspondence with corporations (direct involvement and influence in policy). There was also a lack of information on universities' and professional associations' websites about their conflict of interest policies, if existing, and other details about their interactions with actors in the food industry. This reflects a current lack of transparency in the interactions between the industry and individuals and institutions in the government, academia and civil society in South Africa. Finally, while South Africa has eleven official languages, we have included material in English, as it is the primary language used in Parliament.

There are a number of existing mechanisms that public health advocates could use to counter industry influence and interference in policy-making. The South African government has an active Freedom of Information policy (the "Promotion of Access to Information Act"), which could assist in getting access to additional data regarding government interactions with the food industry. The government could make available to the public (online) information such as the financial disclosures for government officials and employees; a list of gifts and of donations to government officials and employees; the Ministers' and other government officials and employees' diary disclosures; the correspondence (including emails) between corporations and government institutions, officials and employees; the list and content of submissions to public consultations on public health issues, as well as a dedicated personnel to review the evidence in these submissions; a list of lobbyists.

In academia and civil society, mechanisms to counter industry influence and interference include the development of a conflict of interest policy and the public disclosure of the conflicts of interests of individuals in these organisations, as well as the disclosure of the list of fellowships, awards and other prizes from corporations, amongst other solutions.

Our study was not designed to assess the impact of the identified CPA strategies on policy, research and practice. This should be the subject of future research in the South African context to support similar such research in other contexts. The study relied on public data and so was not able to identify CPA practices for which there is no

publicly available information. Furthermore, we did not conduct a thorough review of all of the interactions between academics and the industry. Future searches on the CPA of the food industry in South Africa could include a larger sample of industry actors, for a longer period of time.

In conclusion, the food industry in South Africa is using many practices that have the potential to negatively influence public health policy, research and practice. On 24 May 2019, South Africans representatives to the World Health Assembly called for urgent action to respond to the commercial determinants of health (i.e. corporate activities that affect health), which includes the CPA of the food industry (IOGT International 2019). In order to inform such action, it is crucial that there is greater knowledge, transparency and monitoring with respect to industry strategies and practices. It is also important to strengthen existing mechanisms to address and manage industry influence and to hold both government and the industry to account for their role in addressing NCDs in South Africa.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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