



Transition Pathways development for healthier diets in urban food environments of Accra, Ghana

Vincent Linderhof, Ellen Bulten, Zoe van Eldik, Elisabeth Obeng, Marijke Dijkshoorn-Dekker, Wim de Haas, and Xiaolu Hu



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With the collaboration of the Collective Impact Coalition on Ghanaian Urban Food Environments (GUFÉ) initiated by the Netherlands Food Partnership (NFP), a common vision on what the food environment in Accra should look like in 2050, and potential transition pathways were identified. The stakeholder interactions resulted in three different pathways towards healthier diets in Accra. The emphases of these pathways were different: i) the cultural pathway maintaining and promoting Accra's food culture, ii) the economic pathways optimising the food supply chain into Accra in every stage of the process, and iii) and the environmental pathway on greening the city with food crops and trees. The independently drawn-up pathways showed some similarities and differences when comparing the action perspectives of the three pathways. The common elements were education, stakeholder involvement and policies, although the implementation of these elements differed across the action perspectives of the pathways.

Key words: urban food environment, Accra, transition pathways, healthier diets

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Glossary

Acronym	Description
GUFE	Ghanaian Urban Food Environments
NFP	Netherlands Food Partnership
SOP	Standard Operating Procedures
FNS	food and nutrition security
CSIR	Council for Scientific and Industrial Research in Ghana
MoH	Ministry of Health in Ghana
MoE	Ministry of Education in Ghana
MoFA	Ministry of Food and Agriculture in Ghana
TSS	Transition Support System
FDA	Food and Drugs Authority in Ghana
CSR	Corporate Social Responsibility
NGO	non-governmental organisation
RTE	ready-to-eat
WHO	World Health Organization
NNP	National Nutrition Policy
PFJ	Planting for Food and Jobs
GNSDF	Ghana National Spatial Development Framework

Summary

There are multiple ways to achieve healthier diets in urban food environments. However, people with different backgrounds will have different views on how food systems and urban food environments should change to achieve the healthier diets' objective or overcome the identified gaps. With a participatory approach, one can determine common visions on what the future food system including urban food environments should look like. Moreover, multiple pathways with diverging emphasis can exist next to each other. However, the organisation of workshops without a network is time consuming.

With the collaboration of the Collective Impact Coalition on Ghanaian Urban Food Environments (GUFÉ) initiated by the Netherlands Food Partnership, a series of participatory workshops with stakeholders was organised to identify the common vision on what the food environment in Accra should look like in 2050, which transition pathways were envisioned, and which action perspectives were identified for the pathways. Within the GUFÉ coalition, actions were proposed and for those actions a Theory of Change (TOC) exercise was employed. The results of the transition pathways were linked to those TOC results of the GUFÉ actions.

The multiple interactions with the stakeholders resulted in three different pathways towards healthier diets in Accra. The emphases of these pathways were different: i) the cultural pathway maintaining and promoting Accra's food culture, ii) the economic pathways optimising the food supply chain into Accra in every stage of the process, and iii) and the environmental pathway on greening the city with food crops and trees. The emphasis emerged from the group of stakeholders rather than indicated by the researchers beforehand. Although the descriptions of the pathways were drawn up independently, there can be observed some similarities and differences when comparing the action perspectives of the three pathways. The common elements of the action perspectives were education, stakeholder involvement and policies, although the implementation of these elements differed across the action perspectives of the pathways.

However, the action perspectives defined were not as practical as the action defined by the GUFÉ coalition. Therefore, the pathways were integrated in the TOCs derived from the actions of the four action groups of the GUFÉ coalition. The pathways fit in the TOCs, although in most cases, the pathways can be linked to actions of multiple action groups.

The participatory approach has greatly benefited from the existence of the GUFÉ coalition initiated by NFP. It created a head start for applying a participatory approach looking for transition pathways towards healthier diets in the urban environment of Accra. GUFÉ coalition members and other stakeholders voluntarily participated in the workshops and interviews. The composition of the groups of participants of the events was dynamic as people participated only once, people were replaced etc. Despite the changes in participants, there was a core group of people participating in most events. One aspect for improvement of the workshops would be to guarantee the engagement of representatives of all relevant stakeholder groups. The local, regional and national government as well as the consumers and citizens were underrepresented in the workshops.

To make sure that the missing stakeholders are informed and/or involved, the next step would be to discuss the results of the pathways with representatives of the local, regional and national governments in Ghana and other missing stakeholders to raise awareness of the opportunities that are there to change and accelerate the transition of the Accra Food System towards healthier diets for all.

1 Introduction

Background

To overcome the nutritional gaps, i.e. the discrepancy between intake and requirements of nutrients by humans, there is no unique solution for achieving Food and Nutrition Security (FNS) for all urban populations. There are multiple ways to achieve healthier diets in urban food environments. However, stakeholders with different backgrounds will have different views on how food systems and urban food environments should change to achieve the objective of healthier diets or overcome the identified gaps.

In 2019, the Netherlands Food Partnership (NFP) has initiated the Collective Impact Coalition on Ghanaian Urban Food Environments (GUFE) or GUFE coalition to start a network of stakeholders with a common goal: improving food security in one of the urban areas of Africa, namely Accra in Ghana.

The GUFE coalition of NFP aims to achieve healthy and sustainable diets in urban environments in Ghana. The coalition has four focus themes (and action groups) that all influence the status of the urban food environment:

1. Urban Consumer
2. Trading and Purchasing Environment
3. Healthy Food Availability; and
4. Enabling Environment.

These themes are not isolated and are supposed to interact. While conducting actions in those four themes, it would be valuable to know for the coalition members, target groups and other relevant stakeholders how they view the necessary transition of the urban food environment. Most likely, given their stakes, stakeholders with different backgrounds will have different views on what the future with healthy and sustainable for all diets should look like and which pathway for such a future would be preferred.

Objective

In addition to the actions proposed by the four action groups of the GUFE coalition, Wageningen Research suggested exploring transition pathways for achieving healthier diets in urban food environments. This exploration of pathways is conducted with the diverse members of the coalition and related stakeholders. The advantage is that stakeholders with different backgrounds can have a dialogue or discussion to become more aware of the preferences and conditions needed to undertake specific pathways. Furthermore, opposite opinions can exist and solutions to overcome these differences can be subject of dialogue or negotiation. This can contribute to a positive atmosphere despite complex challenges, which increases the social acceptance of transition pathways and action perspectives. Moreover, it can inspire action group members and stakeholders to adapt current and initiate new actions.

These pathways are developed with a series of workshops to start a dialogue on what transition pathways for achieving healthy and sustainable diets in urban food environments would look like. The emphasis will be on the urban food environment in Accra, Ghana. In addition, action perspectives linked to these transition pathways are discussed as well. In the sessions, there will be dialogues about what is expected from members and stakeholders in terms of investment, adjusting regulation, enforcement, promotion etc. Ethical engagement with the private sector has been emphasised so far, because the coalition is searching for a sustainable continuation. However, it would be valuable to explore how this can be realised, and which Standard Operating Procedures (SOPs) need to be put in place to facilitate such engagements, or what is expected from other stakeholders such as governments, farmers, NGOs, and research and knowledge institutes.

Outline of report

Chapter 2 presents the approach that we used to identify transition pathways for healthier diets within the urban food environment of Accra. The description of the context of the food environment in Accra is presented in Chapter 3. Chapter 4 presents the results of the visioning and the three transition pathways identified, including the transition pathways and the action perspectives resulting from the workshops. Chapter 5 concludes.

2 Methodology

2.1 Framework

Challenges for future objectives like the Sustainable Development Goals (SDGs) including climate change, urbanisation, and food and nutrition security for all require transitions to more sustainable systems. For example, transitions of the economic system and the ecosystems. Within these transitions, actions aimed at integrative solutions require a broader view on possible pathways to a better future. Solutions for one challenge will also positively or negatively affect the achievement of other challenges, needing trade-offs, although it is not always clear how. Moreover, stakeholders are likely to focus on the achievement of their 'own' SDG objectives, disregarding the achievement of other SDGs. This requires an integrated approach, where stakeholders collectively anticipate on transforming the systems to achieve multiple goals. The elaboration of pathways can contribute to identifying better sustainability insights in the project context and broaden the possible actions. This process can also aid in pulling out stakeholders of their own bubble, contributing to greater relevance, and better implementation of the project results. However, transition pathways should not be an isolated action, but part of a learning cycle (see Figure 2.1) where different steps can contribute to building solid actions.

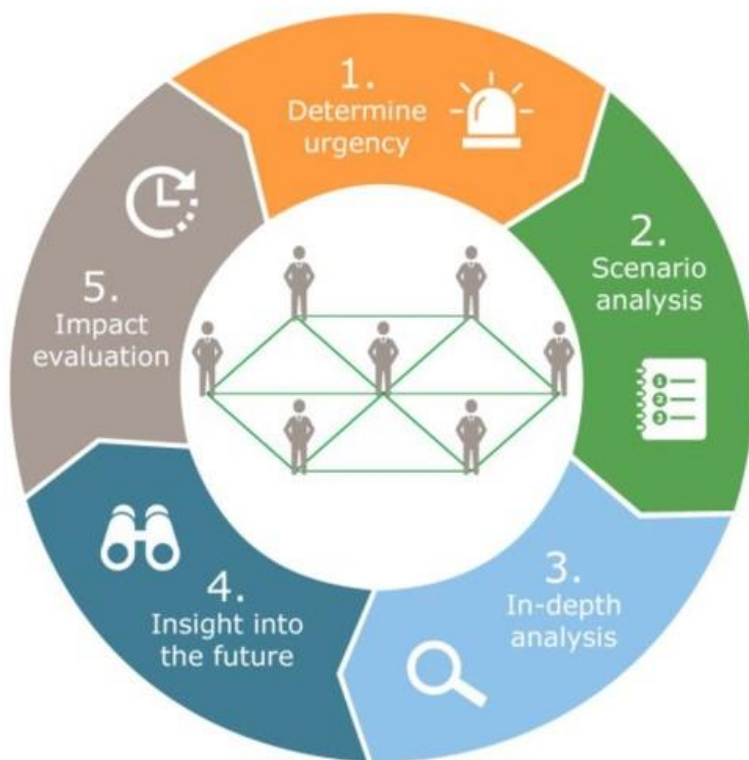


Figure 2.1 Five steps of the Transition Support System (see Dijkshoorn-Dekker et al. 2019)

In response, WUR has developed the Transition Support System (TSS) approach (Dijkshoorn-Dekker et al. 2019; Dijkshoorn-Dekker et al. 2020). This approach facilitates the stakeholder process of achieving sustainable change together and in consultation with each other. The value added of the TSS approach is the role of the stakeholders and their expertise in conjunction with decision-support methods and techniques. The basis of the TSS approach is the sharing of knowledge, data and information to come to a shared vision by dialogue rather than discussions. Stakeholders' knowledge, data, and background information are indispensable in this process. That is where the TSS approach assists in making shared decisions in the areas

of policy and formulating strategies with a shared vision for the future. This process is supported by in-depth analyses, such as spatial insights into land use and statistical materials for specific sectors or population groups which lay the foundation for developments and appraise effects of prospective actions. Impacts of interventions can be anticipated and discussed in more detail. During this process, different groups of stakeholders can adapt the interventions identified.

2.2 Methods

When applying the TSS approach to transition pathways for improving the urban food environment to achieve healthier diets in Accra in 2050, there needs to be a clear problem definition and urgencies before interacting with stakeholders on transitions. For defining the urgencies, a literature review was conducted in collaboration with the Netherlands Food Partnership (see Section 3.1 for the description of the urban food environment in Accra, or the quick scan report (Lacey et al. 2022)). In addition, 6 interviews were conducted with people from the GUFÉ coalition. The key element for the literature review and the interviews were:

- Defining the urgency and rationale to conduct the workshops. Healthy diet is the main element of the Accra food system for which there has been a need of conveying different stakeholders' views. However, there was the need to properly identify the specific population that could be the subject of these conversations (e.g., peri-urban citizens, middle- or low-income population). Additionally, drivers of the food systems were also included, such as environmental issues that could endanger food safety.
- The preparation included an update of the policy analysis for Ghana (Linderhof et al. 2019).
- Interviews with coalition members and other related stakeholders were conducted. This included the drafting of interview scripts capturing the information on the activities of the NFP working groups to allow for proper harmonisation and inclusion of pre-existent knowledge. This activity was conducted by both the WUR team and the NFP team.
- Finally, scripts for the actual implementation of the workshops were also created based on earlier experiences and knowledge for conducting Transition Pathways workshops.

Based on the urgencies from the literature review and interviews, two online Transition Pathway workshops were organised to provide a platform for a dialogue on what transition pathways to achieve healthy and sustainable diets in urban food environments of Accra would look like.

- Workshop 1 was organised on 2 November 2021, and 20 people participated, see Annex. The aim of the workshop was to define a common vision on what the urban food environment in Accra should look like in 2050 to be able to facilitate healthy and sustainable diets for all. In addition, the aim was to identify transition pathways how this common vision could be realised.
- On 2 December 2021 Workshop 2 was organised and 18 people participated, of which 11 also participated in Workshop 1. The aim of Workshop 2 was to identify action perspectives within the transition pathways identified.

In the first workshop, transition pathways identified in the first workshop were explored in more detail with the elaboration of action perspectives foreseen by stakeholders. After the workshop, the stories, experiences and arguments of the pathways and actions were documented and shared with participants and other relevant stakeholders.

The Transition Pathway workshops contributed to the learning loop of the whole project by discussing the following:

- For each of the four themes, which indicators can be used to monitor the progress of that particular theme.
- From the defined transition pathway, which indicators are relevant to see how the context of the themes will develop.
- For future actions: how can the learning loop be organised to facilitate the intended transition, see Figure 2.2. What are the roles of: indicators, storytelling, participatory monitoring?

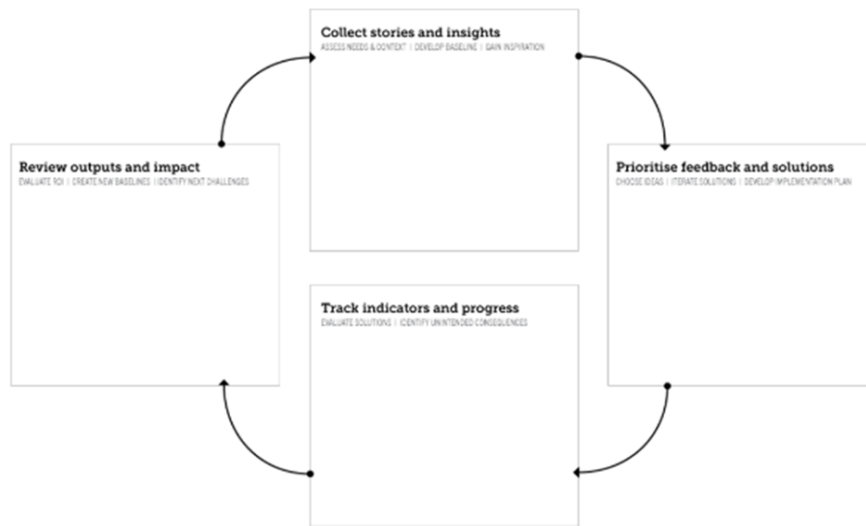


Figure 2.2 Learning loop scheme to be used in the series of Transition Pathways workshops

Wageningen Research facilitated the online sessions together with Ghana-based partner Amos Laar, professor of Public Health Nutrition at the University of Ghana. In preparation of the workshop, several activities were conducted by Wageningen Economic Research with support of NFP.

3 Context description

3.1 System description

3.1.1 Framework of analysis

This chapter describes the current context of the food environment of Accra. This analysis follows a framework elaborated by following the typology and definitions of (Turner et al. 2018) and (Downs et al. 2020) of the built food environment (formal and informal markets). This framework depicts external domain dimensions (food availability, prices, vendor and product properties, marketing and regulation) that provide information about people’s food acquisition and consumption (see Figure 3.1). The focus of this analysis will be on external domain dimensions. However, relevant information on personal domain dimension (accessibility, affordability, convenience and desirability) will complement the external properties of the built food environment.

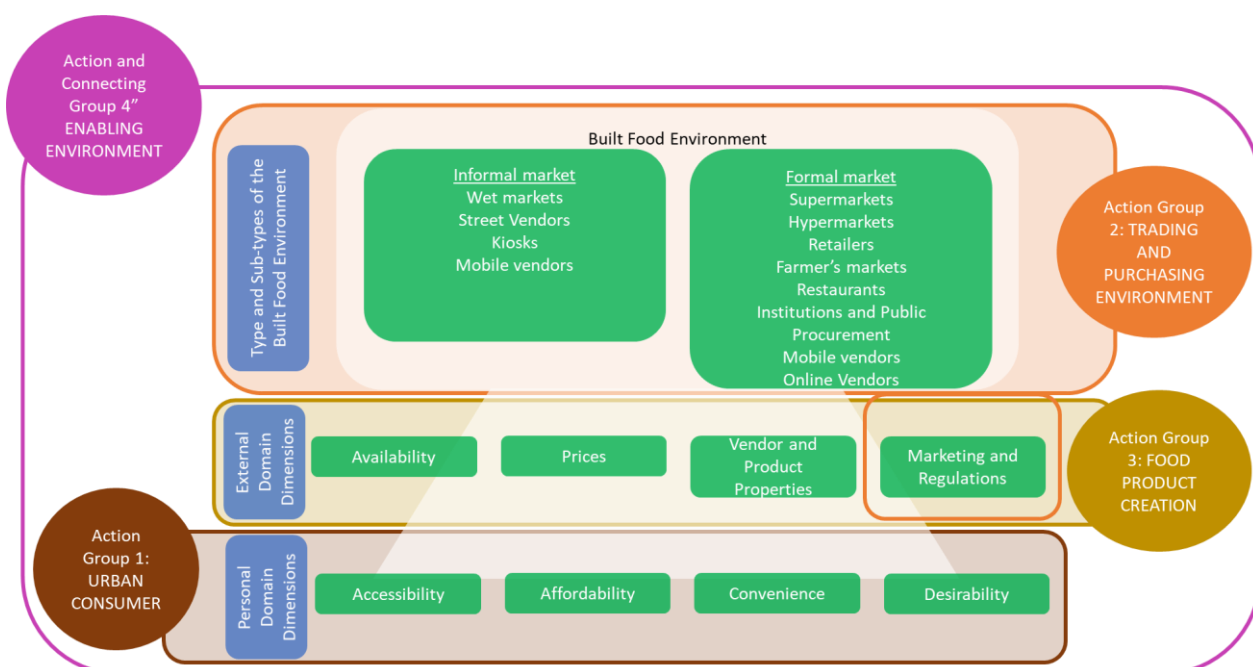


Figure 3.1 Framework of food environment and link to GUFÉ Action groups
 Source: authors’ own.

To highlight the connections between this analysis and the activities carried out by the NFP’s GUFÉ coalition, the framework has been connected to the four main action groups of the Coalition as described in the NFP Collective Impact Coalition Framework (NFP 2020), see Figure 3.1. On the one hand, action group 1 ‘urban consumer’ encompasses personal domain dimensions of the food environment. On the other hand, action group 3 on ‘food product creation’ includes external domain dimensions. Then, action group 2 on the ‘trading and purchasing environment’ connects to the typologies of the built food environment. Finally, the whole framework can be included in action group 4 on the ‘enabling environment’ as it is described as a domain with connection role ensuring a ‘coherent and integral approach across actors and processes’ (NFP 2020).

This analysis contributes to the understanding of the Accra food system. With the analysis, we identify leverage points for the promotion of sustainable food changes in the Accra urban food environment with the

final aim of influencing food security within the broader food system's outcome according to Van Berkum et al. (2018); particularly with the focus promoted by NFP on 'healthier diets', see Figure 3.2.

Earlier studies have shown that higher policy attention is needed to promote more healthy food choices in African food environments (Otterbach et al. 2021). The change from informal to more formal markets within the built food environment is often seen as a way forward towards healthy and sustainable diets. However, interventions in the built food environment can have both negative and positive influences on diets and nutrition Khonje et al. (2020). In particular, one study shows that the presence of supermarkets in the built food environment did not seem to drive the reduction of malnutrition burdens such as obesity in childhood (Debela et al. 2020). These findings suggest that interventions in the food environment are not yet clearly linked to evidence on improvements on healthier diets. Additional regulation on unhealthy food, and the creation of more knowledge and awareness amongst consumers and the food sectors on healthy and unhealthy food might be required. Therefore, aiming at outcomes indicators (e.g., for food security) can be a way to channel the positive effects of the food environment on nutrition (Debela et al. 2020).

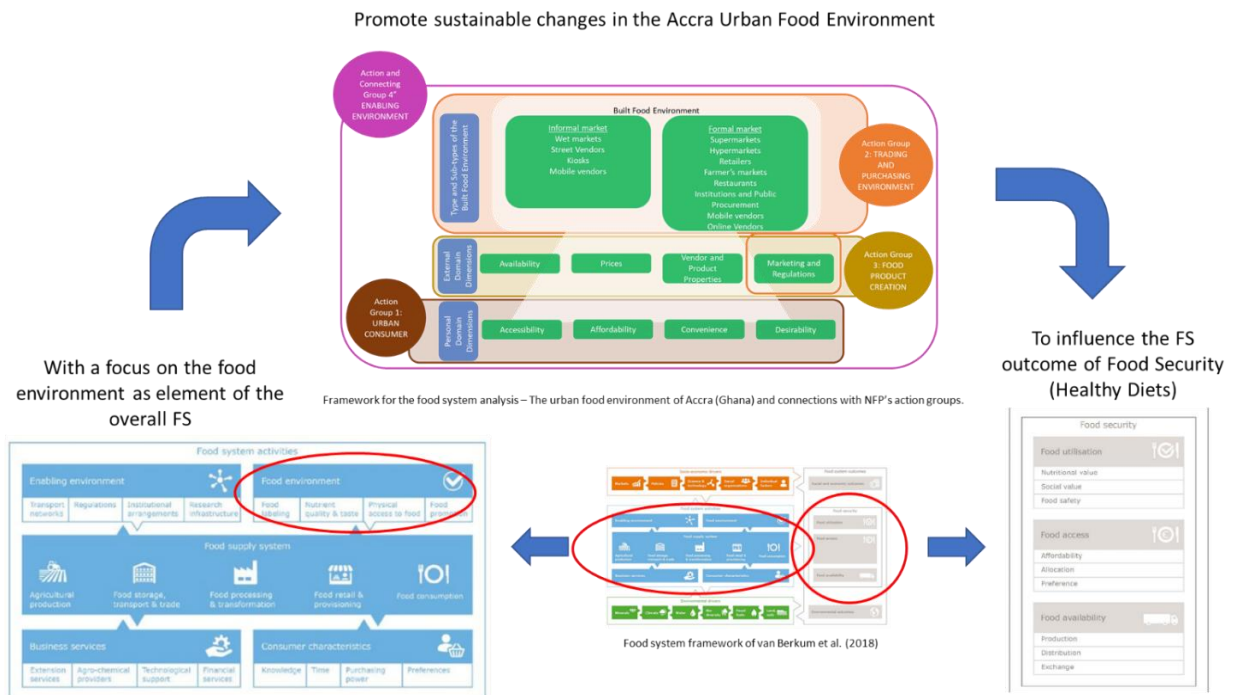


Figure 3.2 Aim of the Accra urban food environment analysis and connection to the broader food system's framework

Source: authors' own derived from existing frameworks such as Van Berkum et al. (2018).

This study presents a description of the food environment in Accra. We used a literature search of the Scopus database using several combinations of search terms, see Table 3.1.

Table 3.1 Results of literature search in Scopus database (1 July 2021)

Search terms	Number of hits	
	Total	AND 'Accra'
'Food' AND 'Security'	49,186	34
'Food' AND 'Environment'	114,880	32
'Accra'	3,247	X
Total including double counted hits		68
Total excluding double counted hits		58

With the combination of search term 'Food' AND 'Security' and 'Accra' there were found 34 articles in Scopus database. The combination of search terms 'Food' AND 'Environment' AND 'Accra' yielded 32 articles. In total we had 68 articles based on the two literature searches, and it turned out that there were 10 overlapping articles, so that we used 58 articles for our review.

Section 2 presents an overview of the built food environment in Accra. The informal and formal markets are discussed in sections 3 and 4 respectively, where the emphasis is on the physical food environment. Section 5 discusses personal domains and the other aspects of external domains of the food environment. Section 6 concludes and provides recommendations.

3.1.2 Overview of the built food environment in Accra

The food environment in Accra is changing. This affects also consumer behaviour, and their diets. Steady economic growth and political stability are among the socio-economic drivers influencing changes in consumer behaviour in Ghana, stimulating the creation of modern food retail outlets and supermarkets (Sedzro 2013). However, how this is happening is currently not completely known (Aryeetey et al. 2016). Moreover, there has been an increase in the prevalence of obesity over the last three decades in Sub-Saharan African countries as a result of consumers responses to changes in the food environment that encourages sedentary lifestyles and excess calorie consumption (e.g. availability of sweetened carbonated soft drinks and fast foods, mainly due to urbanisation as well) (Dake et al. 2016). Specifically, Ghana is currently experiencing a drop in undernutrition rates coupled with increase in over-nutrition, with obesity rates increasing across rural and urban population (Tuholske et al. 2020).

According to a study in an Ashongman Estates urban area in Accra (Aryeetey et al. 2016), households prefer to purchase their food at outlets of within informal and formal markets domains. However, informal markets such as traditional markets were the most common food purchasing points. Formal food purchasing points identified in order of importance, were minimarkets, frozen food outlets, supermarkets, and bakeries. Mobile vendors were also included, though with much less preferred compared to other food outlets. Another study confirmed that an average household of four people in Accra generally purchase its food from markets and street kiosks, while supermarkets were rarely a source for family purchase of food (Tuholske et al. 2020).

In general, concerning healthy food accessibility in Accra, some studies reported that there is good accessibility to healthy food such as vegetables in specific areas of the city, such as in newly developed suburban areas of Accra (Aryeetey et al. 2016). The majority of households cultivate basic food crops such as maize, pepper, tomatoes, and cassava in their backyard garden (Aryeetey et al. 2016). Results from other studies, however, suggested that healthy food was not that widely accessible demotivating consumers behaviours in terms of healthy and active lifestyle (Dake et al. 2016). Additionally, food deserts (i.e. areas with lack of access or low to healthy diets food) that are most common in deprived areas are becoming part of these food environments, especially in the urban areas (Dake et al. 2016).

Though there is consensus that interventions in the food environment can create positive changes in diets, the Accra food environment is an element of the food system that needs attention representing an opportunity of intervening in the connection between supply and demand of healthy food. In effect, the number of food outlets in Accra is huge. In the neighbourhood of Jamestown, for instance, there were 413 food outlets identified of which 80.5% were informal markets (street food vendors) according to (Green et al. 2020). Since 63.9% of these informal market food outlets were represented by fruit and vegetable stands, it gives leverage for a positive change in Ghanaian urban consumer diets.

3.1.3 Informal markets

Characteristics of the informal food markets

According to the typology on food environment by (Downs et al. 2020), the built food environment can be categorised among formal and informal markets. The latter are further specified to be wet markets, kiosks, street vendors and mobile vendors. Specifically, in Accra, there are traditional markets that include both wet markets (selling fresh-perishable goods such as vegetables, fruits meat and fish) and dry markets (selling durable goods also non-food related such as traditional fabrics). Traditional markets are still the preferred

outlets for the majority of households and they also result as being the main source for purchasing of household food in Accra, this as a result of a survey conducted in suburban Accra in 2012 (Aryeetey et al. 2016).

Most traditional market food vendors are small scale retail entrepreneurs and a minority present also wholesalers. They are generally situated in open air spaces with sometimes temporary sheds metal roofed (Aryeetey et al. 2016).

There are over 30 traditional markets widely spread in Accra associated with an incredible number of other informal outlets such as kiosks and food street vendors (FAO 2016). This represent a good number of open-air markets and a high concentration in the area, considering that only within the radius of 25 km around the areas of Ashongman Estates there are 15 traditional markets identified of which closer to the neighbourhood are Dome, Madina, Haatso and a slightly further the largest Makola market and Agbobloshie. Traditional markets occupy government-owned lands and are managed by the respective city authorities (Aryeetey et al. 2016). As part of informal selling points mostly used by the Accra urban population, there are also street food vendors. These are mostly common in urban poor communities such as James Town, Ussher Town and Agbobloshie. Street food vendors are often mobile in several ways. They can be found in traffic jams carrying the food stuff on their head or on carts. There are also more modernised vendors with mobile food vans (Larbi et al. 2021). The accessibility to the food sold by these actors is very high, as they are commonly available in any moment of the day and at any point in time, allowing residents to consume a wide variety of the food products sold. Studies also reported that there is high density of street food vendors in the same urban area compared to fruit and vegetables selling points, stressing the high accessibility dimension for ready-to-eat (RTE) products (Dake et al. 2016). Figure 3.3 reports examples of different type of food purchase by food outlet.

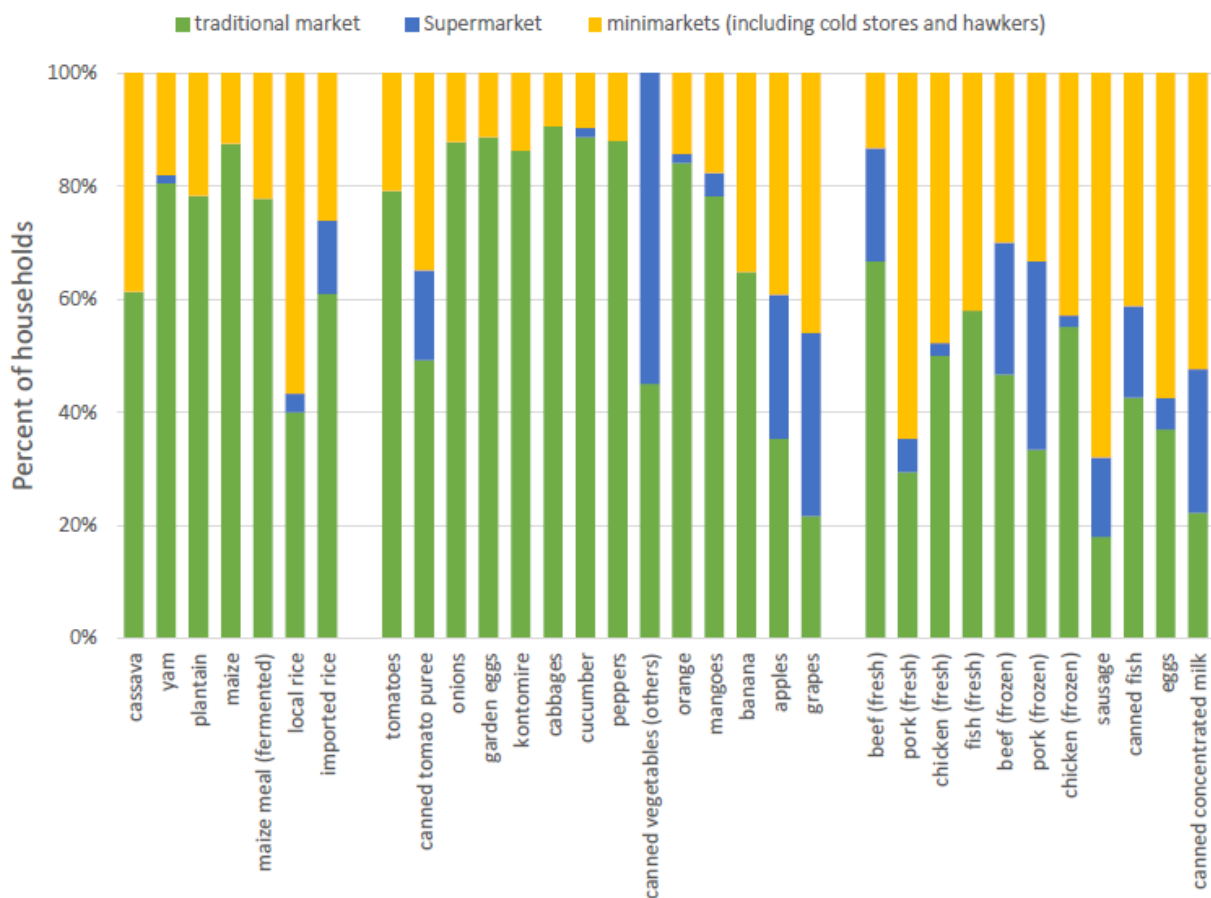


Figure 3.3 Different types of food purchase by household in Ashongman Estates, Accra
Source: Aryeetey et al. (2016).

Product properties of informal markets food (out-of-home food)

Food products sold in Accra’s traditional markets range from fresh foods to various types of processed foods. In general, households purchase unprocessed food stuff with longer shelf life and perishable foods (fruit and vegetables) from these selling points, with the latter being more often a reason for doing groceries in this specific selling (Aryeetey et al. 2016), see Figure 3.4. Even if traditional markets are accessible daily, every market site has its ‘market day’. On this day fresh fruit is present in larger volumes and it is sold at more affordable prices (Aryeetey et al. 2016).

Street food is mainly RTE food prepared in public places and it is either eaten in the same place where it is prepared, like in the so-called ‘chop bars’, which are traditional Ghanaian eateries or taken away in plastic bags, polystyrene packs or leaves. Main dishes sold as RTE food are boiled rice-based meals (i.e., fried rice, waakye and jollof rice) local staple food (i.e., fufu, banku, and kenkey) and foreign-style fast foods such as salads and a mix of noodles popularly ‘Indomie’ called after the Indomie brand. These are accompanied by either different types of soups, fried fish and chicken or uncooked sauce (mixture between pepper, tomato and onion) but also stewed sauces (Dake et al., 2016).

These products are potentially more exposed to food contamination (e.g., oral-faecal pathogens since they undergo a series of preparations and handling practices (e.g., water used, cutlery or equipment, hands, ingredients, bowls or storage containers, etc.) in the place where they are cooked like school compounds, lorry stations, and along busy roads (Larbi et al. 2021). Where vegetable selling points were available (in lower quantity compared to out-of-home foods, see Figure 3.4), the main products were oranges, pineapple, watermelon, apple, and blackberries. Vegetables are mostly tomatoes, onions, cabbage, and carrots. These fruits are sold cut in pieces and served in polythene bags or transparent plastic containers on the street and they are usually purchased from food vendors while stuck in traffic.

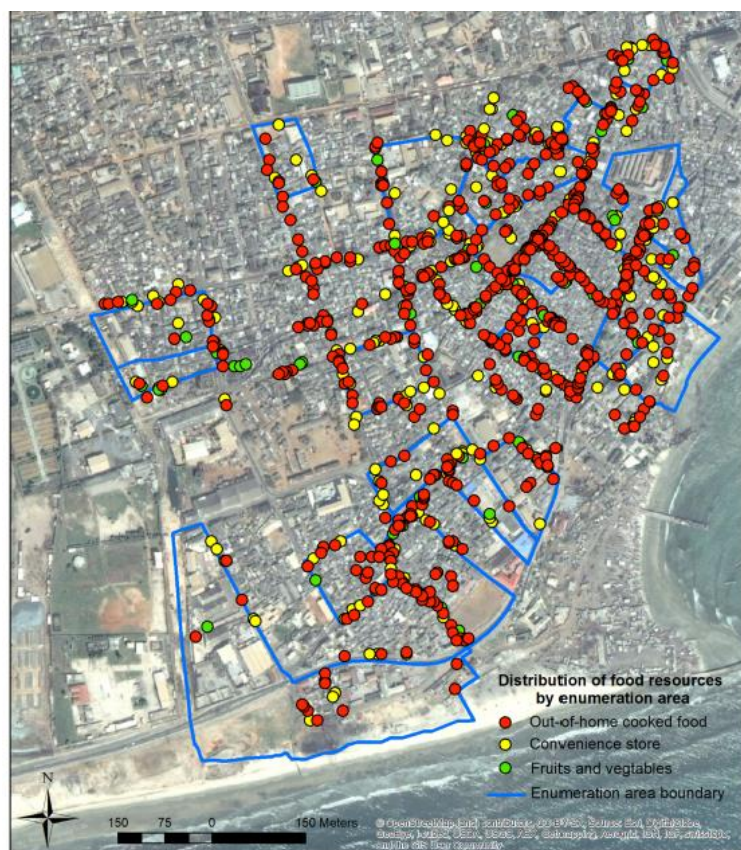


Figure 3.4 Spatial distribution of out-of-home cooked foods (informal markets), convenience stores and fruit and vegetables stands
Source: Dake et al. (2016).

3.1.4 Formal markets

Characteristics of the formal markets

Supermarkets selling points are on the rise in Sub-Saharan urban cities such as Accra. However, they are typically located in middle and high-income neighbourhoods and not in low-income neighbourhoods (Green et al. 2020). According to unpublished data by the International Food Policy Research Institute (IFPRI) in 2017, Accra had 37 large-format supermarkets (Tuholske et al. 2020). These formal selling points offer more of processed foods than fresh food products, even though these are also available in other settings such as traditional markets and minimarkets (Aryeetey et al. 2016). Supermarkets in Accra are company-owned or individually owned, and they are recognised by a unique trademark distinguishing themselves from the traditional market locations that have multiple traders (Aryeetey et al 2016).

As part of the formal markets typology there are also minimarkets (small scale retailers such as corner stores, table-top vendors, itinerant hawkers, gas station mini-shops, bakeries, and frozen food retailers). In the 25 km radius of the Ashongman Estate area in 2012, 102 minimarkets were identified. Though, these outlets seems to be the most accessible food outlets to consumers due to their closer proximity to homes and their widespread distribution in the community, they offer a limited variety of food compared to traditional markets and supermarkets (Aryeetey et al. 2016).

Convenience stores are also widely spread in poor urban communities of Accra compared to fruit and vegetable selling points. These are small stores in the community selling mainly processed and pre-packaged foods and non-food items. For example, they sell mostly energy dense food products that contribute to the obesity burden (Dake et al. 2016). They do not naturally sell fresh products such as fruits and vegetables. The widespread availability of convenience stores can show how the availability and affordability of these convenient foods in urban poor areas contribute to the susceptibility of residents to obesity.

Product properties of formal markets food

Most of the supermarkets sell mostly processed foods (imported and locally produced, typically frozen, such as animal protein products and grains) compared to a limited number selling also fresh products. Additionally, in the case a supermarket sells also fresh produce, this occupies a relatively small section and it is mostly imported (Aryeetey et al. 2016). This results in processed and frozen foods being more frequently purchased from formal markets such as supermarkets and minimarkets compared to informal markets. Consequently, this also means that a wider variety of unhealthy products compared to informal markets are sold in these outlets. Table 3.2 shows examples of different food offered by vendors within 25 km of Ashongman Estates neighbourhood in Accra. Marketing and communication are also an incentive for unhealthy consumer behaviours in formal settings. For example, in supermarkets, convenience stores and minimarkets there is a higher offer and advertisement of sugar-sweetened beverages and alcohol as well as processed/fried foods (Green et al. 2020).

Table 3.2 *Category of foods offered for sale by food vendors within 25 kilometres of Ashongman Estates, Accra*

Traditional markets	Mini markets	Supermarkets
Fresh produce	Fresh produce	Frozen food
Preserved foods	Preserved foods	Bakery products
Processed foods	Processed foods	Processed foods
Tubers	Frozen and refrigerated foods	Frozen and refrigerated foods
Grains	Oils and fats	Fresh produce
Frozen food	Dairy products	Grains
Fresh meat and sea food	Bakeries	Oils and fats
Live animals		Dairy products
Oils and fats		

Source: Aryeetey et al. (2016).

3.1.5 Personal and external domain dimensions of Accra food environments

Though, low and middle-income households in Accra are not suffering from insufficient calorie intake, there is a concern regarding the actual accessibility to sufficient, safe, and nutritious food (Tuholske et al. 2020). Generally, household wealth determines food security within a family in the Accra urban context. However, there are also specific personal domain dimensions that influence food security in a household. For example, less educated people and household without ownership of a vehicle are reported to be less likely to purchase their food from supermarkets (Aryeetey et al. 2016). Other personal domain dimensions influencing positively food security in urban Accra households are recognised in small family size, presence of an older head in the households, higher education, annual remittances (Tuholske et al. 2020).

As mentioned earlier, informal markets such as traditional markets are preferred outlets for food purchases by Accra urban consumers. Reasons behind this preference are linked to different personal domain dimensions related to affordability, accessibility, convenience and desirability. For example, greater variety of products offered are at the base of high desirability and convenience and affordability are mainly determined by lower prices of the products; lastly, because of the widespread presence of these location, proximity to the source contributes to high accessibility. Moreover, as it is an RTE meal, street food has a convenience dimension as it spares a lot of time in food preparations for the consumers, and it consists of traditional staples that is most often preferred to other types of food (Larbi et al. 2021).

In general, consumers based their decision for a food vendor on price, vendor relationships, appearance of environment, appearance of the vendor, taste and accessibility of the food. However, food safety and basic food hygiene were not a major concern or priority in choice for both consumers and vendors (Larbi et al. 2021).

Among external domain dimensions, advertisement of food products is very common in Accra. However, the majority of adverts in deprived urban food environments are for sugar-sweetened beverages and alcohol products mostly found on posters (Green et al. 2020). Exposure to these advertisements (also through television and sponsorship campaigns) is also a matter of business (increase in sales) by large multinationals, as these types of products (sugar-sweetened beverages and alcohol) are often associated with high social status, especially if they originate from high-income countries.

It is important to note that formal outlets might be the right environments to be subjected to regulations aimed at improving healthy diets in Accra. In effect in these outlets the availability of unhealthy food is higher than in informal contexts and also these are physical and registered structures, not the same as informal outlets (most of which are small scale retail entrepreneurs and mobile food vendors) (Green et al. 2020).

3.1.6 Conclusions of system description

From this analysis of the food environment in urban Accra, there are important lessons that might be useful in influencing food systems outcomes in terms of enhanced healthy diets. Since preferred outlets for consumer purchases are recognised in informal settings, an intervention targeting the augmentation of healthy food availability (fruits and vegetables) in these places could be a good initiative. Also, considering that informal outlets such as traditional markets offer a wider variety of healthier foods and less alcohol advertisements compared to formal markets (Green et al. 2020).

Contrariwise, tightening the selling, but also the marketing of unhealthy food products in both informal settings and specifically in formal settings (such as supermarkets, minimarkets and convenience stores), could positively influence healthy consumers choices. However, traditional markets are still preferred as food source, there is the need for interventions to ensure that the food sold includes a variety of fresh products and less of processed food (Aryeetey et al. 2016).

In general, since out-of-home cooked food does not seem to contribute to weight gain of residents in Accra (Dake et al. 2016), being these foods made from whole unpolished ingredients, interventions aiming at improving the healthy quality and safety of the ingredients used for the preparations of dishes could be an alternative.

3.2 Policies

For the improvement of food security in Accra and Ghana, the emphasis of Ghana's policy has largely been the improvement of food availability in terms of increasing agricultural production and setting productivity targets (Linderhof et al. 2019). The policy review of Linderhof et al. (2019) aimed to provide insight into how urban food security was incorporated in four policies: agricultural policy, nutrition and health policy, economic policy and spatial planning policy. In their policy review on urban food security, they used the four pillars of food security as defined by the FAO: food availability, food accessibility, food utilisation and stability. There was no specific focus on food environment in urban areas, although several pillars of food security relate to the food environment as well. In summary, almost all pillars of food security were mentioned in one or more policies but the frequency and intensity differed across policies. However, the elements of preferences and social value were not considered in these policies. Moreover, the responsibilities of the pillars of food security or their elements (e.g. production, distribution, exchange, affordability, allocation, and food safety) were spread out over several ministries. There seemed to be limited interaction and collaboration to overcome the gaps related to the urgencies of urbanisation and climate change with Urban Food Security (UFS). In addition, malnutrition and specifically the elements of chronic diseases related to overconsumption of food were not considered.

For the food availability pillar of food security, the element production of food was integrated in the agricultural policies and nutrition and health policies amongst others. The elements distribution and exchange were considered less frequently. The policy documents Planting for Food and Jobs (PFJ) and the Ghana National Spatial Development Framework (GNSDF) also addressed production of food in the urban areas. Next to stimulating initiatives in rural areas, the Planting for Food and Jobs (PFJ) programme promotes the growing of crops by urban, non-farming households. Both affordability and allocation were mentioned the most in all the included policies, although but not extensively. The preference of food was not included in any policy documents explicitly, except in the nutrition policy of the Ministry of Health (MoH). The elements nutritional value, social value and food safety from the utilisation pillar were included in the National Nutrition Policy (NNP) of the Ministry of Health.

With Ghana's spatial planning policy, urbanisation was considered as an opportunity rather than a challenge. Existing urban centres were promoted to form a hierarchy of polycentric cores without considering the challenges posed on food supply guarantees. Food security was addressed by improving distribution networks and the deployment of urban food sheds.

Ghana's food policy retained a relatively high degree of coherency as most policies were well-aligned with and informed by international targets and networks. However, food security is still not considered from a more holistic perspective including food affordability and food safety for instance. From the Maputo declaration to the SDG goals. New policies have been adopted such as the Tree Crops Policy, which recognised potential benefits of share cropping, as well as the concept of Climate-Smart Agriculture has been incorporated that tried to stimulate for instance the production of non-food crops intended for export such as cocoa. Moreover, food security was only addressed in a generic way; differences across regions were not addressed. As a result, there are no clear guidelines on how the food environment in urban areas should develop to contribute to the improvement of urban food security.

3.3 Challenges of food security in urban environment of Accra

As part of the project, stakeholders were interviewed to capture different perspectives on healthy diets in Accra urban area, see Table A1.1 in the Appendix. Specifically, the already present knowledge on what is healthy and sustainable locally, what are anticipated developments, desirable changes, obstacles and levers. But also the identification of possible missing stakeholders that could be further bridging gaps in knowledge. This activity allowed for proper harmonisation between the actions planned by NFP working groups and the elaboration of transition pathways towards sustainable diets.

3.3.1 Characteristics of a healthy and sustainable diet

Stakeholders had various perspectives on what is healthy in the Accra urban context. First, healthy food is recognised to respect standards set by international organisations such as the WHO (World Health Organization), influencing food safety factors as well. As a result, proper handling of food such as storage and transportation are important elements in ensuring fresh and tasty food. Healthy food is also determined by a correct balance and diverse diet together with ensuring good food portions and proportions of different components. Also, understanding nutritional indexes can aid in developing the appropriate food pyramid for Ghana and dietary guidelines (though, these are currently delayed by policy).

The perception of healthy food is also linked to culture and tradition. Leveraging on healthy meals that have been part of people's culture in different communities but also combining tradition with sensitisation and education about healthy food is key. This also requires understanding and agreeing on what is defined as healthy, thus motives and barriers to healthy food is important in reaching a consensus among different populations.

As a means to support this, access to information and proper communication is needed to boost promotion of locally based and most nutritious food, and to shed more light on how urban consumers receive nutritional information (e.g., channels).

Sustainable food in the Accra urban context has a wide meaning according to stakeholders interviewed. Generally, the idea of sustainability goes beyond singular elements of the food system and embraces all aspects such as the environment (through waste management, and more appealing urban agriculture) and socio-economic drivers (e.g., fair remuneration for vendors). Moreover, it is considered that the creation of sustainable diets should be the result of a collective effort. Local products are more sustainable and connotated with familiarity, simplicity and convenience (e.g., staples), thus being affordable and accessible to everyone. However, stakeholders believe there is room for creativity and innovation by adding other and new dishes than the local and traditional one such as using fruits for smoothies.

3.3.2 Anticipated developments

Despite the need to increase awareness in developing pathways to sustainable and healthy diets in Accra, there are already positive traits that are potentially useful for achieving the end goal. First, interviewees mentioned that the awareness is already present, especially among the new middle class that is developing the urgency to eat healthy. Moreover, on the one hand the cultural and traditional cuisine, also street food - which is further getting attention thanks to de-colonisation - represents a solid ground which healthy and sustainable diets can align to. On the other hand, the increase in international franchises of fast-food chains can be a starting point for the promotion of healthier food products.

However, interviewees mentioned that negative aspects are still present in the development of an Accra with healthier and affordable diets. Specifically, the changing food environment in Accra is driving the consumption of unhealthy food. For example, the fast-food industry introduced unhealthy products. Interviewees noted that countering this trend does not seem to be a priority of the government nor the consumer. Furthermore, there is an increase in the number of supermarkets in Accra, but interviewees observed that there is the issue of high prices that might be a result of power structures in the food market that sees the monopoly of certain supermarket chains (particularly South African supermarkets).

Consumers' perceptions and behaviours are also not favouring sustainable and healthier diets in Accra, as there is a general lack of urgency and low awareness of the benefits of healthier diets especially by the lower class and among the informal economy as people die of poor diets (whilst they blame it on superstitious reasons). This is also combined with fragmented efforts from the community to solve issues such as food safety that should be a collective responsibility. Moreover, even if younger generations carry the hope of a better future, stakeholders do recognise that the youth are losing touch with essential things such as where food comes from and how it can be prepared. Negative aspects are also found at the production level where the need for sufficient income combined with lack of support such as subsidies for inputs (e.g., fertilisers) drive farmers to grow cash crops.

3.3.3 Desirable change

Desirable change is seen by stakeholders as something that should encompass the whole food system. For example, from the commitment of the government that has the power to influence legislation allowing for a better investment climate to enhancing coordination and planning between (small-holder) farmers. From raising awareness on appropriate food consumption (e.g., smaller portions and knowledgeable labels) that can also have a positive impact on food waste, to awareness of the environmental impacts on the actual disposing of waste. All of this could be further strengthened by capacity building fostering actors understanding of their actions and the reasons behind those.

It is important to highlight that the interviewees indicated that underlying the desirable change, food safety has been identified by stakeholders as an important pre-requisite that has to be guaranteed throughout the whole supply chain (including formal and informal components). The need for better hygiene standards should be able to allow for good food safety storage and conditions for sale, thus making healthy and safe food available anywhere. But also, in this regard, there is a need for change in people's attitudes and mindset that can happen by internalising awareness of the benefits of basic hygiene in food processing and food consumption.

The younger generations are also seen by the interviewees as an important part of the change; from increased attention to nutrition in schools, but also supporting the career development of youths by growing the appetite for agri-food careers and providing guidance to upgrading of the supply chain for young entrepreneurs in food processing.

Traditional markets remain important elements of the food environment that require change in their organisational features but also socio-economic status. This might need an increased pride in people about these types of outlets and enhanced attractiveness (that should also be accommodative of both genders according to some of the interviewees).

Generally, fragmentation in actions and lack of a holistic approach is seen as a barrier to reach the desirable change. For this reason, the call for cross-cutting impacts, interdisciplinarity and connection to existent movements such as the Ghana Food Movement has been identified. The latter connects with the desire of relying on becoming more independent also to boost the Ghanaian food culture, thus relying less on food imports.

3.3.4 Obstacles

Stakeholders believe that a main obstacle in reaching the desirable and needed change is the fact that few institutions and individuals are willing to take responsibility. Additionally, the recognition of urgency and prioritisation of food safety is not recognised by everyone. As a result, sufficient government policy is lacking and the role played by the private sector is unclear. Also, there is a lack of enforcement of food safety as, for example, investing in food safety is not economically attractive and the monitoring of the process from farm to fork, especially in terms of capacity for enforcing food transportation laws, is not properly done.

Moreover, there are individual factors that influence the successful reaching of the desirable change such as the inability of local perceptions to see problems in current diets and understand the risks (e.g., vegetables are seen as 'boring', waste is done very poorly). However, this might lead to a follow-up obstacle that is generating overburdening feelings in people that have to change most parts of their lifestyles and can therefore be disincentivised in doing so.

Stakeholders identified not only external obstacles but also internal ones. In effect, the lack of commitment by the GUFÉ coalition itself is seen as affecting people's motivation.

3.3.5 Levers

There is no doubt that in reaching the desirable change there are many obstacles that need to be overcome. However, stakeholders of the GUFÉ coalition recognised also the presence of levers.

First, there is increasing interest of the government in finding solutions to current food system's issues as its involvement in consultancies meeting has been acknowledged. Second, there are instruments already available and that have been improving over the years (i.e., food safety laws, initiatives on waste separation and the general knowledge on healthy and sustainable diets) that can perhaps be scaled-up. However, the problem remains the lack of their enforcement or their actual incorporation and use in current interventions.

Third, the many benefits provided by a healthier lifestyle that includes healthy diets are slowly recognised and owned, especially by children that encourage their parents in pursuing them.

3.3.6 Involvement of stakeholders in the GUFÉ coalition

The interviews with different stakeholders' representative of the Ghanaian urban food system were conducted in the period of September and October 2021. The interviewed stakeholders recognised that stakeholders were not (yet) participating in the GUFÉ coalition. Many other missing to get significant input from local perspectives. These missing stakeholders were identified among the private sector, for example, the micro and small informal enterprises such as market vendors, but also multinationals such as Coca-Cola and Nestlé. But also the national government (also in the form of local and regional representations) and associations (e.g., Association of Ghana Industries) and institutions important for providing a proper enabling environment (e.g., Ghana Food and Drugs Authority (FDA)). The lack of representatives of these stakeholders makes it hard to commit to the activities of the GUFÉ coalition. Furthermore, people participating in the GUFÉ coalition also highlighted that there is a need for more funding from NFP and more coherency in rules as well as content-specific remarks such as the increasing loss of connection with the GUFÉ coalition's overarching goal.

4 Transition pathway development

4.1 Common vision developed

For the development of transition pathways, we used the approach introduced in Chapter 2. Two workshops were conducted in which stakeholders with different backgrounds participated, see Table A1.2 in the Appendix. First, the stakeholders discussed the visioning of how the food environment in Accra should look in 2050 when there is a healthy diet for all. Then, stakeholders discussed the transition pathways how to achieve or contribute to achieve the future vision. In practice, three groups of stakeholders were formed with diverse backgrounds for discussing the visioning and the transition pathways. For the visioning, there was a plenary session after the group sessions to converge to one common vision. For the transition pathways, the group sessions worked on the transition pathways description separately.

In the interactive session on the visioning, ideas on what the food environment in Accra should look in 2050 when there is a healthy diet for all were collected. The ideas on the visioning have been converged in one common vision of the stakeholders, which is visualised, see Figure 4.1, and summarised below. The figure presents the vision of the Accra food environment as a result of the first Transition Pathway workshop.



Figure 4.1 Future vision of the Accra food environment as a result of the first Transition Pathway workshop

Sustainability has become an **integral part of local culture**, see Figure 4.2. People are exposed to healthy diets from a young age – fresh fruits and vegetables are part of school diets and children are educated on sustainability. People are proud of their food culture. Ghanaian cuisine is known worldwide and Ghanaian chefs are famous.



Figure 4.2 Traditional Ghanaian healthy food as integral part of the future vision

Government and **private sector** provide the **right conditions**. Healthy and sustainable diets are a shared responsibility. It is recognised that it takes a combined effort to ensure that healthy and sustainable foods are affordable and accessible to everyone. Examples are better conditions for food storage, transportation and tax benefits that encourage healthy and sustainable food choices.

At the same time, the **urban environment** will be characterised by **green surroundings**. Farmers will remain respected suppliers of main food sources, but people will **increase awareness** by actively carrying out their pride in relation to Ghanaian food traditions, using (social) media as a tool to promote Ghanaian cuisine and in products grown in urban gardens.

4.2 Transition Pathways

In the next step, the interactive session on the pathways, three groups of stakeholders formulated their ideas on how the pathways for the food environment in Accra in 2050. With one common vision, during the second Transition Pathway workshop, these pathways emerged. They differ in emphasis on change in the food system, and how this change must be achieved. The three pathways were:

- Maintaining or promoting the Accra food culture, the cultural way (Section 4.2)
- Change the food supply chain, an economic way (Section 4.3)
- Greening the city, the environmental way (Section 4.4)

The ideas on the pathways have been collected and summarised the pathways into three or four key points for each pathway or group in the indicated sections.

4.2.1 Maintaining or promoting the Accra food culture

4.2.1.1 Description

Idea

Finding pride in the Ghanaian traditional food culture will help achieve sustainable diets in Accra.

Storyline

There is currently a movement sparking media attention on chefs cooking healthy diets based on local tradition and culture. This movement that is attracting global attention is starting as a niche activity but it is expected to become very important in about ten years from now. Parallely, schools are also paying more attention to healthy food and they are starting to take responsibility in growing their products themselves. The movement on traditional food empowerment and the commitment taken by schools in healthy food growth can be combined in supporting a transition towards more healthy food consumption especially considering younger generations.

Common understanding

The discussion among stakeholders also highlighted the need to come towards a common understanding of what healthy and sustainable food. This can allow for a better engagement of concerned food systems actors (e.g., farmers, health workers, nutritionists, teachers) and under the advocacy of civil society and academia. In addition, the dialogue detected the need for the government to implement policies able at facilitating transitions towards healthy and sustainable diets for example by using carrot and stick policies to improve the food environment in the direction towards the transition.

Education

Education and capacity building have also been recognised as important ingredients in the transition towards more healthier diets. In effect, in the long run by including nutrition education in the curriculum from preschools to tertiary schools, there could be a significant shaping of the future generation as children can be the change agents for the long run.

Pride of Accra's food culture

To safeguard Accra's **food culture** with **pride** was also an important issue in the discussion. Stakeholders identified stakeholder involvement to strengthen the linkages to improve the food supply chain from farm gate to point of purchase and involvement of new actors such as chefs and influencers. This might even boost food tourism to Accra.

4.2.1.2 Action perspectives

There were four main categories of action perspectives identified, see Figure 4.3:

- **Educate people on indigenous food, and its nutritional benefits to attract tourism** Allow food educators to take the lead in the advocacy of healthy foods, for example through food tourism programs. Also, it was believed that it is important to sensitising consumers on the nutritional benefit of indigenous food, for example by intervening in the public education through channels such as social media.
- **Encourage growing crops**
The promotion of the food culture also requires acting in the surrounding environment and specifically open spaces all over the city where activities such as backyard farming and school gardening can take place.
- **Educate children to choose healthy food with recipes**
Among consumers, children were recognised to be a target category as their young age and the emphasis on their ability to learn faster can be efficient ways for them to internalise new concepts on healthy foods, thus affecting their future diets. Moreover, to enhance the impact of this action nutritionists and dieticians are important in leading the development of quick and healthy food recipes with the support from chefs.
- **Promote healthy and sustainable food with showcases**
Other means to promote and maintain a healthy and sustainable food culture in Accra, was recognised in making healthy food environments more attractive. For example, by organising competitions with healthy food themes across higher level education institutes, but also by acting within food fairs environment.

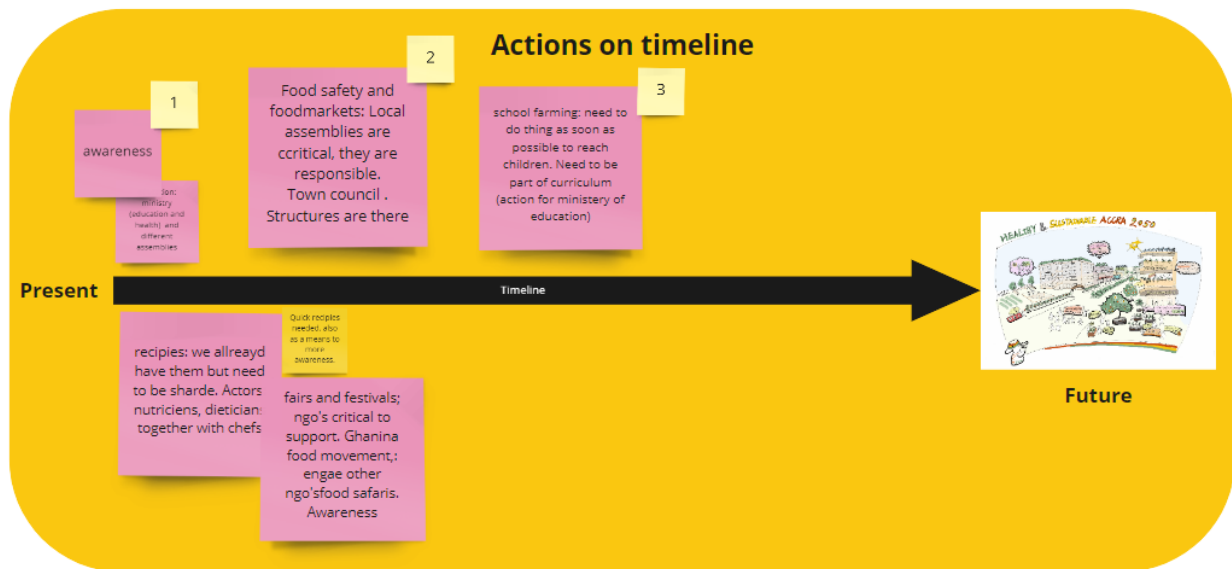


Figure 4.3 Timeline for the actions perspectives of the pathway 'maintaining or promoting the Accra food culture'

The action with the highest priority is raising awareness of healthy and sustainable diets, which would be the mission of the Ministries of Education (MoE) and the Ministry of Health (MoH) and local assemblies. The action with second priority would be the improvement of food safety especially at the local food markets. Local assemblies are responsible and the structures to improve food safety are available. The third priority would be the action of school farming. With school farming, children are educated how to grow food and will learn the nutritional value of the crops grown. It needs to be part of the curriculum, and the ministry of Education is responsible for this action.

Other actions that are ready for implementation are the recipes for healthy diets within the Accra food culture. With the help of actors, nutritionist, dietitians and restaurant chefs, the recipes must be shared among the citizens of Accra. This can also be done with the organisation of food fairs and food festivals. The support of NGOs is critical to set up a Ghanaian food movement to attract foreigners to spend time in Accra for its food culture.

4.2.2 Change the food supply chain

4.2.2.1 Description

Idea

Healthy food should be safe and accessible for everyone through shared responsible leadership. By changing the food supply chain and holding supply chain actors accountable, healthy and sustainable food such as fresh fruits and vegetables become available for everyone.

Storyline

The first step in changing the supply chain to facilitate healthy and sustainable diets is defining stakeholder roles and responsibilities within the value chain. For example: who is responsible for safe transportation and storage of fresh fruits and vegetables? This is accompanied by gaining insight into rules and regulations that need compliance. At the consumer side, education is used to increase consumer awareness, for example by setting up education centres aimed at nutrition. While accountability of governments and corporate partners takes off, alliances or business cases between the private sector, civil society and other relevant stakeholders are set up to accelerate accessibility within the food supply chain. Once accountability and rules and regulations are clear and applied, supply chain actors gear their business cases more towards healthy and sustainable diets for all. Moreover, monitoring systems are put into place to enforce health and safety

regulations. Finally, consumers are empowered to demand healthy, safe and sustainable food and supply chain actors support this by introducing labels to easily such food products.

Clear policies and regulations

Clear policies and regulations toward healthy diets, by local and national governments. Make laws/regulation that support access to low-cost healthy foods. Land allocated to agricultural cultivation should be protected for other function like construction. And support farmers and market parties technically and financially when they show good practices via licensing. But stakeholders need to work towards a vision for healthy and sustainable diets collectively.

Change the food supply chain

Bring cooled storage spaces closer to markets for a safer storage of food and a reduction of post-harvest losses for farmers.

Education

Use of social media and platforms to educate people. Advertise healthy foods via radio programs, social media and videos. Teach people how to grow their own vegetables. Teach farmers how to cultivate crops using best practices via agronomic services. **Education** of people in education centres for healthy foods and nutrition. Start nutrition education in preschool. Education is the responsibility of the ministry of education.

4.2.2.2 Action perspectives

Actions

Clear policies and regulations in the food value chain

To set up supply chains that cater towards healthy and sustainable diets, clear policies and regulations are needed. One way to go about this is to learn lessons from other countries: how do they ensure compliance through regulations? There is a clear role for the ministry of Food and Agriculture (MFA) and the Food and Drugs Authority (FDA) to create policies and regulations which are: prioritised, accountable, protect consumer rights to healthy and safe food, and improve standard levels of quality. Safety should start at the level of transportation and storage of food. Additionally, appeals to corporate responsibility and nudging to compliance to standards should be addressed. Making it attractive to create business cases around healthy and sustainable foods (e.g. hortifresh partner) and fitting interventions to food traditions is a way too further ensure permanence and success within the food supply chain.

Education

Consumer empowerment through education is a way to make consumer more aware of healthy and sustainable choices. Education can be linked to businesses, but it is important to remain realistic about who is responsible; government nutrition education centres are another way to go about it. Such education centres should focus on healthy foods and nutrition and their target group should be households and vendors. Additionally, raising awareness of the risks of unhealthy foods can be part of education.

Affordable and sustainable transportation and storage

Creating access to healthy and sustainable starts at early in the value chain with appropriate transportation and storage of fresh food products. Right now, food is wasted or reduced in quality due to unavailability of proper storage facilities. To ensure that food stays fresh, storage should be close to where the food is needed to avoid quality reduction during transportation. Such transportation should however be cost-effective, which could be achieved through sharing transportation costs. Fruits and vegetables are perishable, and therefore require specific storage conditions for which capital is needed as well. There are opportunities for collaboration and cooperation that can be explored to lower or re-distribute storage costs.

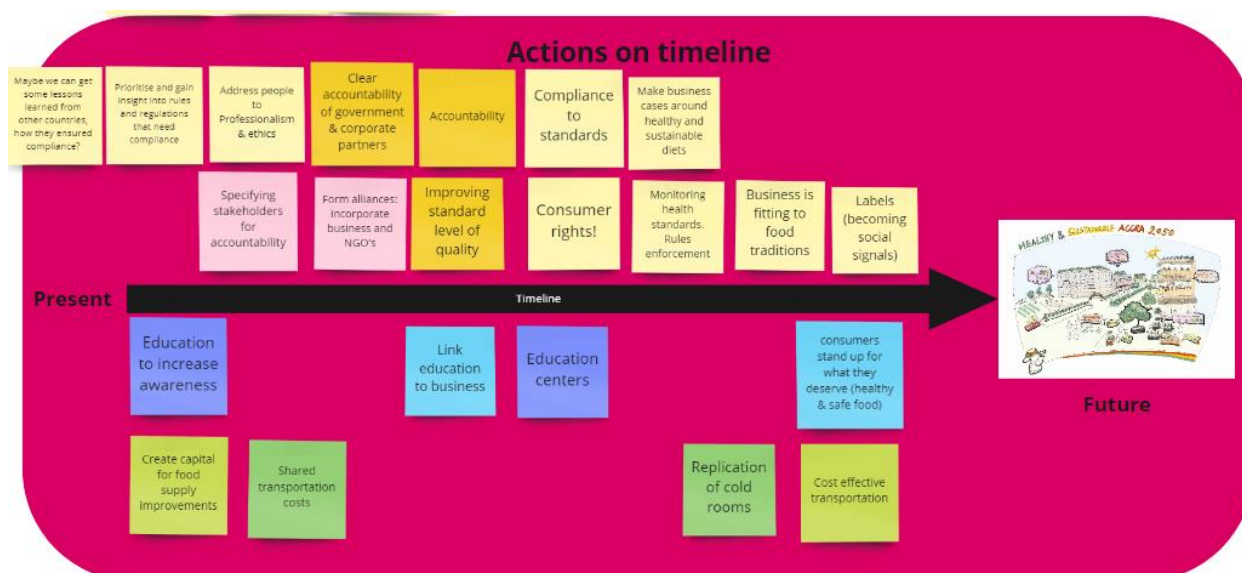


Figure 4.4 Timeline for the actions perspectives of the pathway 'Changing the food value chain'

The first actions are related to the warrant of compliance of rules and regulations, see Figure 4.5. On the one hand, it can be lessons learned from other countries and on the other hand it can be a review of the existing rules and regulation related to food production and provision in Ghana. The next step would be addressing professionalism and ethics to people, and set clear accountability of government and corporate partners. There need to be improved and clear standards for food production and provisioning which need to be complied to by all businesses in the food sector by monitoring these standards. Moreover, there should be made a business case around healthy and sustainable diets, and food traditions need to be incorporated. Once this is available, labelling can be used to make people aware of healthy and sustainable diets within the tradition of Accra food culture. Education to increase awareness is something that can be picked up right away. In a later stage, education can be linked to businesses and education centres around healthy and sustainable diets can be organised. Towards 2050, consumers should stand up for what they deserve: healthy and sustainable diets.

For the food markets, there is an urgent need for capital to realise food supply improvements, such as building well-equipped storage facilities in urban centres near markets and food stores. In this way, transportation cost can be reduced. In a later stage, cold rooms can be replicated, and transportation can be made even more cost-effective.

4.2.3 Greening the city

4.2.3.1 Description

Idea

Improve food and nutrition security in Accra by planting more trees and particularly fruit trees in public areas. On the one hand, people that cannot afford to buy fruits can take fruit from trees in public areas. On the other hand, more fruit trees can increase the urban livelihood from a climate change perspective as a form of climate adaptation lowering temperatures in urban settings.

Storyline

The city of Accra is growing fast with the current speed of the urbanisation developments. To make sure that the city remains a liveable place concerning climate change and food supply, the green infrastructure needs to be maintained and improved. Moreover, there are more and more low-income people which often lack access to affordable and healthy food items like fruits. Therefore, greening the city with fruit trees would be beneficial from both the climate adaptation and the healthy diets for all perspective.

Strict policies for healthy diets promotion

Policy directions to make unhealthy food less attractive and healthy food more attractive by using the concept of true pricing in the value chain, use taxation for unhealthy foods and subsidies for healthy food and/or use Corporate Social Responsibility (CSR) principles to food outlet like supermarkets and convenience stores to safeguard the supply of healthy foods. In the case of supermarkets and convenience stores, standards for the supply of healthy food could be applied and enforced.

Education

Education of general public on the importance of healthy and sustainable diets with the help of the government, NGOs and churches. The (social) media is a strong force in influencing behaviour. Educate people other practices like backyard gardening or sack gardening of food crops i.e. operation feed yourself revisited. Educate farmers with the best practices.

Greening the city

By planting fruit/food trees in public spaces with shared responsibility of the local community. More storage and processing factories to avoid harvest losses of and food waste of perishable food products

4.2.3.2 Action perspectives

There were 5 main categories derived from all the action perspectives that were identified, see Figure 4.5.

Governance structure to support greening the city

- Available land, coastal areas, wetlands and cemeteries in and around Accra are more and more taken away by construction sites. Tree planting can be integrated in spatial planning:
 - a. Include tree planting in new developed outlets (e.g. supermarkets) and traditional markets.
 - b. Prevent people to cross crowded roads by planting grains;
- The regional authority (like the Accra Metropolitan Assembly, or the Greater Accra Metropolitan Area, for instance) can guide the planting of trees by including spatial planners;
- To tackle also land use and land ownership of publicly accessible places potentially usable for tree planting, because land owners might refuse to cooperate and hinder the planting of trees;
- With respect to climate change adaptation, Adentan Area municipality - at the northeast of Accra of the Greater Accra Metropolitan Area - already implemented actions of planting trees (targeted at households) in the flood area;
- The involvement of Research Institutes as well such as the Council for Scientific and Industrial Research (CSIR) in Ghana is important for providing evidence for impacts of the tree planting. Moreover, they can set examples as well.

Responsibility to keep the action monitored

- local authorities, municipalities, local assemblies etc. are responsible for parks and gardens, which are typical places to explore fruit tree planting. More attention should be given to these actors to share the responsibility of greening the city with fruit trees.

Community action

- Slums (urban poor) limitation of actions in these communities;
- Universities promoting tree planting.

Education

- Improve education over food production to affect the greening of the city.

Food labelling for local products

- Indicate the origin of food. In the case of greening the city, food labelling can indicate the origin from local parks and trees, so that it educates the population in the promotion of greening of the city.

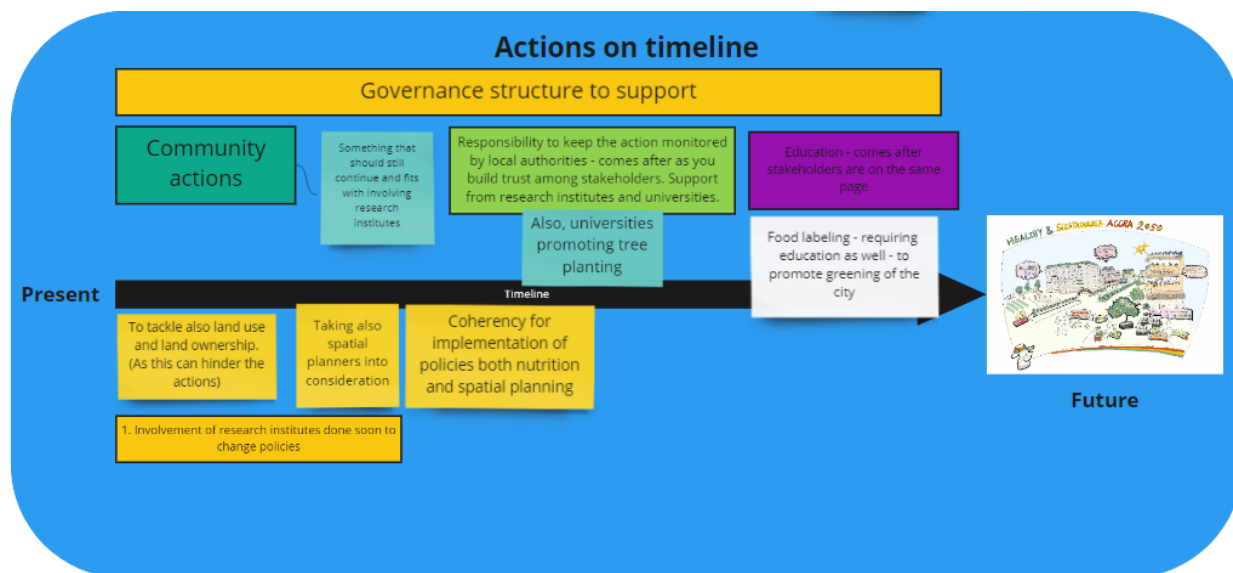


Figure 4.5 Timeline for the actions perspectives of the pathway 'Greening the city'

When putting the action on a time line towards healthy and sustainable diets in Accra in 2050, the actions on top of the line are ones requiring more emphasis. Moreover, the boxes of actions were also stretched to highlight the expected length of the actions.

Community actions for greening the city are needed with high importance. At the same time, the land use and land ownership issues that hinder actions to be explored needs to be tackled. Afterward settling the land use and land ownerships issues, the connection with spatial planners can be made to incorporate activities to accommodate healthy and sustainable diets in Accra. Moreover, Research institutes need to be involved from the start to provide scientific evidence of the benefits of greening the city also for improving healthier and sustainable diets. With this evidence and the link with spatial planning, the coherency between nutrition and spatial planning policies can be improved.

Furthermore, the local authorities responsible for public spaces in the Accra metropolitan area can implement and monitor the implementation of the coherent spatial planning policies. Meanwhile, universities promote tree planting. Finally, educating consumers and citizens can be formalised when stakeholders are all on the same page. Accra food products can be promoted by using food labelling.

4.3 Summary of pathways

Although the descriptions of the pathways were drawn-up independently, some similarities and differences can be observed when comparing the three pathways, see Table 4.1. The common elements of the pathways were **education**, **stakeholder involvement** and **policies**, although the pathways differ in the ideas how to realise it.

The three pathways are:

1. Maintaining or promoting the Accra food culture (the cultural way)
2. Change the food supply chain (the economic way)
3. Greening the city (the environmental way)

The paths differ, but are not opposite. They complement each other.

Education is seen in three different dimensions, cultural economic and environmental. It differs on how it is presented as sometimes it is seen as an immediate action and other times as a more long-term aim (education for children). However, it is important to emphasise that it is an action recognised in all pathways to educate people either with a focus on enhancing the pride for indigenous and healthy food, or to increase awareness of the risks underlying unhealthy food. Also, education can be more linked to the production level

and greening options. All these views can accompany each other in transition towards more healthy diets. Pathway 2 also enhances the link with businesses with attention on education for affordable and sustainable transportation and storage.

Stakeholders identified by the three pathways include multiple and different social groups in the city. What is clear is that the government should play an important role in all pathways. In Pathway 1 attention is also directed to citizens and children, meaning that the focus is more on a structural change requiring more time for becoming effective. Moreover, this might also mean that there could be challenges linked to implementation. Pathway 2 focuses on consumers and the private actors in the agri-food supply chains. In effect, some actions envision to promote healthier diets in Accra through social media, cooking shows for instance. This also highlights the need for including the private sector into the activities for reaching the outcomes of the pathway. However, stakeholders identified a lack of private sector representation (see section 3.3.6). Being that Pathway 3 focuses more on greening the city through for example urban farming, activities are supposed to be carried out by the whole community that can then result in sharing of the positive outcomes.

Lastly, **policies** are all directed towards the promotion of sustainable attitudes and practices (e.g., greening of the city and healthy and sustainable food), but also towards structural and operational needs, such as governance structure enhancement and presence of clear policies and regulations to support sustainable actions. However, different target groups can be affected by policies for sustainable and healthy diets. For example, Pathway 1 looks forward to encouraging the growing of crops that can be done at individual level and community level (Pathway 3) but also with the private sector which requires key policies and regulations (Pathway 2).

Table 4.1 Similarities and differences of the action perspectives mentioned in the three transition pathways

	Maintaining or promoting the Accra food culture	Change the food supply chain, the economic way	Greening the city
Common elements	Cultural pathway	Economic pathway	Environmental pathway
Education	Educate people on indigenous food, and their nutritional benefits to attract tourism (short term) and children to choose for healthy food with recipes (long term)	Education centres for healthy foods and nutrition (households, mothers, and vendors) to increase awareness of risks of unhealthy foods	Education: Improve education over food production to affect the greening of the city
		Link education to business be realistic about who is responsible	
		Affordable and sustainable transportation and storage	
Stakeholders	Government Citizens and a specific emphasis on children (long term)	Government Private sector in agri-food chain	Local government Community action
		Consumers stand up for what they deserve healthy and safe food	
Policies	Encourage growing crops by promoting healthy and sustainable food with showcases for instance	Clear policies and regulations in the food value chain	Governance structure (e.g., food labelling) to support and monitor greening the city

4.4 Linkages to current actions of the GUFÉ coalition

The GUFÉ coalition was established to find joint solutions to these issues by addressing them from a food systems perspective. The GUFÉ coalition is a partnership between The Netherlands Food Partnership working in collaboration with (young) food entrepreneurs, urban planners, farmers, chefs, nutrition workers, government officials, food journalists, agro-ecologists, academics and many others from Ghana and The Netherlands. Starting in the capital, Accra, the GUFÉ coalition hopes to be able to find effective solutions to the many challenges the urban food system faces in realising healthy diets for all. To better understand how the GUFÉ coalition's efforts are supporting their goals, the group recently came together to develop a theory of change for the GUFÉ coalition. The theory of change connected the action plans from the coalition to the future visions presented in this report.

The collective was provided with a small amount of seed funding from the Netherlands Food Partnership to get activities started and demonstrate a proof of concept. The four action groups - 1. Urban Consumer; 2. Trading and Purchasing Environment; 3. Healthy Food Availability; and 4. Enabling Environment - formulated Terms of References for their actions, and one action was selected to demonstrate the proof of concept. Based upon the Terms of References of the four action groups, the GUFÉ coalition developed a theory of change to show how the GUFÉ coalition envisions its actions to contribute to a change of the food environment in Accra which contributes to healthy and sustainable diets for the Accra population. Moreover, the theory of change supports evaluation and improvement of the coalition's work, by making the links between activities and outcomes more explicit.

While the theory of change presents the activities of each action group separately, one of the critical ways that the partnership adds value is by working to address challenges and bottlenecks across the food system, and thus synergies and collaboration between the activities of the members were also considered. The elements marked with TP were identified as action perspectives in the transition pathways workshops, see previous sections. Please find a pdf of the ToC here: [https://www.nlfoodpartnership.com/insights/Ghana Urban Food Environment Theory of Change/](https://www.nlfoodpartnership.com/insights/Ghana_Urban_Food_Environment_Theory_of_Change/)

The ToC has been drawn up for all the actions identified by the GUFÉ coalition and below we describe how the GUFÉ actions are linked to the Transition Pathways in the sections 4.2 to 4.4. In addition, for each action group, some of the actions are linked to outcomes, outputs and impact. Moreover, we identified the key assumptions for the ToC related to the impact of the actions selected.

4.4.1 Urban consumers

Action Group 1 aims for healthy diets bought and prepared for people in Accra, which relates to the Transition pathways 'maintaining Accra's food culture' as well as 'Greening the city', see Figure 4.6. However, there were two problems encountered. First, there is little knowledge on healthy and indigenous food (left-hand side of Figure 4.6). To bridge this knowledge gap, three interventions/activities were suggested: live cooking shows, online cooking shows targeted at young people, and social media campaigns on healthy preparation and consumption of food. The outputs of these activities are that young people start growing their own food, if they are confident enough to change diets. More people are present on social media related to healthy food, if there is no misconception on the higher cost of traditional diets compared to current diets. The outcome of this is that the Accra food culture is and contributes to purchasing healthy food by inhabitants of Accra. Second, one concern is the low purchasing power of a large group of food consumers in Accra. Activities to overcome this concern is to open the dialogue on options to farm your own food and to farm on rooftops, schools and public spaces for healthy diets for the less-fortunate inhabitants of the community. The output of these activities is the establishment of urban farmers throughout the city of Accra, which use roof tops, schools and public places for urban farming. These activities contribute to the greening the city pathway (see Section 4.2.3.) and to the impact of the accessibility of healthier food for all.

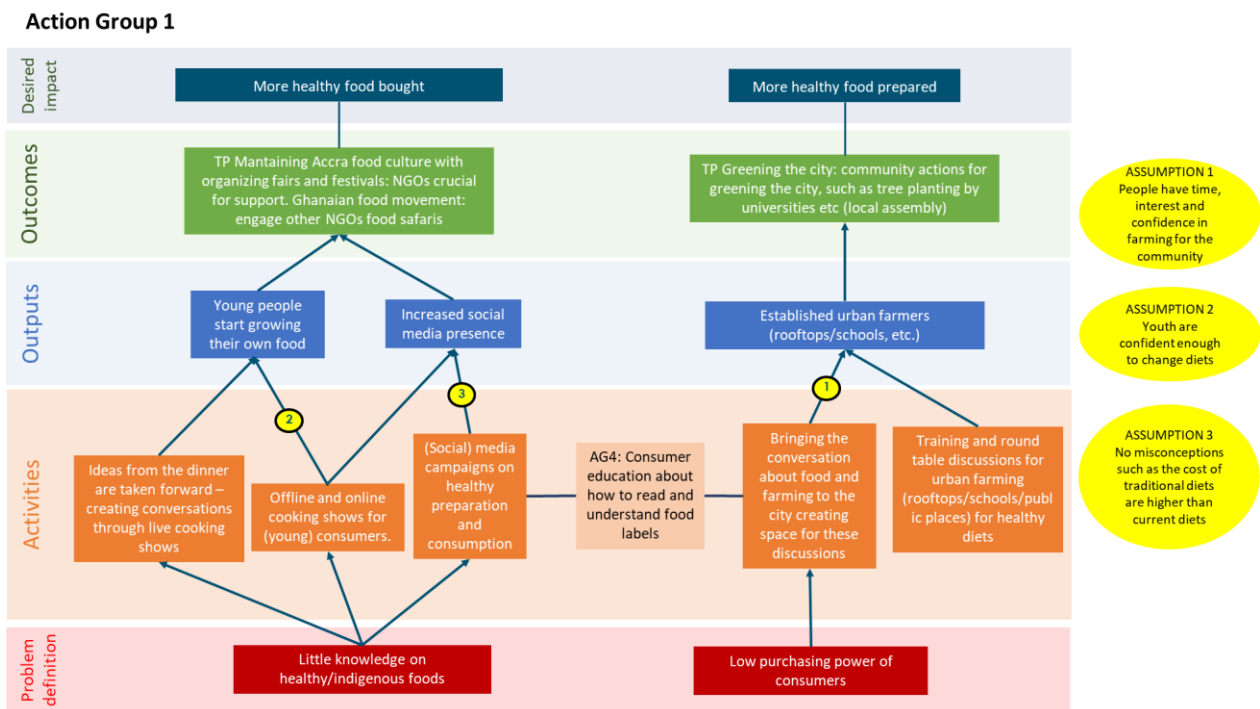


Figure 4.6 ToC of the activities in Action group 1 of the GUFÉ coalition related to the pathways

4.4.2 Trading and purchasing environment

In Action Group 2, the desired impact is to create sustainable markets within Accra, in which food waste is handled properly, there is child care for the children of female vendors, and there are improved facilities to enhance food safety like cold storage, etc. The transition pathway 'change the food supply chain' relates to this desired impact, see Figure 4.7. There are two underlying problems: 1) the lack of infrastructure and equipment of the current wet markets in Accra and 2) the lack of trust between market vendors and the local government regarding tax payment and how the money is used to manage the markets. To overcome the problems, four activities were suggested: understanding the food flow based upon interaction with stakeholders, identifying the governance structure of local wet markets, rebuilding trust between market vendors and local authorities, and finally an overarching workshop in how markets should be upgraded to make them more sustainable. There are two key assumptions for these activities namely all involved stakeholders need to be willing to be involved and implement new skills (free riders might disturb the process) and the trust between market vendors and the local authorities need to be re-established. Note that there are also linkages with activities organised by other Action Groups, like the Use of food waste in urban farming form Action group 1.

Only if the conditions are met, will there be consensus on the do's and don'ts of an upgraded market, and can the link with the Milan Pact be established successfully. The practical outcome would be a food safety training with at least three wet markets in Accra. All outputs contribute to a more sustainable food supply chain with lower burdens on food safety issues, and ultimately to more sustainable markets.

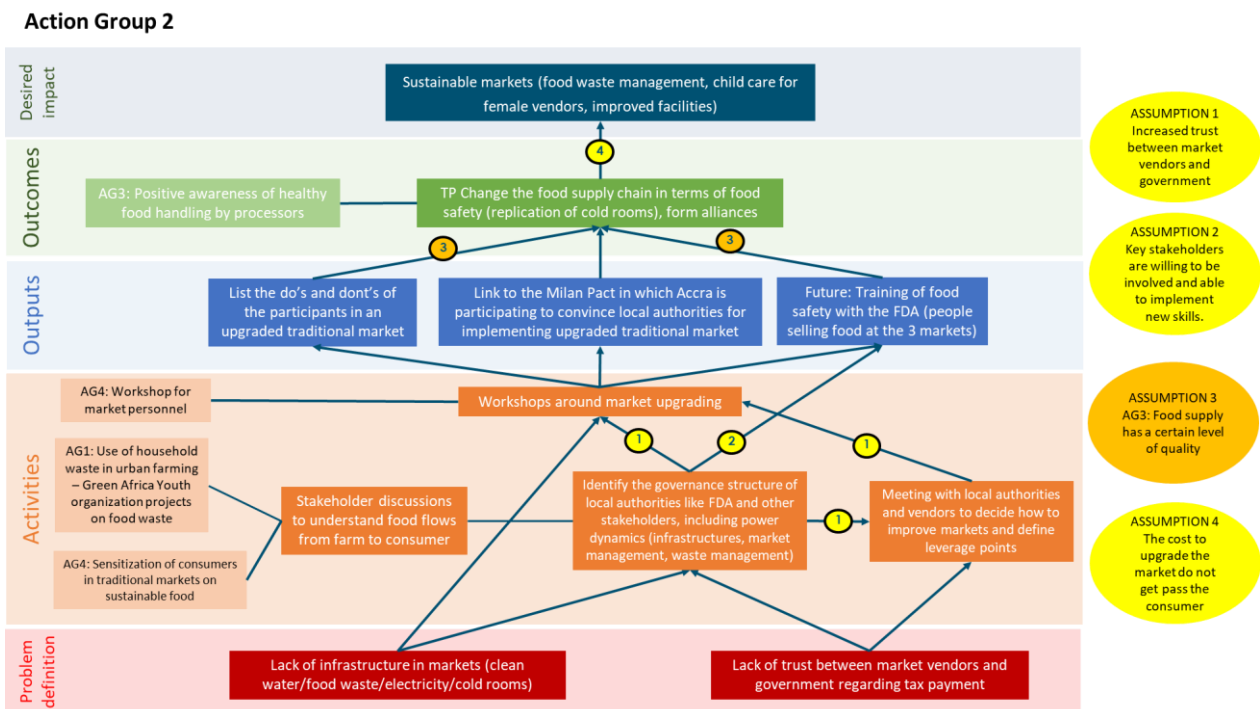


Figure 4.7 ToC of the activities in Action group 2 of the GUFÉ coalition related to the pathways

4.4.3 Healthy Food Availability

The long-term objective of appreciating quality over quantity by market parties is the objective of Action Group 3, which relates to the transition pathways of the sustainable value supply chain (section 4.3). The two problems encountered for achieving this objective are the lack of supply of adequate food and the perception of negative food safety issues with vegetable and fruit consumption. Two actions were defined which relate to the pathway, see Figure 4.8. First, certification of food processing is implemented, and second training on food safety packaging are conducted. There is a clear link with one of the activities in Action Group 4, which links food safety training to policy aspects. The output of the activities is threefold. First, a physical certification system is in place. Second, training on food safety issues including the explanation of the certification system is conducted. Those trainings can only be successful if there is full commitment of the food processors in the value chain to participate. Finally, there is awareness amongst consumers on food safety issues. This is also stimulated by activities conducted in Action group 1 and Action Group 4. In terms of outcome, all outputs contribute the transition pathway 'Change of the food supply chain' towards sustainability and healthy diets. The physical certification will only contribute to this goal if producers reach the required standards, and manage to prepare good-quality products. Other outcomes are that there will be financial capacity for producers to comply to the certification system, and that consumers will appreciate the good-quality food.

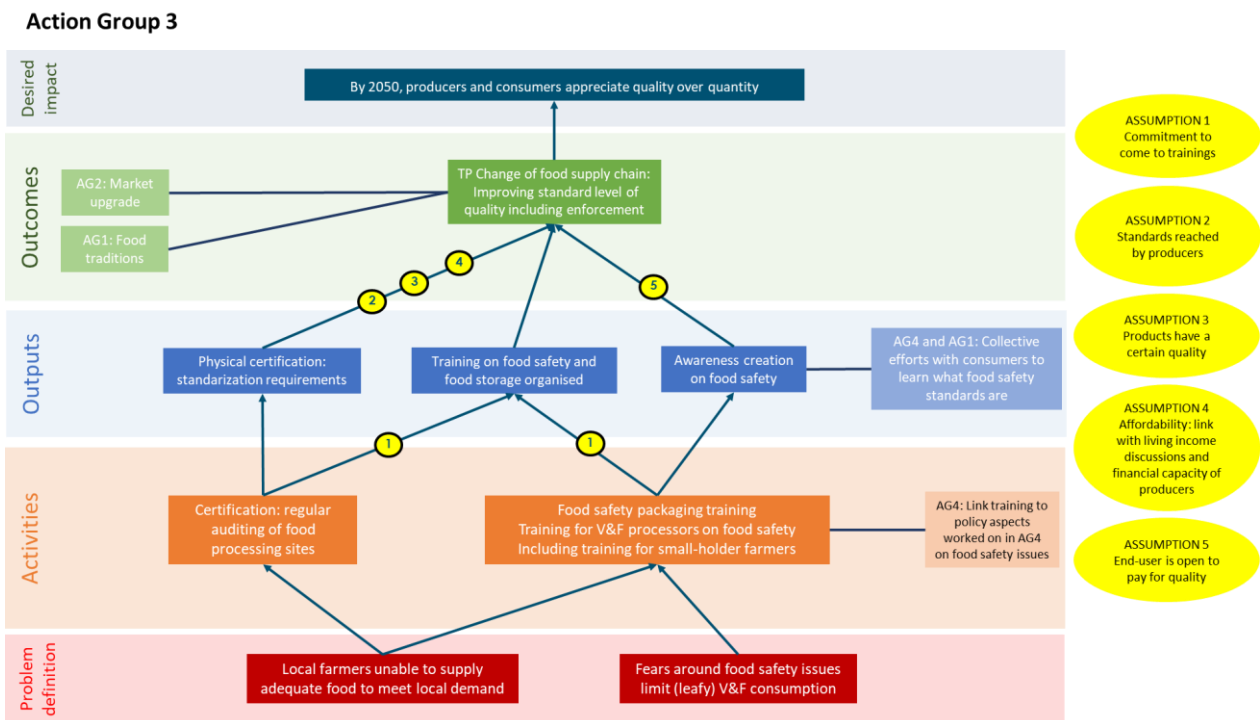


Figure 4.8 ToC of the activities in Action group 3 of the GUFÉ coalition related to the pathways

4.4.4 Enabling environment

Action Group 4 focuses on the use of a nutrient profiling system to improve healthier diets in Accra. This related to the transition pathway that maintains or promotes the Accra food culture, Figure 4.9. However, there is no regulation on products and a policy on de-stimulating nutrient poor food is not in place. Moreover, education and awareness on nutritious food is lacking. The activities relating to maintaining the Accra food culture are the development of a Ghana specific nutrient profiling system (NPS) and conducting workshops to inform stakeholders on their food choices based on the NPS. The output is the awareness of nutritious food by stakeholders with the emphasis on the Accra food culture. The pre-condition is that the NPS will be developed with consensus of all stakeholders. The outputs will contribute to the transition pathway of maintaining Accra's food culture as well as the transition pathway of changing the food supply chain. At all levels there are linkages with activities, output and outcomes of other Action Groups.

Action Group 4

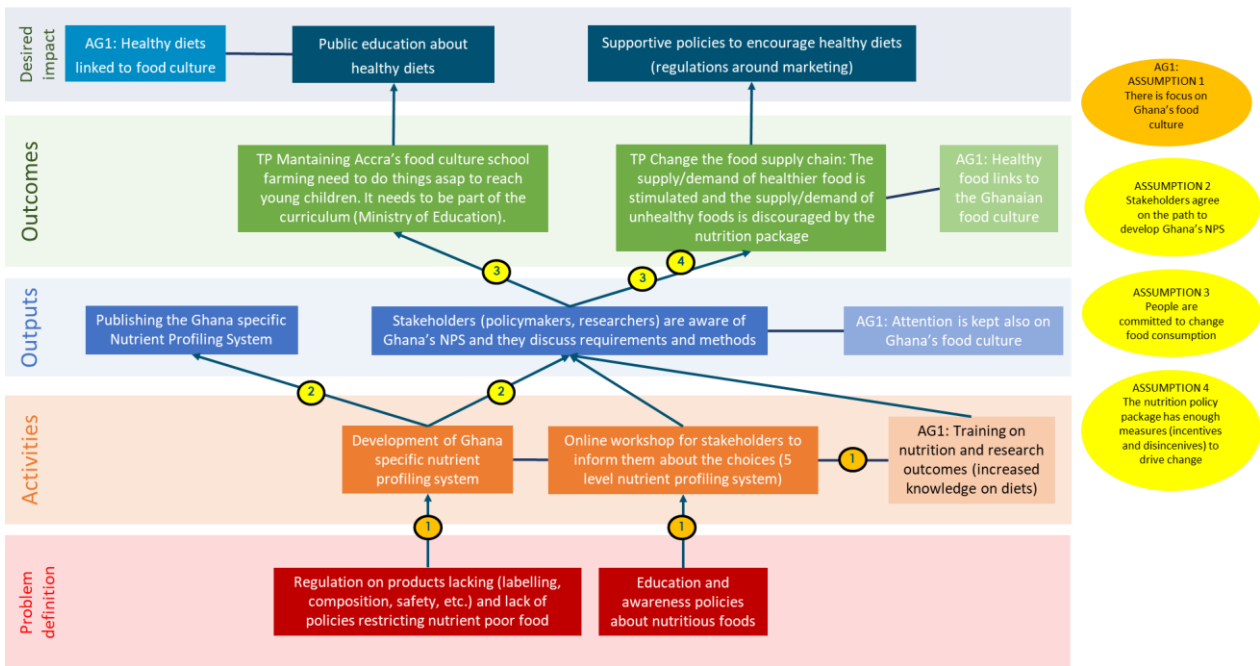


Figure 4.9 ToC of the activities in Action group 4 of the GUFU coalition related to the pathways

5 Conclusions

There are multiple ways of transition to explore the achievement of healthier diets in urban food environments. However, people with different backgrounds have different views on how food systems and urban food environments should change to achieve the healthier diet objective or overcome the identified gaps. With a participatory approach, one can determine common visions on what the future food system including urban food environments should look like. Moreover, multiple pathways with diverging emphasis can exist next to each other.

The multiple interactions with the stakeholders resulted in three different pathways towards healthier diets in Accra. The emphases of these pathway were different:

- I. The cultural pathway **maintaining and promoting Accra's food culture**;
- II. The economic pathways **optimising the food supply chain** into Accra in every stage of the process; and
- III. The environmental pathway on **greening the city** with food crops and trees. The emphasis emerged from the group of stakeholders rather than indicated by the researchers beforehand.

Although the description of pathways have been drafted independently, there can be observed some similarities and difference when comparing the action perspectives of the three pathways. The common elements of the action perspectives were education, stakeholder involvement and policies, although the implementation of these elements differed across the action perspectives of the pathways.

However, the action perspectives defined were not as practical as the action defined by the GUFÉ coalition. Therefore, the pathways were integrated into the theory of changes of the prepared for the actions of the four action groups of the GUFÉ coalition. The pathways nicely fit in the theory of changes, although in most cases, the pathways can be linked to actions of multiple action groups.

The participatory approach has greatly benefited from the existence of the GUFÉ coalition initiated by NFP. It created a head start for applying a participatory approach looking for transition pathways towards healthier diets in the urban environment of Accra. GUFÉ coalition members and other stakeholders voluntarily participated in the workshops and interviews. The composition of the groups of participants of the events was dynamic as people participated only once, people were replaced etc. Despite the changes in participants, there was a core group of people participating in most events. One aspect for improvement of the workshops would be to guarantee the engagement of representatives of all relevant stakeholder groups. The government as well as the citizens were underrepresented in the workshops.

The next step would be to discuss the results of the pathways with representatives of the government and other stakeholders to raise awareness of the opportunities that are there to change and accelerate the change the urban food system of Accra towards healthier diets for all.

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Appendix 1

Table A1.1 *People interviewed*

Name	Organisation
Dorcas Ansah	WIEGO
Franka van Marrewijk	African Architecture Matters
Herbert Smorenburg	Choices International Foundation
Julia Anyanewaa Appiah	MDF Ghana
Sodey Akoto	University of Ghana
Valerie Gueye	Ghana Food Movement

Table A1.2 *Participants in the workshops on 2 November 2021 and 2 December 2021*

Name	Organisation	Participated in	
		workshop 1	workshop 2
Abraham Oduro	Research and Development Division, Ghana Health Service	V	X
Ato Kwamina	Agriculture and Climate Empowerment Centre Ghana	V	X
Bezalel Adainoo	Stay Well Now	V	X
Cecilia Akuley Gyimah	MDF Ghana	V	V
Cecilia Kwateng Yeboah	CERATH Development Organization	V	X
Daniel Amanquah	Sight & Life	V	V
Debbie Ajei-Godson	Farminista Africa Limited	V	V
Elijah Amoo Addo	Food for All Africa	V	V
Ellen Mangnus	WUR	X	V
Franka van Marrewijk	African Architecture Matters	V	X
Freda Asem	University of Ghana	V	X
Geoffrey A. Asalu	University of Health and Allied Sciences	X	V
Herbert Smorenburg	Choices International Foundation	V	V
Julia Anyanewaa Appiah	MDF Ghana	V	X
Nelson Owusu Ntiamoah	African Youth League (AYoL)	V	V
Nicole Metz	Netherlands Food Partnership	X	V
Ore Fika	Erasmus University Rotterdam	X	V
Paa Kofi Osei-Owusu	CERATH Development Organization	V	V
Pearl E. Selormey	HortiFresh	X	V
Philip Emefe	DSM	V	V
Rene van Veenhuizen	Hivos	X	V
Representative	Dutch Embassy	X	V
Richard Yeboah	MDF Ghana	V	V
Stella Obanyi-Brobey	CERATH Development Organization	V	X
Theodore Makafui Adovor	Farmhub Ltd	V	V
Tracy Mensah	Ghana Netherlands Business & Culture Council (GNBCC)	V	V
Wristberg Ebenezer Ofei	CERATH Development Organization	V	X

V=Participated.

X=Not participated.



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The mission of Wageningen University & Research is “To explore the potential of nature to improve the quality of life”. Under the banner Wageningen University & Research, Wageningen University and the specialised research institutes of the Wageningen Research Foundation have joined forces in contributing to finding solutions to important questions in the domain of healthy food and living environment. With its roughly 30 branches, 7,200 employees (6,400 fte) and 13,200 students and over 150,000 participants to WUR’s Life Long Learning, Wageningen University & Research is one of the leading organisations in its domain. The unique Wageningen approach lies in its integrated approach to issues and the collaboration between different disciplines.

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