

10th June 2026

Dear Colleague

Call for Evidence - Education (Holiday Meal Payments) Bill

Thank you for the opportunity, supplementary to our response of 18th May 2026, to provide additional detail on the specifics of food poverty (and relevant characteristics of) and the extent and location of rural / urban food deserts in support of members' scrutiny of the Education (Holiday Meal Payments) Bill. Our comments are presented below and we hope you find them helpful.

The specifics of food poverty (and relevant characteristics of food poverty) in Northern Ireland

Food insecurity prevalence in Northern Ireland: The most recent data (DWP, 2023-24) reported that 11% of households in Northern Ireland experienced food insecurity (also known as food poverty): low household food security (5%) or very low household food security (5%). Households with children were more likely to be food insecure (8% low; 8% very food security) compared with households without children (4% low; 4% very low). Households with more children is an indicator of increased risk of food insecurity (Furey *et al.*, 2019). One in 20 (5%) households reported accessing food banks in the previous 12 months and presenting to food banks was also more likely for households with children (2% within the last 30 days; 6% within the last 12 months), compared with households without children (1% within the last 30 days; 3% within the last 12 months) (FSA, 2026). In terms of charitable food aid, food banks in the Trussell community in Northern Ireland provided 68,000 emergency food parcels from 1 January 2025 to 31 December 2025. Over 26,000 parcels were distributed for children by food banks in the Trussell community in Northern Ireland, an increase of nearly 9,000 parcels since 2019. This marks a 49% increase since 2019 and is the sixth year in succession that the number of parcels provided for children in Northern Ireland has been above 25,000 (Trussell, 2026).

The Food Standards Agency's *Food and You 2* (Wave 11) data show that 21% of NI respondents had low or very low food security. Around 8 in 10 respondents (79%) in Northern Ireland were food secure (high or marginal food security) (Food Standards Agency, 2026).

The primary drivers for people accessing food banks are threefold:

- The design and delivery of the social security system.
- Work which does not provide sufficient protection from financial hardship.
- Difficulty accessing suitable jobs, especially for disabled people, those with caring responsibilities and parents (especially mothers) (IPSOS and the Trussell Trust, 2023).

Across the wider UK, people from groups who face structural inequalities tend to be overrepresented among those experiencing food insecurity. Racial and gender inequalities contribute to higher poverty rates for some people from some ethnic minority groups and among women. DWP data show that younger households are more likely to be struggling: 21% of younger households are food insecure compared

with 10% of households for all age groups combined, while younger households are more than twice as likely to have used a food bank in the 30 days preceding the survey compared with all other age groups (Office for National Statistics, 2024). Young people who are care-experienced face greater risks of financial hardship in adulthood than people who are not.

Similarly, a 2017 systematic review of 58 empirical studies from countries across the globe suggest that nearly one-third of university students may be food insecure and it is likely that they suffer from “poorer nutritional outcomes, higher stress and depression and adverse learning, academic outcomes and/or productivity” as a consequence (Bruening *et al.*, 2017). In the UK, Defeyter *et al.* (2021) found that increasing levels of food insecurity are associated with decreasing levels of well-being ($\beta = -0.11$, $p < 0.05$) in our student cohort.

Challenges: Households in Northern Ireland have reached the point where income from work and/or benefits can no longer hold pace with the rising cost of living. It is suggested that Northern Ireland has become a depleted nation, not a deprived nation, seeking to subsist on straitened resources due to the structural determinants of poverty. A household pools all of its resources to afford to pay the essential bills and, with any luck, will have something left over for a rainy day or an unexpected expense. When finances are squeezed in this way until there is nothing left then impossible choices have to be made: do I have breakfast or do I put money in the meter? Indeed, for some households there is no choice at all and they can afford to neither eat nor heat their homes. Office for National Statistics (2026) data from March 2026 onward show that households are noticing a new rise in their cost of living due to higher fuel prices as a result of the Middle East conflict which is felt disproportionately by lower-income households that are more affected by high food and energy prices (Francis-Devine, 2026). This has also been found in Northern Ireland when mapping co-poverties: food, fuel and transport poverty (Furey *et al.*, 2023). Do I have a sandwich for dinner because I can't afford to pre-heat the oven? Food has long been recognised as the flexible item of the household budget. It can result in food insecurity – the inability to afford a healthy, quality diet in sufficient quantity, or the worry that you may be unable to do so. It is experienced by the working poor – those who were previously just getting by; low income; underemployed; those with high levels of indebtedness; black and minority ethnic groups; those receiving benefit sanctions; new benefit claimants experiencing benefit delays; respondents who self-reported poorer health status were more likely to be in food-poor households, as were those who had more children; food poverty was less likely to be reported in respondents who were older, in those who owned their property, and in those who had higher household incomes. However, it is important to note that food insecurity still occurs as a problem for older people.

Food insecurity can result in: physical health manifestations – hunger in the short term – malnutrition in the longer term. For example the population-level National Diet and Nutrition Survey (2019-2023) (Food Standards Agency, 2025) shows that:

- Consumption of fruit and vegetable portions was below the recommendation in all age and sex groups, with only 4% of children aged 11 to 18 years meeting the 5-a-day recommendation.

- Children aged 11 to 18 years were the highest mean consumers of sugary, fizzy drinks and squashes at 167mls/day. Similarly, mean consumption of confectionary was also highest in those aged 11 to 18 years, at 14g/day for boys, and 20g/day for girls.
- The highest mean consumption of chips and other fried foods was also among those aged 11 to 18 years (37g/day for boys and 50g/day for girls). Consumption was lowest for adults aged 65 years and over (16g/day for men and 8g/day for women).
- Boys aged 11 to 18 years were the highest mean consumers of meat products (67g/day), with women aged 65 years and over being the lowest mean consumers (17g/day). With the exception of children aged 4 to 10 years, mean daily consumption was higher for males than females.
- Mean daily intakes of total energy in children aged 18 months to 3 years exceeded the Estimated Average Requirement (EAR) and were close to the EAR for children aged 4 to 10 years. Underreporting may partly explain findings relating to energy intake being below recommendations.
- In all age groups, the recommendations for intake of mean saturated fatty acids and free sugars were exceeded. Similarly, the mean intake of fibre was below government recommendations for all age groups.
- When considering equivalised income, the number of 5 a Day portions of fruits and vegetables increased with increasing income (highlighting disparities in different income groups).
- 88% of children aged 11 to 18 years reported buying food or drink from the out-of-home sector (for example cafes, pubs, takeaways) in the last 7 days followed by 84% of adults aged 19 to 64 years and 80% of children aged 4 to 10 years.

The food system needs to also caution against ultra-processed foods (UPFs) and foods high in fat, sugar and salt. As UPFs have increasingly come to dominate people's food consumption they are contributing to the 'nutrition transition' (Baker *et al.*, 2020), accompanied by declining consumption of whole grains, fruits and vegetables, and increasing consumption of animal food products and processed, high fat and sugar foods (Popkin and Ng, 2021). The nutrition debate over UPFs in the diet is not about individual products but rather that increasingly, in many countries, processed foods account for the majority of calories consumed, impacting on nutritional health and contributing to the development of diet-related chronic disease such as heart attacks. They are ubiquitous in developed economies mirroring the increased prevalence in obesity. (The above adapted from Furey and Caraher; 2025).

In 2024/25, the percentage of Primary 1 pupils affected by obesity in the most deprived areas was 73% higher than the rate in the least deprived areas. For year 8 pupils, the most-least deprived gap was slightly larger at 87%. The dental extraction rate in the most deprived areas was more than double the rate in the least deprived (Department of Health, 2026).

Other effects include mental health implications; social exclusion; isolation; anxiety; worry; depression; stigma and loss of dignity; not being able to comfortably afford the social norm of three meals for you and your family every day; worry/anxiety about not being able to afford to feed your family a healthy, sufficient diet; sacrificing your dietary quality to ensure your children/family have enough to eat (maternal buffering); increased reliance on charitable food aid and alternative coping strategies – relying on

family and friends for meals/groceries; having to pay more and have less choice (e.g.) shop in more expensive corner shops where there is reduced food availability and a price premium (poverty/rural premium) – Scottish researchers cost the rural poverty premium to be between 15-30% (Poverty Alliance, 2026); heat or eat dilemma which in some cases may manifest in rationing of both (Snell *et al.*, 2018); lower income; (under)employment; working poverty; increased indebtedness; not participating in the things that your peers do – e.g. healthy packed lunch; having friends/family around for a meal/drink; socialising; holiday; cinema/theatre; meal out; attend a wedding; participating in hobbies (social exclusion).

Individual Challenges: stigma; not believing someone is eligible for help, feeling bad asking for help; not wanting to ask for help; not knowing where to go for help = all indicating that additional awareness raising and signposting are needed to overcome this deficit.

Challenges for the third sector: Food banks are successful failures – they've been around since 2001 in the UK yet food poverty is increasing – we cannot rely on this sticking plaster on a gaping wound (Caraher and Furey, 2017).

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The extent and location of rural / urban food deserts

Approximately 37% of the Northern Ireland population lives rurally; this is a significant minority and it is entirely appropriate that their experiences of poverty and social exclusion are ameliorated. It is our position that Northern Ireland must not typify a two-tier system whereby householders and consumers are disadvantaged by consequences of their rurality either in terms of their ability to access, afford or avail of healthy food that meets their right to food in socially acceptable and socially inclusive ways, without stigma, shame or deficiency. Access to basic services and choice – including food, socio-cultural activities, and informational access – must not be depleted for our rural dwellers. Furthermore, physical access is compounded for rural dwellers where they may experience the double disincentive of car-lessness and/or problematic access to purposive public transport amenities.

By virtue of our dispersed population, Northern Ireland consumers already experience high costs in relation to fuel and transport expenses which, in turn, increase their potential to experience poverty and social exclusion compared to their urban counterparts. For this reason, any collaborative effort is welcomed to reduce poverty generally and health inequalities; food, fuel, financial and transport poverty; and social exclusion more specifically.

Food is a basic right. According to the Universal Declaration of Human Rights everyone has a fundamental right to be free from hunger and have access to safe and nutritious food. The 1966 International Covenant on Economic, Social and Cultural Rights (ICESCR), and the 1989 Convention on the Rights of the Child are both legally binding. Both explicitly name adequate food and housing as basic human rights. Article 11 of the ICESCR states that: *The States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions*".

At UUBS we have developed a Food Risk Indicator to map and identify the above deficiencies in underserved rural areas. See <https://www.fermanaghomagh.com/your-council/keystatisticsanddata/your-council-projects/?download=file&file=68988> and <https://www.fermanaghomagh.com/your-council/keystatisticsanddata/your-council-projects/?download=file&file=68988> for previous Northern Ireland work on mapping co-poverties: food, fuel and transport poverty. We would suggest this may prove supportive in planning and monitoring targeted interventions to address food insecurity via a place-based approach to target deprivation. Such an area-based approach enables targeting of resources to households in greatest need and can be updated based on new data or different priorities. As such, the risk index can be shown to identify overall risk or can be modified to show risk for specific household types. Furthermore, the food poverty risk index can be mapped at coarser spatial scales such as ward, super output areas or councils.

Ulster University is using Administrative Data and socio-demographic data to expand our At Risk of Food Insecurity Index to investigate spatial relationships with Type 2 Diabetes Mellitus in Northern Ireland. Ulster's first food poverty targeting model has been developed in Northern Ireland at Census small area level and is being expanded to investigate impacts on health (Project RP7 – Socio-Geographical Measurement – 7.1 Food Insecurity refers).

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Additional Reading

We list below, additional and relevant reading in support of the above calls and submission more generally.

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Yours faithfully



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IN THE FIELD

An investigation of the potential existence of “food deserts” in rural and urban areas of Northern Ireland

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Abstract. Food Deserts have recently been identified in the United Kingdom. They have been defined by Tessa Jowell, UK Government Health Minister, as an area “where people do not have easy access to healthy, fresh foods, particularly if they are poor and have limited mobility.” The above definition is particularly relevant in Northern Ireland, where it is estimated that 32% of households do not have easy access to a car and it is recognized that certain groups in Northern Ireland are amongst the poorest consumers in the United Kingdom. The phenomenon has been further exacerbated by the effect of large grocery retailers locating on the periphery of towns and the subsequent displacement effect of independent retailers in the town center. The resultant effect is such that disadvantaged consumers cannot access fresh, quality, nutritious foods at an affordable price. Preliminary research indicates that certain consumer groups are excluded from equitable shopping provision – possibly to the detriment of their health status. Research methodology includes a consumer questionnaire, consumer focus groups, interviews, and comparative shopping exercises that confirm an inability among vulnerable consumer groups to achieve an affordable, healthy diet. This was further complicated by non-car owners’ and lower-income family units needing to shop locally and more frequently than their higher-income, car-owner counterparts. This was demonstrated with the use of shopping diaries. Future research to be conducted includes a large-scale survey across Northern Ireland to ascertain accessibility, availability, and affordability of quality fresh foods and to distinguish the consumer groups who are most vulnerable.

Key words: Accessibility, Affordability, Availability, Food Deserts, Out-of-town

Abbreviations: MAFF – Ministry of Agriculture, Fisheries and Food; NACNE – Nutritional Advisory Committee on Nutritional Education; NI – Northern Ireland

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Introduction

In recent years, much attention has focused on food security and nutrition and associated quality of life. The issue has different contexts dependent upon the country under debate. The food security conundrum in North America is an issue of financial access to food. It does incorporate the notion of physical access to food, but the main criterion is monetary constraint resulting in the “limited or uncertain availability of nutritionally adequate and safe foods in socially acceptable ways” (Hamilton et al., 1997). There is evidence that reports the rising number of people using food banks in North America and the 12% of American households who,

in 1995, experienced food insecurity (Hamilton et al., 1997).

In the European context, the focus is different – becoming one of physical access. This is evident in Portugal and Greece where the corner shop is of strategic importance. Yet all over Europe the power of the multiples (the supermarket chains (Jenner, 1998)) is ever increasing and in France, Germany, Britain, and Ireland (North and South) the corner shop is disappearing, leading to increasing physical effort to access a food store.

For example, in Britain, recent studies have suggested that 42% of English villages and Scottish towns with populations of 4,000 now have no shop

(Sheehy, 1998). The power of the multiples in Britain is such that increasingly the market is made up of fewer and larger competitors, which has meant the closure of the smaller stores that are less able to compete in terms of product availability, range, and price.

This phenomenon has been termed a "food desert"¹ defined by Tessa Jowell, a UK Government Health Minister, as an area "where people do not have easy access to healthy, fresh foods, particularly if they are poor and have limited mobility" (Elliott, 1997). Easy access has been defined as being within 500 meters of households (Social Exclusion Unit, 1998).

The issue has now been identified as a potential problem in Northern Ireland where in recent years the food-retailing provision has been given much local media attention (Strugnell, 1998). Since 1996, NI has witnessed the arrival of the major UK retail multiples (Tesco, Sainsburys, Safeway, and Supervalu) and consequently the "geography of the food retailing industry has changed with the growth of large, peripheral shopping centers" (NIEC, 1990). By this, it is inferred that these UK multiples appear to have a spatial redistribution policy in that they prefer to locate out-of-town. This may have devastating results for the local "corner" or independent retailers who have been the backbone of the British food retailing industry (P. Bell, personal communication, 1999).

Before and since the influx of the UK multiples, there has been a decline in the number of smaller food retailing outlets; for example in 1996 there were 8,000 fewer independents than there were six years earlier (Cull, 1997): that is a loss of one in four. Currently, NI averages around six shops per 1,000 people.

Prior to the 1996 arrival of the UK multiples into the Province, the NI grocery market was dominated by a single "home-grown" multiple, the Stewarts Group, and in this way Northern Ireland's food retailing scene differed substantially from the rest of the UK. The NI food market competitors consisted solely of Stewarts, Crazy Prices, Dunnes Stores, and the symbol group stores (those stores operating under a franchise from one main buying group) who held a larger share of the market than they did in the rest of the UK. The political unrest in this island, on the periphery of Europe, led to an acceleration of the trend that was also happening in other regions of the UK where, for different reasons, people migrated to suburban areas away from the inner-city areas. This trend, and subsequent cease-fires, accommodated the multiples' tendency to locate at off-center sites, thus facilitating their entry into the NI food arena and accelerating the ultimate fragmentation of the market. As a result, the NI food retailing market is now similar to that of the rest of the UK. Currently the main players include

Tesco, Sainsbury, Co-Op, Dunnes Stores, Safeway, Supervalu, and Iceland, along with the smaller symbol group stores and independents. The multiples have a 74% share of the NI market (Isdell, 1997) and food remains the largest, single category of expenditure for the NI consumer, since the NI grocery trade is worth an estimated £900 million per annum (NIEC, 1990).

NI is therefore a relatively unique part of the UK and was the focus of this investigation into the food desertification process. This investigation focused on NI for several reasons. NI is the second most sparsely populated part of the UK after Scotland, with 317 people per square mile (122 per square kilometer) (BBC News On-line, 1998). Similarly, outside the major urban centers of Belfast and Londonderry, Ulster is predominantly rural. This has implications for accessibility to stores because of sparse, diverse populations based in largely rural areas.

Further complications arise, since Ulster claims the highest level of unemployment in the UK, and only 68% of households have easy access to a car; a significant figure, since food shopping is increasingly becoming a car-borne activity (Lang and Caraher, 1998). This would suggest that potentially vulnerable consumer groups in NI may include the elderly, the car-less consumer, and the isolated consumer (in rural regions). Similarly, the lower-income consumer, the unemployed, and/or lone parents may also be at risk from the phenomenon. This supports the work of the UK Social Exclusion Unit that has identified those living in poor neighborhoods as being particularly at risk from the food desert phenomenon and social exclusion in general (Policy Action Team 13, 1999). Social exclusion is about the inability of society to keep all groups and individuals within reach of what is expected by society (Power, 2000), and again, affects the "segment of the population unable to participate in British economic, political, social and cultural life" (Anon., 1997). The Social Exclusion Unit was established in December 1997 to reduce poverty within the country and to similarly reduce social division within neighborhoods. It comprises an array of initiatives to "propose solutions to the acute problems of city and neighborhood decline" (Power, 2000), for example, urban regeneration, neighborhood renewal, improving shopping access, education, housing, and employment.

These findings have led to the initiation of the present research study into the nature and extent of the problem; with the aim being to identify possible locations of food deserts in NI; quantify their characteristics; establish which consumer groups are affected and to what extent; and make recommendations to negate the effects of food deserts. Hypotheses under

study include the fact that an affordable and healthy diet is/is not readily accessible to vulnerable and/or socially excluded consumer groups and the consideration that lower income family units do/do not shop more frequently than those on higher incomes (Furey et al., 2000).

Methodology

A range of research tools was employed throughout the investigation incorporating both qualitative and quantitative methods. Quantitative methods included a consumer questionnaire, comparative shopping exercises, and shopping diaries. Qualitative methods involved consumer focus groups and interviews with retail managers.

The focus groups ($n = 10$) involved 52 participants from established groups that already meet regularly, including Women's Information groups, Women's Institutes, Gingerbread Associations (the lone parent organization), and Access groups (campaigning for the rights of the disabled). The purpose of the focus groups was two-fold. Firstly, they included different consumer cohorts who may be potentially disadvantaged with regard to food access; for example lone parents, the elderly, and special needs consumers. Secondly, they assisted in the identification and development of key issues to be included in the questionnaire. The researcher who introduced general questions and recorded participants' responses and concerns also chaired the focus groups. These same participants were then approached regarding the recording of a food-shopping diary. Twelve participants kept such a diary for a one- or two-week period. They also retained any receipts that were food purchase related for this period of time.

A questionnaire was developed based on the General Consumer Council for Northern Ireland's "Food Retailing in Northern Ireland" survey (1998). The questionnaire was deemed a suitable research tool because it can be delivered to a large survey sample. Following on from the focus groups, the questionnaire also included the food access concerns that had been raised by each consumer cohort. For example, this included the focus of the Access groups on accessibility to the store and the built environment, along with the lone parents' concerns regarding financial constraints and childcare issues. The focus groups' comments informed and assisted in styling the questionnaire by including such concerns. The questionnaire was piloted twice (pilot 1: $n = 10$; pilot 2: $n = 50$) and revised for length, content, and ambiguity before conducting the preliminary study ($n = 100$). The sampling technique was stratified random sampling.

Accordingly, the respondents were divided, prior to the fieldwork, into urban and rural sub-groups and then randomly approached on a home visit basis where the questionnaire was conducted with interviewer assistance.

The comparative shopping exercises ($n = 25$) were carried out in the same areas as the questionnaire (Ballyclare, Bangor, Kircubbin, and Newtownabbey²) to assist in validating the results. The comparative shopping exercise used an established template (MAFF's Low Cost Healthy Diet) as its checklist for food prices and availability (Leather, 1992).

The retailer's perspective was considered through a series of semi-structured management interviews with both the multiple and the smaller independent stores to ascertain the effect, if any, the presence of the retail multiples has had on the retail geography and quality of the NI food industry.

The analysis was conducted using SPSS for Windows Version 9 and QSR NUD*IST Version 3. Statistical tests included Chi Square.

Results

The underlying aim of the study was to test the hypothesis that food is neither accessible, available, nor affordable for certain consumer groups. With this in mind, the first step of the study was to conduct focus groups with different consumer groups, and then to execute a comparative shopping exercise to verify whether a healthy, affordable diet is achievable by the lower-income consumer groups, including lone parents, the elderly, and the unemployed.

Initial points of contact for focus groups included Women's Centers and Institutes, Gingerbread Groups (the lone-parent organization) and Day Centers (targeting the disabled shopper).

Preliminary research concluded that, superficially at least, the consumers were happy with their current shopping provision, with only public transport provision posing a cause for concern. This was especially the case in the context of out-of-town food shopping where public transport was cited as being too expensive and impractical, since it was difficult to manage numerous, heavy shopping bags on the bus (Single mother "I don't mind the walking. It's carrying the bags home again!" and "I would pay somebody £5 (\$8)³ to take me to get my groceries before I would pay to get on a bus and trail my groceries home.") Without exception they tended to conduct top-up shopping (when their store cupboard was depleted of the essential, basic food elements – for example, bread and milk) at the smaller stores whose prices they found more expensive.

For the special needs shopper,⁴ the main concerns were of physical access to the store, customer service especially in terms of assistance to the car or taxi and public transport issues; whilst for the lone parent, issues including money, income, price, public transport, and children's crèches were all noted as important considerations in the context of the lone parent as a potentially vulnerable food poverty group.

When discussing possible solutions for improving access to food, some Women's Institute participants introduced the subject of Home Shopping via the internet. However, only 11% of NI homes have access to the Internet on a home computer as compared to 23% in the rest of the UK (GCCNI, 2000b). Other members in this focus group questioned the feasibility of this initiative and reported that they would miss the opportunity to browse the supermarket aisles. Indeed, perhaps the most interesting input from these focus groups was their mention of the "social interaction that accompanies the shopping experience." This has led to the suggestion that a food desert may be rather more than the absence of a quality food store within 500 meters, but also the absence of the socialization aspect during shopping.

In conjunction with the above focus groups, a comparative shopping exercise was conducted to determine whether a healthy diet was available and affordable, from a variety of stores (including the multiples, the smaller independent stores, and garage forecourts). The MAFF "Low-Cost, Healthy Diet" was used as a template for this purpose (Leather, 1992). The MAFF diet is basically a diet that meets NACNE's guidelines for recommended dietary intakes and does so at a cost of less than £10 (\$16) per person per week.

The objective of the comparative shop was two-fold: primarily it provided costing for the MAFF diet (Leather, 1992) with a comparison of the multiples against the independents, and secondly it served as a checklist for healthy foods across the spectrum of stores.

As can be appreciated from Table 1, the difference in prices between the multiples and the independents varied between negligible to sometimes significant. For example research to date suggests that there is a cost penalty of £1.41 (\$2.35) or 26.3% when shopping at a smaller independent rather than at a supermarket, although it does not account for the other external costs of traveling to the sometimes more distant supermarket. Table 2 illustrates the price differences depending on where the consumer shops. As can be seen, Safeway was highlighted as the least expensive multiple at which to shop and is largely built in off-center sites. The most competitive independent store was Costcutter, which tends to locate in more central sites.

It should also be noted that the independent stores fared badly on food availability, since they did not always stock fresh fruit and vegetables – a significant deficit in the wake of initiatives such as the Green Paper: "Our Healthier Nation" (Department of Health, 1999) and routinely offered only premium branded (manufacturers) products with no economy branded (or retailer branded) equivalent.

Further quantitative research involved the keeping of a Shopping Diary for one or two weeks that involved the participants retaining the receipts from each food shopping trip and posting them to the research group. Twelve women from the Women's Institute and Women's Information and Craft Center recorded shopping diaries. These substantiated the hypothesis that the lower-income consumer shopped more frequently than her higher-income counterpart. The diaries provided evidence that all the female consumers shopped more than once a week at a symbol group store for basic food items such as bread and milk.

The above evidence informed the design of a questionnaire, since no questionnaire concerning food deserts in Northern Ireland existed. Experience gained from a 1998 General Consumer Council for NI study: Food Retailing in Northern Ireland was also used and relevant components were adapted with permission from the GCC questionnaire and incorporated with additional questions that arose from the focus groups. The questionnaire was then piloted to further refine it and remove ambiguity.

Consumer subjects

One hundred respondents completed the questionnaire across four sample populations; 50% were rural respondents from Ballyclare and Kircubbin and 50% came from urban areas within Northern Ireland (Newtownabbey and Bangor). The questionnaire was executed in the same areas as the preliminary work, to allow triangulation of results.

Seventy-seven percent of the sample were female, which is in keeping with other studies that suggest that food shopping is a predominantly female activity (Piachaud and Webb, 1996; Caraher et al., 1998; Vaines, 1999). All age groups were represented in this study, although the majority were aged 65 years and over. The social class status was skewed towards the lower socio-economic classes, because the fieldwork was largely conducted in housing estates, in comparison to the Social Exclusion Unit's work with poorer neighborhoods. Indeed, the majority (51%) fell into the unemployed, casual worker, housewife, or retired sub-groups. Only 12% professed themselves to be in social classes A or B.

Table 1. Comparison of multiple’s food prices against the symbols.

Food item	Cheapest multiple price (pence)	Cheapest symbol price (pence)	Difference (pence)
Cheese	9.0	8.8	0.2
Carcass meat	11.0	17.4	6.4
Other meat products	26.0	35.0	9.0
Fish	14.0	27.1	13.1
Eggs	3.0	3.8	0.8
Whole milk	55.0	57.0	2.0
Skimmed milk	35.0	35.0	0.0
Margarine	13.0	17.0	4.0
Other fats/oils	6.0	9.8	3.8
Sugar	13.0	12.0	-1.0
Preserves	3.0	4.9	1.9
Potatoes	38.8	44.0	5.2
Fresh green vegetables	21.0	24.0	3.0
Other fresh vegetables	15.0	20.4	5.4
Canned beans	7.4	17.8	10.4
Frozen vegetables	21.0	37.0	16.0
Other processed vegetables	14.0	18.2	4.2
Fresh fruit	64.0	70.0	6.0
Fruit juice	7.0	11.4	4.4
Other fruit products (tinned)	5.0	17.3	12.3
Biscuits	5.0	10.0	5.0
Breakfast cereals	25.0	37.3	12.3
Wholemeal bread	23.0	20.6	-2.4
Other bread (white loaf)	55.0	50.8	-4.2
Other cereal products (pasta)	19.0	44.7	25.7
Beverages (teas/coffee/cocoa)	27.0	26.4	-0.6
Total difference:	£5.36 (\$8.95)	£6.77 (\$11.31)	£1.41 (\$2.35)

The majority of respondents shopped primarily at the multiples with the preferred store being Tesco (45% of respondents stated they shopped there). When asked to pinpoint the location of the store at which they did their main shopping, 22% stated that they shopped out-of-town, 8% shopped at edge-of-town stores, while 48% shopped in the town center, and 22% shopped closer to home in neighborhood stores and local shopping parades. Therefore, it can be stated that a significant proportion (70%) of households within this study sample shopped in the town center or closer to home. This would raise ethical questions over the spatial relocation of grocery stores to out-of-town sites by town planners.

This sample also supported the hypothesis that food shopping is increasingly becoming a car-borne activity, with 58% of the sample using the family car, or that of a friend or neighbor, to visit the grocery

store. The mode of transport by which the grocery store was reached would further support the store location rationale, since 30% of the sample walked to the, presumably proximate, store in the town center or closer. This would seem to be the case, since 64% of the respondents stated that they shopped less than fifteen minutes from home. Journey distance was significantly influenced by degree of satisfaction with locality: $C_9^2 = 26.3$ $P < 0.01$. Indeed, accessibility to the store was a key consideration for many of the respondents in this study. As can be appreciated from Table 3, there were different factors impinging on food store accessibility.

Similarly, there were significant differences in satisfaction with locality between subjects reporting different levels of satisfaction for product choice: $C_6^2 = 20.1$ $P < 0.01$. Interestingly, the decision as to whether or not people continued to shop in the town

Table 2. A store comparison of shopping basket contents of the MAFF diet.

Store	Cost of MAFF diet (per person per week)
Safeway	£6.20 (\$10.35)
Sainsburys	£6.36 (\$10.62)
Co-Op	£6.37 (\$10.64)
Tesco	£6.48 (\$10.82)
Esso	£7.39 (\$12.34) ^a
Iceland	£7.59 (\$12.68)
Costcutter	£8.11 (\$13.54)
Spar	£8.21 * (\$13.71)
Marks & Spencer	£8.89 (\$14.85) ^a
Mace	£8.97 (\$14.98)
VG	£9.81 (\$16.38)

^aOne or more listed products were not available at this store.

Table 3. Accessibility of food.

Accessibility question	Chi square result
Rural consumer	$C_4^2 = 9.7^a$
Locality of store	$C_{12}^2 = 22.0^a$
Journey distance	$C_9^2 = 26.3^b$

^aDenotes a result that is statistically significant at the 95% confidence interval.

^bDenotes a result that is statistically significant at the 99% confidence interval.

center enjoyed a significant relationship with differing satisfaction levels with locality: $C_{12}^2 = 21.9 P < 0.05$ with a bias towards those who were still shopping in the town center being very satisfied whereas other consumers were merely satisfied with store locality. Again, perceived adequacy of shopping provision influenced satisfaction with locality: $C_{12}^2 = 22.0 P < 0.05$.

Almost half (44%) bought their fresh fruit and vegetables from a multiple store, with 37% buying fresh produce from their local greengrocer. Conversely, 58% purchased their meat from a butcher and 34% from a multiple. For all other grocery purchases, the multiple retailer was the first choice store although there was still an identified need for the local symbol stores and independents, since 31% bought their wrapped bread, 32% bought their milk, and 26% bought other groceries there. On the question of availability of fresh food, it would seem that availability influenced satisfaction with product choice: $C_6^2 = 14.0 P < 0.05$.

Interestingly, the location of the respondents' main food store seemed to influence satisfaction with price

($C_{10}^2 = 18.9 P < 0.05$). For example, those who shopped out-of-town were more likely to be satisfied with the price of products, followed by those who shopped in the town center and, to a lesser extent, those who shopped locally (i.e.) there was diminishing satisfaction with increasing distance. Similarly, satisfaction with price was also influenced by satisfaction with product choice ($C_4^2 = 9.8 P < 0.05$) and food quality ($C_4^2 = 11.7 P < 0.05$).

The next section of the questionnaire queried respondents' attitudes towards the attributes of the store at which they did their main grocery shopping. Twelve percent registered dissatisfaction regarding the locality of their store, 23% were dissatisfied with prices, and 10% were dissatisfied with parking facilities. Otherwise, the stores rated favorably on issues of product choice and quality, and customer service.

The respondents were then asked whether food insecurity, in terms of availability and sufficiency of money for food, was a reality. Of the sample, 26% responded that not having enough money for food was often or sometimes true, and 14% went on to suggest that this manifested itself in their inability to eat balanced meals. The gravity of this inability was reduced somewhat in that 95% of the sample never had to skip meals because of a lack of finance, but worryingly 2% responded that they had lost weight because of insufficiency of funds for food. In 11% of households under study, there was real anxiety that their food supply might run out before they had the means to buy more.

In an attempt to discover a link between the above findings and the phenomenon under investigation (i.e.) the identification of food deserts in rural and urban areas of NI, the question, "I feel socially excluded because there are insufficient food shops locally" was posed. Social Exclusion is a focus for the "New Labour" UK Government and there has been a lot of rhetoric on health inequalities and widening disparity between the "Haves" and the "Have-Nots" in the United Kingdom. A significant 22% of the population under study reported in the affirmative: that they often, or sometimes, felt this to be the case. Similarly, 15% of respondents reported that they had little opportunity to buy sufficient fresh food locally, which raises a further ethical question regarding the availability of fresh produce at the right price and the equality of shopping provision for all.

Since these changes to the food retail market have occurred largely since the arrival of the UK multiples into NI, it seemed appropriate to ask if NI had benefited from their influx. The response was largely favorable, although 30% of NI respondents in this survey were unsure as to the effect of the UK multiples

on the NI retail market. However, one factor was certain – an overwhelming majority (82%) perceived that food is cheaper in the supermarket than in the smaller corner store, and whether there is a perceived or real difference in pricing policy, it would seem that the independent store patron is losing out.

Another reality is that consumers are realizing that the corner shop is disappearing from the retail spectrum (appreciated by 82% of the sample); this is of real concern to those who depend on the smaller independents and symbol stores because, for whatever reason, they cannot access a larger supermarket. When one compares the product range of a corner shop to that of a supermarket (55% and 92% levels of satisfaction with product range respectively) the question of equality of provision can again be raised with particular reference to the disadvantaged consumer.

Similarly, 58% of the sample agreed that they liked to buy their groceries from shops in the town center as compared with 37% saying the same about out-of-town food stores. Sixty-six percent agreed that the town center was more convenient than off-center complexes, and a conclusive 98% reported that every town center should have a food store.

This issue of out-of-town supermarkets was posed in an open question and the opinions were diverse, ranging from the positive, "I prefer it, there are more parking facilities," to the indifferent "I never bother with them," to the negative, "I would rather have good local shops. They [out-of-town supermarkets] only suit people with cars," and, "They hurt the small shopkeeper."

This work led to interviews with retail managers focusing on the locational policy of stores and supermarkets. Managers of both independent stores and supermarkets were approached including Tesco, Sainsburys, Spar, and Costcutters.

The locational policy of the larger supermarkets is "discriminatory by nature but we have a social responsibility," according to Tesco, NI, with the suggestion that councils and retailers should work together to rejuvenate the town center (J. Leaman, Marketing Manager for Tesco, personal communication, 1998).

Similarly, Sainsbury's location policy is as follows: "If we can foresee a trading opportunity in a trading locality . . . or where there is a business opportunity that has a proven statistical opportunity for us then it will go to the Market Research Department" (B. Lucas, Retail Manager for Sainsburys, personal communication, 1999).

Tesco are very interested in the future of Home Shopping as the new market. They project 40 to 50 years into the future with the foresight that the fate of the supermarket may be as a warehouse to serve as a delivery function as generated by the uptake

of Home Shopping Initiatives (J. Leaman, personal communication, 1998).

Certainly, Leaman takes exception to the idea of the food desert but says that if they do exist it should also be considered that "an area identified as a food desert may also be considered as a social desert," since a supermarket offers a social function as well as a business opportunity (J. Leaman, personal communication, 1998).

The smaller retailers were quick to defend their business position and argued that their sales have survived the influx, although a Costcutter manager stated that the arrival of the UK multiples had affected the High Street. He neatly defined a food desert as "an area where high competition from the multiples has created a void." Succinctly, he claimed that "independent retailers are an example of success in NI, and the Department of the Environment should get behind the smaller towns . . . the council needs to rejuvenate the town centers with super car parks and take the business back into the middle of the town" (P. Bell, Retail Manager for Costcutter, personal communication, 1999). Other retailers were more resigned to the situation and believed that it was now too late to set about reviving the town centers, suggesting that the move on the part of the planners to curtail out-of-town developments to try to revive the town center should have happened a long time ago (B. Lockhart, Retail Manager for Spar, personal communication, 1999).

Discussion

There is a lot of literature in the UK surrounding the food desert debate (Lang and Caraher, 1998; Dowler and Raats, 2000; Leather, 1997; Webster and Johnson, 2000; Kempson, 1996). The New Labour UK Government has been particularly vocal and has set up various Working Groups to research the issue. The Low-Income Project Team first introduced the term "food desert" in 1995 and since then has conducted lengthy research into the mapping of such disadvantaged areas. Lang has published extensively on the concept and suggested that everyone should have access to healthy, fresh foods available within 500 meters of each household (Lang, 1997).

Similarly, the Social Exclusion Units' Policy Action Team 13 has researched into "Improving Shopping Access for People living in Deprived Neighborhoods." They have highlighted the lack of easy access to shops and high prices often faced by those in "poor neighborhoods" to the extent that some areas have become food deserts, exacerbating the problems those on low incomes face in affording a healthy diet.

The phenomenon of the food desert introduces a compendium of social theory, rights, and ethics.

Primarily, there is the *right* of the individual to a decent food supply. The Universal Declaration of Human Rights states that everyone has a fundamental right to be free from hunger and have access to safe, nutritious food. Then there is the ethical question of food *availability* and its relevance to the social exclusion debate where everyone should be able to participate in economic, political, social, and cultural life, of which food culture and food choice is part.

Twenty-two percent of the study sample reported that they often or sometimes felt socially excluded because there were insufficient food stores locally within an acceptable distance. This inequity and associated quality of life deficit has important implications for the social aspect of shopping and lends credibility to the theory that a "food desert" may similarly be a "social desert" (J. Leaman, personal communication, 1998). However, this study is primarily involved with the *accessibility* of food.

Much has been written to suggest that a healthy diet is more difficult, and expensive, to achieve than a less healthy one and other researchers suggest that it is more difficult to access healthy, fresh food in the rural conurbations of towns (Piachaud and Webb, 1996; Cummins and Macintyre, 1999). In this preliminary work it was shown empirically that a healthy diet is available at a cost of less than £10 (\$16) per person per week although product availability was limited in smaller food stores.

The effects of food choice, health and retail behavior has been studied in other European countries and these studies have covered rural locations (Cécora, 1993 cited in Strugnell, 1998). However, previous research into food poverty in Northern Ireland is minimal and compares unfavorably with Scotland, which has thoroughly evaluated the feasibility of community cafes and have other anti-hunger initiatives in place.

This research focusing on Northern Ireland is timely in light of the influx of the major UK multiples and the curtailment of off-center developments. The investigation supports previous research into food poverty in the UK, although there is no Northern Ireland benchmark against which to measure whether or not the situation is worsening.

One of the objectives of this research is that such a benchmark be devised with the development of a food desertification model. It has been identified throughout the literature that there is a need to develop a continuum for food security. Similarly, Williams and Dowler have devised a framework of the determinants of food and nutrition security in the UK (Williams and Dowler, 1994) and a Canadian model exists for adequate access to affordable, nutritious food (Field, 1999).

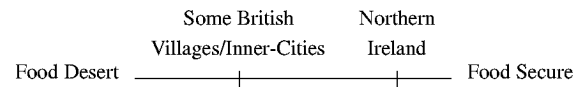


Figure 1. Food desertification continuum.

However, it is the UK model that is relevant to this study and it implicates macro-level policies, access, information, availability, choice, food preparation practices, eating and meal patterns, and intra-household distribution in its framework of UK food security.

Ultimately, it should be possible to plot each region under study on a continuum and view each point as relative to another. Such a continuum may then be used as a predictor to ascertain food desertification status of different areas. This in turn can inform food and social policy, since areas identified as food deserts may then receive government support and acknowledgment of the need for cash injection and access to basic services; for example, pharmacies, banks, and food stores. A recent British study (Sheehy, 1998) estimates that 42% of English villages and Scottish towns with populations of 4,000 (for example, West Everton – an inner-city area identified as a food desert – and Longley – one of 1,000 estates in England identified as food deserts) now have no shop. There are some research articles that suggest that inner-city areas with populations of 6,000 are without adequate food shopping provision (*The Times*, 1997). Inner-cities are typically areas with concentrated pockets of lower-income consumers who have no car, live below the poverty line, cannot access a large supermarket, and only have the means to shop locally in small corner shops with high prices and little fresh produce. Shopping diaries support this finding with a dichotomy existing where the lower-income consumer shops more frequently and locally than does her higher-income counterpart. It is these same consumers who patronize the smaller, often more expensive corner shop. At the extreme end of the continuum are the higher income neighborhoods where households have two or more cars and individuals have the disposable income with which to buy the more expensive fresh and healthy alternatives.

It is likely that Northern Ireland presently lies somewhere in the middle of this continuum. Certainly NI is experiencing a retail revolution with the arrival of the UK multiples and the full effects of their influx may not yet have fully impacted on the rural economy or indeed town planning decisions. So, while it is not yet the case that urban areas of the Province are without food stores, a deficit in town center food stores is appreciable. Northern Ireland also has low car ownership levels compared with those of mainland UK and

a higher level of unemployment and this is reflected in the average household income here. All of the aforementioned play an integral part in the plotting of NI as a point towards the center of the continuum – perhaps erring to the side of food desert for the reasons outlined above.

The continuum is tentative at this stage of the research and future work will concentrate on the development of a statistical model to lend weight to the above tool and to predict in which direction NI will move on this continuum.

The food desert issue in Britain is one of access. Fundamental to the accessibility argument on an individual level are class, income, and gender issues (Lang and Caraher, 1998). "Access to food is primarily determined by income, and this is in turn closely related to physical resources available to access healthy foods. The poor have less access to a car, find it harder to get to out-of-town shopping centers and thus are less able to carry and transport food in bulk" (Caraher et al., 1998). Food availability has been further investigated by Piachaud and Webb (1996) who reported that "healthy food tends to be less available in deprived areas" with the dichotomy existing whereby those who shop at supermarkets can "generally benefit from lower prices and more choice. However the benefits of supermarkets are not available to all."

Research in this study suggests that consumers are resigned to having to travel to edge-of-town locations to conduct their weekly grocery shop. There was little evidence that they considered their current store to be too far away, although they did register some disappointment that a larger supermarket was not present in some rural districts. Physical access to the store was further complicated by car-lessness (or lack of easy access to a car, for example, in one car households where the person responsible for provisioning the household does not have easy access to the car or cannot drive) in 42% of the sample. Similarly, some urban areas reported a perceived disadvantage in that the area did not have a major multiple where consumers perceived the better prices to be.

Physical access to food is important in the British phenomenon of the food desert with more than 90% of people citing supermarkets as their main source of food shopping (Caraher et al., 1999). Access to transport is "a major influence on shopping behavior" with hidden polarization, since disadvantaged consumers are "likely to be over-represented in the 10% not using supermarkets" (Caraher et al., 1999). Three-quarters of people use a car for shopping and this number rises with the growth of out-of-town developments. These statistics amplify the relevance of private transport . . . in determining . . . access to food (Lang and Caraher, 1999). This leads to a discussion on public

transport provision in Northern Ireland, since 32% of NI consumers are car-less and food shopping is increasingly becoming an activity necessitating transport. Women are doubly disadvantaged in this context because "men have greater access to cars than women" (Piachaud and Webb, 1996), yet it is the female householders who are responsible for food shopping, are more reliant on public transport than men, and are more likely to have accompanying children whilst using public transport.

While adequacy of food shopping provision per se did not generate much discord, there was a concerted public discontent towards the adequacy of public transport provision Province-wide, with the overall contention that it required major investment and improvement.

Food accessibility, availability, and choice are inextricably linked. Professor Lang argues that the term "food selection" is more appropriate than "food choice," since the lower income consumer can only choose from what is available to him in the store that is accessible to him (T. Lang, personal communication, 1999). Either way, in areas earmarked as food deserts it is likely that only a few corner shops remain where little fresh food is available and the store most likely sells a limited and over-priced range of processed foods (Elliott, 1997). This has serious implications regarding health policy, especially in light of the Government Green Paper, "Health of the Nation" campaigning for healthier food choices.

Conclusions

It can be concluded that Northern Ireland's retailing scene seems to be moving in the same direction as that of the rest of the UK with the changing geography and emphasis on off-center shopping, where the consumer without a car is disadvantaged. The research also supports the notion that, while the car owning consumer is happy to travel to off-center supermarkets, there is still a requirement for town center stores, since 70% of the sample shopped in the town center or closer to home. It can also be reported that different factors impact significantly on food accessibility, including the consumers' address, the locality of the store, and distance traveled to the store.

Eleven per cent of Northern Ireland consumers self-reported a real concern regarding food poverty issues, suggesting simultaneous financial constraints on food choice as well as the market-inflicted physical access difficulties that coincide with reduced choice of outlet. Indeed, 82% of the sample noticed how there seemed to be fewer smaller food stores than previously, while two-thirds of the sample argued that

the town center food store was more convenient than edge-of-town.

The study tentatively constructed a food desertification continuum that places NI towards the food desert anchor. However, upon completion of the large-scale survey the aim is to devise a statistical model that may have a valid worth in food policy, to assist in the identification of areas under threat of acquiring food desert status and/or negating their effects.

Food desertification has been likened to “the food equivalent of disconnecting the water supply” (Lang, 1997), and initiatives should be considered to alleviate food poverty and rejuvenate town centers throughout the Province. An inter-disciplinary approach is necessary to combat and negate the effects of food deserts involving Local Authorities, retailers, Government policies, Health Promotion personnel, education bodies, and community programs to bring about a policy to eradicate this form of social exclusion and disadvantage. Particular effort should be afforded to the substantiation of public transport in the Province, which is reported to be almost at “crisis point,” with the lowest ever ratings for service being reported in the 1999 public transport survey, with consumers being disenchanted with service provision and punctuality (GCCNI, 2000a).

Basically, food policy should address the fundamental issues of improving access to food; maintaining town center food stores and providing support to voluntary food projects or co-operatives.

Certainly, further research is warranted in light of the associated implications for food and health policy generally. Indeed a large-scale consumer survey ($n = 1000$) involving consumers from four different areas across the Province is currently underway to quantify the degree of disadvantage incurred by the phenomenon of the Northern Ireland food desert.

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Notes

1. “Food Deserts ... are those areas of inner-cities where cheap, nutritious food is virtually unobtainable. Car-less residents, unable to reach out-of-town supermarkets, depend on the corner shop where prices are high, products are processed, and fresh fruit and vegetables poor, or non-existent” (Laurence, 1997).

2. Bangor and Newtownabbey are urban conurbations and Ballyclare and Kircubbin are rural conurbations of larger catchment areas in counties Antrim and Down.
3. For the purpose of this study an exchange rate of \$1.67 to £1 stg. was taken.
4. Special Needs is defined as those individuals who are in some way disadvantaged or who require assistance when shopping, for example, disabled people or parents with children.

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