

# [The uk contributed to increased waste production environmental sciences essay](https://assignbuster.com/the-uk-contributed-to-increased-waste-production-environmental-sciences-essay/)

It’s fair to say that in 2013 the UK as a whole takes a lot for granted, compared to other countries, it is only in recent years that we have really started to see the impact that our habits are having on the planet. Over the years we have abused the resources that are on our doorstep. We seem to have become so accustomed to them being available to us we now take a lot for granted. Yet this is not how we should be thinking, with resources such as energy, water, land and even food predicted to run out in the near future, it is time we started to realise how important it is for us to change our lifestyles to allow future generations to also share in the luxury we greedily take without thinking. To do this we need to look at what has been done to tackle problems such as energy waste, food waste and household waste in previous years We also need to look at what systems have we previously used and what systems do we need to make better use of today? We also need to look into the reasons behind much of the food waste that occurs, whether this is due to production processes, transportation or markets selling techniques and strategies. We need to understand where our food comes from and the journey it takes to reach the UK, and us, the consumers. There are two main areas of urbanism that I have decided to look into further in order to address the question of, what has contributed to the increased waste production? These areas are local food and short supply chains AND zero waste cities. These areas are key to answering the questions outlined above will allow me to narrow down the areas which have contributed to the rise in waste. The case study I have chosen to do is based around the markets that have been a vital part of Bury St Edmunds in Suffolk over the past 20 years; also what the current places for shopping are, these would include shops like: butchers, grocers, fruit and vegetable markets, animal markets and local farms; I have carried out a small questionnaire for a few local residents of Bury St Edmunds to answer. From this we can address the cause of the markets decline and why it is important that they do not disappear for good. I have also looked into the produce market stalls that fill the Nottingham Victoria Centre Market, with an aim to find out the source of their produce to determine why our produce comes from abroad and to create a map showing how far the produce would have travelled. Through comparing the local rubbish waste schemes in Suffolk and Nottinghamshire we can get an idea of how we are currently dealing with the issues and what aims we have for the future in aiding to reduce our carbon footprint on the planet.

## Chapter one: Food systems

We can break down urbanism into fifteen areas and these can each be broken down again and again, allowing us to address all the issues that they raise. Urban design is a framework used by many for designing places for the everyday needs of people. It looks at how we can transform existing neighbourhoods and communities by looking at factors such as community safety and the connections made between people, places and nature. It also takes into account the design of future urban development’s helping to minimise the use of energy, water and resources during each stage of extraction, transportation, fabrication, assembly and recyclability during a buildings or cities lifecycle. According to Steffen Lehmann’ there are fifteen key principals to define green urban design and " it requires the collaboration of landscape architects, engineers, urban planners, ecologists, transport planners, physicists, psychologists, sociologists, economists and other specialists, in addition to architects and urban designers" (Steffen Lehmann, 2010, p245) no single principal is enough to work but the collaboration of many principals together can produce settlements that work for the people, the city’s infrastructure and the environment’ (2010, The principals of Green Urbanism, transforming the city for sustainability, Earthscan, London). The fifteen principals cover: Climate and context, Renewable energy for zero CO2 emissions, Zero waste cities, Water, Landscapes and Biodiversity, Sustainable transport, Local and sustainable materials, Density and retrofitting of existing districts, Green buildings, Healthy communities, local food and short supply chains, cultural heritage, Improved governance/leadership and practice, Education/research and knowledge and finally strategies for developing countries. It is thought that the global population will rise to around 9. 5 billion people by 2075, we are currently producing around four billion tonnes of food a year, but practices such as harvesting, storage and transportation are often poor, as well as the added market and consumer wasting produce, with 1. 2 - 2 billion tonnes of all food produced being lost before it reaches the human stomach. Current practices are currently wasting around 50% of food produced, and engineers need to start acting on promoting sustainable methods to reduce the waste between farm and supermarket and then onto the consumer. In less developed countries such as those in Africa and the South East Asia, the wastage tends to occur closer to the farming/producing stage of the supply chain with inadequate harvesting, transportation and poor infrastructure, it means that much of the produce is handled unsuitably and stored in unfitting conditionsWhilst urban design and planning in the UK is well developed, encouraging our towns and cities to maximise their strengths with effective transport and rail links across the UK and abroad, It also has its downfalls. If we look at food systems in the UK, they can often become more focused on supply in demand, generating vast amounts of produce in a short time to account for a growing need in demand, when sadly not all of the food produced is required. Charles Godfrey, from the University of Oxford states that" 30% of all food produced is never consumed" (Damian Carrington and John Vidal, BBC Online, 2012)In terms of emissions produced through the production and distribution of edible food that goes to waste, accounts for 5% of the total UK greenhouse gas emissions, with around seven billion tonnes of food ending up in landfill sites across the UK. Globally food production and distribution is responsible for 30% of global greenhouse emissions. With many of our planets resources running out this figure needs to be reduced, or at least made beneficial for those in poverty stricken regions of the UK and the developing countries outside of the UK. In the UK we have a large appetite for food with little consideration for where it originates and the processes it undertakes to arrive on our plates. We import a large percentage of produce from abroad instead of buying from locally producing sellers; in the UK much of our fruit and vegetables can be classed as seasonal produce, due to our specific climate and is unavailable all year round. Whilst we produce food all year round, much of our food has a ‘ Best’ time of the year to be produced and is at a constant demand, so we look elsewhere when it is not currently in season and can be better produced in countries with a different climate. There is nothing stopping us from producing any products all year round in green houses and supplying our supermarkets with more locally manufactured produce even if it is out of season, but it’s not ideal and we choose not to. We would rather have the choice of the often cheaper seasonal foods from abroad, which ironically would have cost more to produce, not only in financial terms, but in our planets resources and greenhouse emissions. Much of the food we buy has travelled thousands of miles and has been treated to keep it as ‘ fresh’ as you would like to believe it is, when realistically it would have been picked or processed weeks prior to its display on our supermarket shelves. Food accounts for 25% of the distance travelled each year by Lorries in the UK and twelve billion miles driven a year by consumers. The social and environmental costs of food transport, including Greenhouse gas emissions, are nine billion pounds a year (Food Ethics council Website). I carried out a short survey on a few market stalls in the Victoria Shopping Centre Food Market in Nottingham. These were Appleby’s, a market stall that has been trading in Nottingham for over 40 years, and J Kerry and Sons which has been trading in Nottingham for over 110 years. They both sell a similar range of products, from fruit and vegetables; some of which being Bananas, Grapes, Carrots, Parsnips, Potatoes, Cucumber, and Lettuce etc. to seeds and nuts and also dairy products such as cheese and eggs. I asked both stall holders said that they brought their produce from local wholesale and garden markets in the Nottingham area, they both also only had stalls in town. Much of their produce comes from the same destinations from across the world to each other. I asked both stalls if they actively tried to reduce the food miles footprint that their produce carries by keeping its origin within the UK – Applebys said that they try to buy produce only from the UK if it is possible. If it is out of season then they have to look abroad, but it generally works out more expensive for them as they do not make much profit on the sales they make after the pre-sale buying costs- as opposed to buying produce that was grown in the UK. J Kerry and Sons stall also agreed with what Applebys said, again saying that they try to buy local produce but it is not always possible when their customers are looking for produce that might be out of season to the UK. If neither stall was to buy produce from abroad to widen their selling range, they would miss out on the fresh markets sales and customers would look elsewhere, to other sellers and local supermarket chains for their weekly produce. The figure below shows a small selection of countries the Nottingham markets stalls get their fruit and Vegetable imports from. Below I have highlighted the approximate distance the produce has covered in travelling to the UK, from the shortest distance travelled to the furthest. London to Paris (France) 213. 71 miles covered in transport. London to Madrid (Spain) 783. 22 miles covered in transport. London to Rome (Italy) 890. 86 miles covered in transport. London to Marrakesh (Morocco) 1431. 79 miles covered in transport. London to Cairo (Egypt) 2184. 26 miles covered in transport. London to Yaoundé (Cameroon) 3363. 36 miles covered in transport. London to New York (South America) 3464. 99 miles covered in transport. London to Canada (North America) 3903. 16 miles covered in transport. London to Nairobi (Kenya) 4242. 82 miles covered in transport. London to Bogota (Columbia) 5288. 11 miles covered in transport. London to Lima (Peru) 6327. 48 miles covered in transport. London to Buenos Aires (Argentina) 6922. 24 miles covered in transport.(Distance from Website, 2013)In the UK shops throw away an estimated 1. 6 million tonnes of leftover food each year, but many more are starting to rethink their wasteful habits by distributing it to those in need. Companies such as Pret-a-Manger, a food company known for selling delicious sandwiches to its customers, much of the food they have left over after a busy day is given to the homeless; all of which was previously on sale to the customers just a few hours beforehand. Every week staff from Pret can be seen wandering around the streets of central London handing out surplus food to those in need. A total of around 1. 7 million products from the Pret stores are given to the homeless in some form or another (Beth Cherryman, 2010, BBC Online). Jonathan Gabay, of Brand Forensics says:" Because we are living in an austere society now, I can see why brands want to say to their customers ‘ We are not wasting anything, were giving these sandwiches to the people that need it" (Jonathan Gabay, Late night sandwich run, 2010, Pg. 2). It’s not just Pret who are taking a stand, Tesco say they have implemented a very efficient ordering system to reduce the waste, and any waste that is generated can be Re-used, Recycled or even turned into energy. Waitrose have also said that one hundred and fifteen of their branches generate renewable energy from the food waste. Both Tesco and Waitrose work with Fareshare, a charity who distribute leftovers that are still fit to eat for those in need. According to a report released in 2013 by the UK based Institute of Mechanical Engineering – Global Food; Waste not Want Not – As much as half of the world’s food production went to waste, this is roughly two billion tonnes of wasted food. It claims that around 30% of vegetables in the UK were not harvested – this is solely down to their physical appearance. A lot of the food going to waste could be used to feed those in hunger or help to alleviate the food stresses caused by a growing population. Most of the wasted food occurs because of a range of situations such as poor engineering and agricultural practices, inadequate transport and storage infrastructure through to the supermarkets demanding that the cosmetic appearance of food is of a high standard and over encourage their customers to buy more through Buy-One-Get-One-Free offers throughout their stores. Tristram Stuart from food waste campaign group - Feeding the Five Thousand, mentions that farmers assume that 20%-40% of their produce will not get to market, even if it is fit for human consumption (BBC Online, 2013, Anon).

## Chapter 2: Waste Management

Much of the waste we recycle goes to the recycling centers, but it also goes to other specialised plants where it is then refined and treated in different ways. Such plants as the EfW (Energy from Waste), which is generally considered a bad form of dealing and treating the waste purely because it is not encouraged by the government in the UK. It is used a lot in other European countries that have a much lower percentage of waste being produced and ultimately then needing to be dealt with (Energy from Waste Report, 2013). Countries such as Denmark, are currently seen to be the country leading the way in waste management. Currently we have two main methods for treating waste, These are to bury it in landfill sites or to burn in it incinerators, then bury the remainder of the product. Recycling seems to be a key alternative to reduce the use of these two methods. But is recycling the best solution to the problem? Often more greenhouse gasses are produced and more energy is consumed during the recycling process, then is actually used to manufacture a new product from the raw materials all together. EfW (Energy from Waste) plants are a better alternative to recycling plants. They work by taking the waste and converting the potential energy into other types of usable energy, and the main forms produced are heating, electricity and transport fuels. EfW can be used to treat different types of waste: Waste from domestic, commercial, industrial, construction and demolition to sewage and agricultural waste – as long as the waste used is either combustible or bio-degradable. These plants are not the same as incinerators - which are purpose built to reduce waste through burning it, to achieve an end product called Ash; this ash and anything else that is not burnt is then disposed of in landfill sites. EfW plants are built to provide usable energy and can be designed to give little or no output to landfill. There are four main technology processes used in the EfW plants, three of these processes are thermal, (Combustion, Gasification and Pyrolysis) and the fourth process is biological (Anaerobic Digestion). Combustion is the most commonly used technology both in the UK and in European countries. Yet EfW plants are more often found in other European countries, than they appear in the UK – this is because there is great public distrust in them as they are often referred to as ‘ incinerators’, which they are not. Figure (IMechE, 2013, p4). How can we help set an example for future generations? Firstly the government has to recognise their role in setting standards that we, the UK, should be aiming to achieve as a whole, and as a nation. The Landfill Directive states that they currently they are:

## " By 2010, the waste sent to landfills should be 75% of that sent in 1995

## By 2013, the waste sent to landfills should be 50% of that sent in 1995

## By 2015, the waste sent to landfills should be 35% of that sent in 1995’

## In order to achieve this directive, ‘ Waste Strategy 2000’ introduced the following targets for waste recovery:

## ‘ Recover 40% of waste by 2005

## Recover 45% of waste by 2010

## Recover 67% of waste by 2015’

## The government has also published national recycling targets in ‘ Waste Strategy 2000’:

## ‘ 25% of household waste should be recycled or composted by 2005

## 30% of household waste should be recycled or composted by 2010

## 33% of household waste should be recycled or composted by 2015

The recycling targets for individual local authorities is 30% by 2005/2006" (Recycling Guide Website, 2003-2013). As well as these targets, the government also need to review their current energy strategy to make EfW a key component in energy production; this will help to avoid sending more waste to landfill sites. This can also be promoted by encouraging districts to invest in community heating projects by using waste as the fuel resource for this, redefining waste as an energy resource not just as a means to be disposed of. Consequently this also helps to improve the situations of those in energy poverty in the UK. There should be a limited focus on recycling as the only way to rid us of landfills and instead be used for waste products that cannot be more sustainably converted into electricity, heating and for transport fuels; as this is an unachievable goal and is clearly deceiving the public of what is really happening to their waste. Other ways we can help to eliminate the amount of waste going to landfill is by encouraging the use of websites such as Ebay, Freecycle, Gumtree, Craigs List etc. which predominantly aim to reuse products either for free, in the case of freecycle or for a small fee to the seller and/or buyer on Ebay; encouraging household to donate items to charitable organisations such as charity shops and shelters. Supermarkets should make portion sizes of food more readily available, to help minimise the wastage from the weekly shop, with many households buying more then they need, due to larger multipacks being on offer and more cost effective to them then the single packs which can often work out more expensive. In the UK not every council manages its waste in the same way, household and business waste collections schemes can vary from one county to the next, with what can and cannot be sorted in the local areas differing throughout. Many borough councils run their services differently, with bins of different colours for their varying purposes. If we were to compare the collections in Suffolk and Nottinghamshire you will straight away notice the difference in the colour of the bins to designate their purpose and what can and cannot be collected. Households in the borough of St Edmundsbury in Suffolk, have their bins collected every fortnight, with the blue bins for recycling and brown bins for compostable waste collected one week and the black bins for rubbish that cannot be recycled, collected the following week. In addition to this they can also arrange to collect bulky items such as fridges and furniture or hazardous waste such as paint. Currently clothes can be collected as part of the blue recycling collection as long as they are in the bags provided for collection by the council. They collect commercial waste from businesses and make sure the streets are kept free of litter and graffiti (St Edmundsbury Council Website, 2013). In Nottinghamshire most homes have a green bin for their household rubbish this is for anything that cannot be recycled or composted. Some households also have a grey lidded brown bin, for the collection of plastic, paper, tin and cardboard as well as a brown bin for collecting garden waste. Bins are generally collected once a week or once every two weeks, if the household has both a recycling and household waste bin they will be collected on an alternate weekly basis, the garden waste bin will also be collected on the same day as the recycling collection (Nottingham Council Website, 2013). I have created a table to show what generally can and cannot be collected from each of the two councils waste collection scheme: FigureSuffolkWhat can be collectedNottinghamshireWhat can be collectedBlack BinHousehold waste (that cannot be put in your recycling collection). Nappiespet wasteCooked foodplastic bagsPolystyreneHard plasticsGreen BinHousehold waste (that cannot be put in your recycling collection). Nappiespet wasteCooked foodplastic bagsPolystyreneHard plasticsBlue BinCataloguesBrochuresPaperFood CansDrink cansPlastic bottlesNewspapersMagazinesCardboardLarge tinsPlastic tubsPlastic pots and traysTelephone booksClothes can now be collected in blue bins as long as they are in the bags provided by the council and in the blue bin on top of the other recycling waste. Glass Jars and Bottles are not yet recycled in the blue bin; they will need to be taken to the local recycling centre. Brown-grey lidded BinCataloguesBrochuresPaperFood cansDrink cansPlastic bottlesNewspapersMagazinesCardboardLarge tinsPlastic tubsPlastic pots and traysTelephone booksGlass bottleglass JarsAerosolsBrown BinShredded paperGrass cuttingsHedge clippingsTwigs & small branchesLeaves & weedsDead flowersKitchen wasteBrown BinGrass cuttingsHedge clippingsTwigs & small branchesLeaves & weedsDead flowerspotting compostKitchen waste(St Edmundsbury Council and Nottingham Council Website, 2013)The St Edmundsbury Council website claims that " St Edmundsbury borough council is recycling approximately nine thousand tonnes of dry recyclable materials through the blue bin collection scheme and thirteen thousand tonnes of compostable waste through the brown bin collection scheme each year. A further two thousand tonnes is being recycled through the mini bring sites located across the borough. In total we are recycling and composting approximately 50% of the household waste we produce. In addition we are also beginning to reduce the amount of waste growth year on year." (Anon, 2012, St Edmundsbury Council Website). If the council continues to reduce the waste growth figures they will be on set to meet the targets set by the government in the Landfill Directive. But if we look at Peterborough, they are currently setting the standards high for reducing the amount of waste that is sent to landfill sites across the United Kingdom. They have been actively trying to reduce the amount of waste produced, through the proposed use of an EfW plant. Their EfW plant is not yet active, the construction phase is due to commence in summer 2013, with completion set for 2015. From October 2012, Residents of Peterborough will also be able to recycle their household food waste along with their recyclable waste products. Currently the food waste is put into the black household waste bins used for the collection of non-recyclable waste, and is then sent away to sites to be sorted and either incinerated or sent to landfill. Residents will be provided with another bin, this one is one quarter the size of the current general waste bins provided, for all their food waste to be collected in. This will then be taken to sites to either be turned into soil conditioner or alternatively sent to an EfW plant, to be turned into renewable energy.

## Chapter 3: Fall of Historic Market towns Another 1000 words!!

In the middle of the 20th century many East Anglian towns still had thriving livestock markets selling cattle, sheep, pigs and poultry. Markets were often a hub of great activity, where farmers could meet to show and sell their stock to its best advantage, most markets were held on the same day as a local grain market usually found in the local corn exchange. The largest markets could be found based in Bury St Edmunds, Norwich, Ipswich, Wickham Market, Kings Lynn, Chelmsford, Cambridge and Colchester. In Bury St Edmunds best known for the abbey ruins of St Edmund in the town centre, The Greene King brewery, local markets and for the British Sugar Beat processing factory. The markets could be found on a Saturday and Wednesday in the butter market and cattle market sites in the town centre, allowing local farmers to attend market on a regular basis to discuss local farming matters as well as show and sell their own livestock produce, as well as poultry and other fresh goods. In the past few decades all but two markets in East Anglia have closed, many of the markets we based in town centers and only those who moved around have survived and still trade today. The first market that still remains is in Colchester, which trades weekly with cattle and sheep and the second remaining market is in Norwich where they have two weekly markets to sell their cattle and sheep. Of all the pigs slaughtered and sold in England around 90% would have been sold through the livestock markets. In recent year the selling of pigs has dramatically reduced in numbers, due to lower stock numbers throughout the eastern countries because of BSE, Foot and Mouth, Swine Fever and the financial pressure governments and councils put on keeping town centre sites clear for larger chains to set up and run their businesses, which would inevitably bring in more money for the towns then the markets would. Graham Ellis, mentions that:

## " From a peak of over 500 livestock markets in England and Wales there are now only some 86 operating sites in England and 38 in Wales" (Graham Ellis, Online, 2012).

## Figure Bury St Edmunds Local market in 1890.

## In Bury St. Edmunds today, there is still a local market that takes place weekly on a Wednesday and Saturday, selling fruit and vegetables, plants, clothes, other food produce as well as household and garden items.

## The rise of the supermarket giants, such as Tesco, Asda and Sainsburys have helped force the decline of local independent markets, they are typically just a large version of the much smaller grocers shops that would have originally lined the towns. They are organised into long aisles of similar produce and arranged in a way that the shopper find easy to navigate as they tick off items on their weekly shopping list. Their prices which are often cheaper due to lots of offers on display, appeal to the consumers and draw them into the stores for their weekly or daily shops. With the added bonus of selling pretty much anything you might need, in the way of fresh, frozen and store produce, household items, medicines, clothes, cafes and petrol stations etc. Their general aim is to be convenient and reasonably priced, often comparing and lowering prices between stores, in a rivalling competition for the larger and more successful clientele base. They offer a wide range of products and prices differ from the very cheap own brand ranges (Value, Basics, Smart price etc.) to the more expensive higher quality ranges (finest, Extra special, Taste the difference etc.) and a variety of middle ground brands too. Typically when stores first started retailing, products would have been fetched by the assistant, weighed and measured and individually wrapped, unlike much of today’s produce which has already been specified a quantity and pre-packaged for convenience for the customer to pick of the shelf for themselves.

## As part of my research I asked people where they would do their weekly shop. Of the 40 people I asked 100% of them said that they shopped in supermarkets, 25% shopped at local farms, 40% shopped at the butchers and 40% shopped at markets. From this I then asked them why they shopped there:

## From 40 responses, 95% would shop in supermarkets for the convenience, 62. 5% for the price of food produce, and 20% for the quality of food produce.

## From 36 responses, 5. 5% would shop in butchers for the convenience, 16. 6% for the price of food produce, and 52. 7% for the quality of food produce. 47. 2% of people would not shop here.

## From 35 responses, 22. 8% would shop at markets for the convenience, 37. 1% for the price of food produce, and 42. 8% for the quality of food produce. 40% of people would not shop here.

## From 35 responses, 2. 8% would shop at farms for the convenience, 11. 4% for the price of food produce, and 31. 43% for the quality of food produce. 68% of people would not shop here.

## I asked the same 40 people if they would like to see more locally sourced produce in supermarkets, instead of foreign produce? 90% of people agreed, 10% said they didn’t want to see more local produce. Again I asked them if they would be willing to pay more for locally sourced produce? 55% of people said that they would pay more, where as 45% said they wouldn’t be happy to pay more. Finally I asked, if they ever considered how far the food produce they buy in supermarkets has travelled? The response from this question was equal, with 50% saying yes, they who had previously thought about the distance and 50% saying they hadn’t considered it.

## Much, if not all of the food found in supermarkets will have a ‘ best before’ or, ‘ use by’ date – this is to inform the consumer when food should be eaten by, before it starts to go mouldy or rot. For certain foods such as fresh meat and fish, they should be closely followed, to an extent. These warnings tend to confuse the consumer, by generalising that food should be eaten ‘ by’ the date stated, if it bears the label ‘ use by’ and should be eaten around the date stated on a ‘ best before’ label, this could even be a week after if it is still edible. Yet it is not the case, these are only guidelines, food does not have a specific dairy for consumption, it is down to the conditions that it is stored or packaged in, as well as the general life of the produce. because of these labels a lot of food goes to waste, when a consumer throws it away even if it is still fit for consumption. Leading to increased levels of wasted perfectly edible produce. These guidelines have been relaxed, and now much of the food will bear the label ‘ Best Before’ instead of ‘ Use by’ to try and encourage consumers to think about whether the food is still edible or not.

## Conclusion: Another 1000 words!!

To conclude, we have finally realised that we take considerable advantage of the resources that we use in our everyday lives, and have started to change our usage habits, by sorting our waste into materials and either re-using it, recycling it or reducing the amount of waste we produce, instead of incinerating it or sending it to landfill. We have developed methods for treating it and now have specialised plants for carrying out these processes, such as recycling centers, where much of the waste that has previously been sorted by household into a varied mixture of recyclable waste, is then sorted again into plastics, papers, card, tins etc. From here it can then either be sent to other recycling production centres where it is then recycled into other products or treated on site. Alternatively, the waste can be sorted and sent to specialised plants for turning into renewable energy. My concluding statement is that we do not value the things that we have. We are so quick to discard things, without thinking about the cost or the impact it will have on the planet.