Street food in Kolkata

- A hygienic perspective

by

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Abstract

This report evaluates our project in practice through the organization Innoaid in Kolkata. A description of Innoaid and the situation in Kolkata is included. The aim of the work was to clarify hygienic practice among the middle-class street food vendors in Kolkata by:

Examine the current level of hygiene practice and knowledge among vendors, identify the major hygiene problems, and make proposal for initiatives to increase the hygiene of street food in Kolkata.

Data was collected using observations, interviews, questionnaire and a workshop and have focus on involvement of the vendors’ own perspectives and experiences on maintaining good hygiene practice. The data is divided into four categories in order to use the various methods and collected data in conjunction with each other. The founding’s show that the vendors actually have a reasonable understanding of hygiene but they do not always practice their knowledge. These results are discussed and followed by suggestions for improvements. Ultimately the report ends with our personal learning outcomes.
# Table of Contents

## PART 1

- INTRODUCTION (JANNIE) .................................................................................................................. 5
  - INNOAID AND PROJECT MOTIVATION .................................................................................. 5
    - Innoaid Project Vision ........................................................................................................... 6
    - Innoaid Project Mission ......................................................................................................... 6
- THE SITUATION OF STREET FOOD IN KOLKATA (JANNIE) .................................................. 6
  - STREET FOOD VENDORS ......................................................................................................... 7
  - THE STREET FOOD ..................................................................................................................... 8
  - THE CUSTOMERS ....................................................................................................................... 8
  - GOVERNMENT KOLKATA ......................................................................................................... 9
  - HYGIENE TRAINING CAMPS ............................................................................................... 10
  - MODEL SAFETY ZONE ............................................................................................................. 10
  - NATIONAL POLICY ON URBAN STREET VENDORS 2004 ............................................. 11

## PART 2 ........................................................................................................................................ 11

- HYGIENE THEORY (JANNIE) ...................................................................................................... 11
  - FOUR HYGIENIC CATEGORIES ............................................................................................... 12
    - Food Safety ........................................................................................................................... 12
    - Hygiene of the Environment ............................................................................................... 13
    - Personal Hygiene .................................................................................................................. 13
    - Food and Quality .................................................................................................................. 14
  - CONTROL OF HYGIENE ......................................................................................................... 14
    - HACCP .................................................................................................................................. 14

## PRESENT PROBLEM OF THIS PROJECT (JANNIE AND MARIE) ............................................ 15

## CLARIFICATION AND DEFINITION IN OUR RESEARCH (MARIE) .......................................... 15

## RESEARCH METHODS ................................................................................................................. 16

- DATA COLLECTION IN GENERAL ............................................................................................ 16
  - DATA COLLECTION .................................................................................................................. 16
    - Hygiene Theory ..................................................................................................................... 17
    - Observations: ......................................................................................................................... 17
    - Interviews .............................................................................................................................. 18
    - Interviews with consumers .................................................................................................... 18
    - Questionnaire ......................................................................................................................... 19
  - Workshop .................................................................................................................................. 19

## DATA ANALYSIS (MARIE) ........................................................................................................... 20

- OBSERVATION .......................................................................................................................... 20
  - COOLING AND HEATING FACILITIES: .................................................................................. 21
  - HYGIENE OF ENVIRONMENT: ............................................................................................. 21
  - PERSONAL HYGIENE: .............................................................................................................. 22
FOOD AND QUALITY: .................................................................................................................... 22
INTERVIEWS WITH VENDORS .................................................................................................... 22
INTERVIEWS WITH CONSUMERS: ............................................................................................. 23
  Criteria for choosing a vendor .................................................................................................. 23
  Food safety and knowledge ..................................................................................................... 24
  Upgrading knowledge ............................................................................................................. 25
QUESTIONNAIRE AND WORKSHOP ......................................................................................... 25
  Questionnaire ......................................................................................................................... 25
    Food safety ............................................................................................................................ 26
    Personal hygiene .................................................................................................................. 27
    Food and quality ................................................................................................................... 27
  Workshop ................................................................................................................................... 27
    Food safety ............................................................................................................................ 28
    Hygiene of environment ........................................................................................................ 29
    Personal hygiene .................................................................................................................. 29
    Food and quality ................................................................................................................... 30

BIAS ............................................................................................................................................... 31
  GENERAL ................................................................................................................................... 31
  OBSERVATION .......................................................................................................................... 31
  INTERVIEW ............................................................................................................................... 32
  QUESTIONNAIRE ..................................................................................................................... 32
  WORKSHOP .............................................................................................................................. 33

DISCUSSION AND TRIANGULATION (JANNIE AND MARIE) ......................................................... 33
  FOOD SAFETY .......................................................................................................................... 33
  HYGIENE OF ENVIRONMENT .................................................................................................. 34
  PERSONAL HYGIENE ............................................................................................................... 34
  FOOD AND QUALITY ............................................................................................................... 35
  HYGIENIC KNOWLEDGE? ....................................................................................................... 35
    The street food vendors ......................................................................................................... 35
    The Costumers ....................................................................................................................... 36
  MAKE THE HYGIENE VISIBLE ............................................................................................... 37
  ATMOSPHERE ......................................................................................................................... 38
  WHAT CAN MAKE IT HAPPEN? .............................................................................................. 38

CONCLUSION (JANNIE AND MARIE) .......................................................................................... 39

PERSPECTIVES .......................................................................................................................... 40

KNOWLEDGE AND METHODS ................................................................................................. 41

REFERENCES ................................................................................................................................ 42

PART 3 ......................................................................................................................................... 44

PERSONAL LEARNING REFLECTIONS .................................................................................... 44

APPENDIX 6: NATIONAL POLICY FOR STREET FOOD VENDORS ............................................ 62
Part 1

Introduction (Jannie)
The world is becoming rapidly more urban. The population of the developing countries is projected to double from 1.7 billion in 1995 to 3.4 billion in 2020 and rising deprivation in urban areas including poverty, food insecurity, and malnutrition are increasing faster than in rural areas, and urban growth now presents a serious challenge in developing countries (Maxwell 2000).

Food safety has been declared a global and increasing public health concern by international agencies such as FAO (Food and Agriculture Organization) and WHO (World health Organization). However the exact number of food poisoning and food borne diseases is not known since most incidences are not reported. It has been estimated that food and waterborne diarrheal diseases are leading causes of illness and death in less developed countries killing 1.8 million people annually (WHO 2002). Thus, have the potential of seriously damaging the health status of the populations, simultaneously creating an enormous social and economic burden on communities and their health systems.

Furthermore, the urban growth and food insecurity are important subjects regarding the grown street food sector. The eating habits are changed. The street vendors, who sold only raw commodities in the past, now sell prepared foods as well. The street food trade has shed its disorganized, lower class image and is becoming a viable, important, informal-sector industry. The activity provides income for people who would otherwise be unemployed. But selling prepared foods in the streets also raises concerns about food safety (Chakravarty & Canet 1996).

InnoAid and project motivation
InnoAid is an NGO based in Denmark, founded and run by students from different universities. The InnoAid street food project team consist of Matias Pollmann Gomez - MSc Student in Management Engeneering, Marie Louise M Larsen – MSc Student in Design Engineering and Sandra Villumsen – BSC in Medicine. These persons are the main coordinators who make decisions and delegating work. In addition several volunteer students are involved. InnoAid develops the hygiene and economic training programmes along with the product development of a new cart for selling food, which supports the hygiene training in particular. In cooperation with Joygopalpur Gram Vikash Kendra (JGVK) a local NGO in Sunderbans, south of Kolkata, the training is facilitated to the street vendors, which are becoming organized in Self-help groups. The goal of the InnoAid project is twofold. First, it is to secure better hygiene and thereby better food. Second, it places the vendors in a stronger position economically and socially, as they hopefully will get more customers, and
become a more accepted part of the cityscape, and therefore should no longer pay bribes to stay in business. The InnoAid project is divided into four components.

**Component 1** - The street food vendors will be given education and training, through multiple workshops, on basic financial management and basic hygiene.

**Component 2** - The vendors will be given a visit by the NGO JGVK to check how their money savings are going. Furthermore the micro credit service will be set up and managed by the NGO JGVK.

**Component 3** - Advertised and promoted for a new, improved, street food trolley, enabling hygienic food preparation, and improve the look and infrastructure of the street food area.

**Component 4** – This will look into how the rural women could be involved in process spices and manufacture hygienic organic plates and bowls of leaves for serving (InnoAid, 2009).

**Innoaid Project Vision**
The vision is the long-range goal for the project, and should therefore be seen and used as a guideline for the project. Externally it will be used as a mean to influence stakeholders and internally to keep the right focus.

“To create a new sustainable framework for the production of street food in Kolkata, which should secure better food hygiene, and through that better living conditions for the street food vendors” (InnoAid, 2009).

**Innoaid Project Mission**
“To design a new way of selling street food with focus on food hygiene, contemporary with the needed surrounding service system. Additionally, innovation of the waste management, the food supply chain and the handling of water is needed” (Ibid. 2009).

**The situation of Street Food in Kolkata (Jannie)**
As described in the Introduction street food raises a concern about food safety in many parts of the world.

Studies from Kolkata have shown that the nutrition value of the street food is good, but hygiene tests showed that about 60 per cent of the food contains microbes that can cause coli infection. The bacteria come mainly from poor handling, not the food (HT Correspondent, 2004).

A study by Chakravarty & Canet in Kolkata from 1996 found:

- That the standard plate count (SPC) of samples of lassi had a much higher SPC compared with a heat-treated fried product dosa (fermented rice and black gram flour pancake),
Even though the pH of dosa and lassi is low and not favourable for the growth of Salmonella spp. or Shigella spp., these bacteria were still detected. The contamination probably occurred after processing and is of great concern. One of the probable sources of Salmonella sp. may be the ice used in the preparation of lassi.

- That Escherichia coli, chiefly an indicator of faecal contamination, was detected in 55 percent of the samples tested. The presence of E. coli raises a suspicion of improper food handling practices.

- That vendors were not aware of a pertaining to artificial colours lists the approved colours. For instance, metanil yellow (a textile colour) had a long history of use as a substitute for saffron. Many users of metanil yellow did not know that it was not permitted. Unauthorized use of food additives was detected in 30 of the 50 samples.

- That the water used for drinking, cooking, washing of fruits and vegetables, dishwashing, hand washing, etc. came from pipes or hand-operated tube wells supplied to different localities by the Municipal Corporation of Kolkata. It was found to be contaminated in 47 percent of samples analyzed. It should be noted that the water was safe coming from the source but became contaminated through poor handling practices.

The above examples show that hygienic behaviours, food handling practices of street vendors, water quality etc. are all potential sources of food contamination and efforts to ensure street food safety must therefore be initiated at many levels. Sale and consumption of street foods are on the increase and will continue to grow (WHO 2006). The safety of street food is therefore an area with growing importance for public health but the availability of safe street foods also provide an important platform for productivity, development and poverty alleviation (WHO 2002).

**Street food vendors**

A street food vendor is broadly defined as “a person who offers goods or services for sale to the public without having a permanent built up structure but with a temporary static structure of mobile stall (or headload)” (Ghosh).

In Kolkata it is estimated that there are between 130,000 and 150,000 street food vendors. Of the urban population of India, between 2 and 2.5% are street vendors (Chakravarty & Canet 1996).

Our observations and previous studies in Kolkata (Ibid. 1996) suggest that males, own the biggest proportion (90%) of fast food enterprises in Kolkata, and the vast majority of employees are male as well. The primary reason is that the wives of the vendors help the business by preparing food from home.
On average, half the stalls had an employee. The age of male vendors ranged from 20 to 45 years, while the age of female vendors was 30 to 45 years.

Educational levels among street food vendors were low in general, and 21 percent of vendors were illiterate. This figure is higher than the average for urban people but lower than that for rural situations; around 40 percent of the vendors were from the rural areas. A sizeable number of vendors were commuters. Often, they had to carry their wares by train, travelling distances of 25 to 30 km.

Due to this lack of education in handling a small business economy, the vendors run a day-to-day economy - it is estimated that most vendors have a daily surplus in the region of 20 to 100 RS (Ibid. 1996).

The street food
The most authentic cuisine of India is the Indian street food. The street foods are popular because it can serve almost 1000 calories of food in exchange of Rs. 7/8 only. The hotels and restaurants have no capacity to feed such a vast population in all practical sense and also in so cheaper price (Ghosh). From the customers interviews we found that it is cheapest for traditional Indian dishes such as chapatti or rice with different kinds vegetables. Meat is more expensive.

There are many ethnic groups in Kolkata, and as a result the street foods represent a mixed cuisine. One survey found that they serve more than 300 different types of food on the foothpath – this includes all kinds of food of different Indian states - this protects the food sovereignty in the age of globalization (Ibid.).

The customers
The urban populations are highly dependent on street foods. The customers rang from upper class businessmen to homeless beggars, the reasonably priced street food are of high importance for the people in the low-income end.

Urbanization and longer distances from homes to work places makes it impossible for many workers to eat at home. Therefore the numbers of workers buy street foods as their daily meals. The proximity and easy accessibility to a good selection of dishes also added to the convenience of buying street foods instead of cooking at home (Maxwell 2000).

A study has shown that approximately 80 percent of the costumers are male with an average age of 34 years. All respondents were employed, and some were also students. Their monthly incomes varied from Rs. 250 to Rs. 10 000 or more. On average, regular costumers spent Rs. 250 on street foods per month. Most of the costumers bought street food several time a week and most of the consumers had bought it for a long time in a range from 10 month to 15 years.
The costumers in the study felt that foods boiled or fried just before serving are most sanitary. Costumers considered the quality of food, neatness, hygienic situation and set-up of the stalls inadequate. They supported government control for better quality, low prices and improved hygiene (Chakravarty & Canet 1996).

**Government Kolkata**

In India, corruption of public employees is quite usual, in the shape of bribes to the local policemen. The amount of bribes and protection money paid by vendors is so distinct, that it is estimated that as much as 20% of a vendor’s surplus goes to these payments. Not all vendors pay protection money to the police, but those who does not must pay bribes to some kind of “mafia”. So whether the vendor pays a person from the government (police, food regulation) or some sort of mafia is basically the same.

Because of the ambiguous laws regarding the vending of street foods, is a major source to why the police and food regulation can keep harassing they vendors by demanding bribes (Chakravarty & Canet, 1996).

In 1992 The Calcutta Municipal Corporation and the All India Institute of Hygiene and Public Health (AIIPH) needed better data on both food safety and the socio-economic aspects of the street food sector. Thus, the Government of India sought assistance under the FAO Technical Cooperation Programme to assess the street food situation, to identify measures to reduce the health risks for consumers and to improve the street food sector.

The studies covered such issues as:

- The legal aspects of street food vending
- The safety of foods prepared and sold in the streets
- Socio-economic factors affecting consumers and vendors
- Street food industry practices
- Street food contamination
- And the environmental and sanitary consequences of the activity (Ibid. 1996).

Planning was, according to the study, to develop some food corner model and training of food vendors started. The model corners should have opened first of June 1996, but due to lack of political will, this did not happen was not done (Hawkers Sangram Committee). Therefore, it is now important to focus on what has since been done to improve the situation of street food vendors in Kolkata. Since the improved conditions ultimately will lead to better hygiene conditions and thus safer food.
Hygiene training camps
The study from 1996 showed that the vendors needed to be trained in hygiene. In 2002 the Calcutta HSS (a network of all major Hawker’s Union in Kolkata, Appendix 5) has embarked a training program with the help of AIHPH experts. There has been conducted a training session as per WHO guidelines for vendors - using videos and posters for the purpose. One hundred vendors were taught to keep their surroundings clean, maintain personal hygiene (keep their nails clean and not to spit), keep food covered, serve freshly cooked food to prevent formation of bacteria and select wholesome vegetables and fruit. They were cautioned on the use of colours and cooking medium. They were taught to use clean water not only for cooking but also to wash their utensils. In the case of illness they were told to keep away from the stalls (Statesman News Service, 2002).

The training involves a two-pronged approach. The seller is advised to serve hygienic food and the buyer is told to avoid spitting or throwing leftovers other than in the garbage bin.

A move is also on to regulate street food vendors within the next three months with the issuing of licenses to control vending. There are proposed mobile food stalls that will be allowed to operate between 12 noon and 4 p.m. in office areas. For this, it is prepared to pay night parking allowance. It is also tried to make the KMC (Kolkata Municipal Corporation) supply water to vendors.

There was no problem in getting the vendors accept to the concept of hygiene. The vendors’ sales went up because people saw that they got hygiene training. This resulted in that a lot of other vendors wanted to sign up for the training. After the training the vendors are using clean utensils, and a special type of water filter fitted to the tap for costumers. The vendors say that they promise to follow up on the instruction, they will wear an apron and also keep the umbrella in the stall where the costumers can stand and eat their food (BBC NEWS, 2005).

Model safety zone
Finally, in 2004 four models of safety food zone were developed, at four places in Kolkata. 300 of the street food vendors were now trained in nutrition and hygiene. They would train fellow vendors. The four street included Camac Street, Russel Street, Elgin Road and from Park Street crossing to chatterjee International on JL Nehru Road. Each food stall would have a bin and every zone would engage a sweeper to clean the area thrice a day. Vendors could approach KMC for supply of potable water (Bandyopadhyay, 2004). Instead of using plastic sheets, trained vendors started using huge umbrellas as a “tag”, representing “healthy” food. Some street food vendors had starting using aprons as well. Vendors also kept steel water drums and disposable plates for serving food (Shams, 2004). Vendors decided to manufacture their spices -
the spices will have no added color. There had been drawn guidelines for the vendors to clean their nails, to wear clean clothes and proper handling of food. A doctors’ association has been roped in to carry out periodic check-up of vendors (Bandyopadhyay, 2004).

Costumers will have to pay more, as this “extra expenditure” will add to their costs. For example, do some food vendors charge extra rupees for use-and-throw plates (Shams, 2004).

National Policy On Urban Street Vendors 2004

The overarching objective to be achieved through the national policy on urban street vendors is to: “Provide and promote a supportive environment for earning livelihoods to the Street vendors, as well as ensure absence of congestion and maintenance of hygiene in public spaces and streets” (Ghosh, 2005).

The basic objectives of the policy are: Legal, Facilities, regulation, role in distribution, self-compliance, organization, participation, rehabilitation of child vendors, social security, and financial services (Appendix 6) (Ibid. 2005). It has been shown that there have been difficulties in the implementation of the above policy from 2004. This has led to that the Prime Minister Manmohan Singh in 2009 has impressed upon the chief ministers to take “personal” interest to ensure that the National Policy on Urban Street Vendors 2009 is vigorously and sincerely implemented by the state governments (ANI, 2009).

The above factors are the ones we can deal with at this time in our process. An employer from HSS told us that the problem is now to implement the policy in the different states of India. The HSS are also working hard by contacting the Government, to obtain an implementation of the policy. This is a big step against acceptance of the street food vendors in Kolkata from all levels of the society.

The specific tasks and activities that we have worked with in Kolkata are further described in part 2.

Part 2

Hygiene theory (Jannie)
From a public health point of view the hygienic quality and food safety is a crucial dimension of street food quality since foods have been recognized to be of low hygienic standards and a potential source of diseases.

Observing and assessing performed hygiene practices from a scientists’ outside view is focusing on sources
of contamination and risk of infection. Hygiene is rooted in the European sanitarian movement beginning in the mid 19th century. At that time the urban growth of western cities and the rapid industrialization created congested living conditions for the urban populations and caused concerns of public health. Sanitation and sewage became the main tools in combating endemic contagious by diseases, defeating them by improving the overall hygiene of the urban environment by removing and limiting the risk of contact with disgusting dirt and waste. The focus on contamination was reinforced with the great scientific revolution of Louis Pasteur and others in the mid and late 19th century. Discovering the significance of microorganisms and their roles in disease transmission, the germ theory became the leading and most weighty argument for enhancing hygiene. Promoting hygiene was from then on inevitable connected with eradicating favorable living conditions and sources of bacteria, parasites and other pathogens (Rosen 1993).

Four hygienic categories
While including all of the above aspects of hygiene in our research, we have chosen to subdivide different hygienic practices into four main categories like mentioned in the method chapter. Below are the key hygiene practices listed within each category.

Food Safety
Simple measures such as washing and peeling the food may reduce the risk of contamination with microorganisms from raw food. Proper cooking kills almost all dangerous microorganisms. Studies have shown that cooking food to a temperature of 70°C can help ensure it is safe for consumption.

Microorganisms can multiply very quickly if food is stored at room temperature. By holding at temperatures below 5°C or above 60°C, the growth of microorganisms is slowed down or stopped – but some dangerous microorganisms will still grow below 5°C (WHO, 2010).

Depending on the nature of the food operations undertaken, adequate facilities should be available for heating, cooling, cooking, refrigerating and freezing food, for storing refrigerated or frozen foods, monitoring food temperatures, and when necessary, controlling ambient temperatures to ensure the safety and suitability of food (FAO Corporate Document Repository, 1999).

Important hygienic aspects related to Food Safety:

- Separate raw meat, poultry and seafood from other foods.
- Use separate equipment and utensils such as knives and cutting boards for handling raw foods.
• Store food in containers to avoid contact between raw and prepared foods.
• Wash fruits and vegetables, especially if eaten raw.
• Remove outer leaves of leafy vegetables.
• Cook food thoroughly, make sure that the temperature have reached 70°C.
• Reheat cooked food thoroughly.
• Do not leave cooked food at room temperatures for more than 2 hours.
• Refrigerate promptly all cooked and perishable food (preferably below 5°C) (WHO, 2010).

Hygiene of the Environment
Potential sources of contamination from the environment should be considered. In particular, primary food production should not be carried on in areas where the presence of potentially harmful substances would lead to an unacceptable level of such substances in food. Dangerous microorganisms are widely found in soil, water, animal and people. These microorganisms are carried on hands, wiping cloths and utensils, cutting boards and the slightest contact can transfer them to food and cause food borne diseases (WHO, 2010).

Important hygienic aspects related to the Hygiene of the Environment:

• Protect food and food ingredients from contamination by pests, or by chemical, physical or microbiological contaminants or other objectionable substances during handling, storage and transport.
• Waste must not be allowed to accumulate in food handling, food storage, and other working areas and the adjoining environment. Waste stores must be kept appropriately clean.
• Adequate drainage and waste disposal systems and facilities should be provided. They should be designed and constructed so that the risk of contaminating food or the potable water supply is avoided (FAO Corporate Document Repository, 1999).
• Water used for cleaning should be from a safe source or made safe.
• Wash and sanitize all surfaces and equipment used for food preparation (WHO, 2010).

Personal Hygiene
As a consequence of humans also containing microorganisms, naturally occurring or from the surrounding environment, it is incredibly important to maintain an appropriate personal hygiene.
Important hygienic aspects related to Personal Hygiene:

- Wash your hands before handling food and often during food preparation
- Wash your hands after going to the toilet (WHO, 2010)
- Drying hands after hand washing
- Wear clean protective clothing
- Wear head covering
- Do not wear personal effects such as jewellery, watches, pins or other items in food handling areas.
- Be aware of cuts and wounds, they should be covered by suitable waterproof dressings.
- Avoid personal behaviour such as smoking, spitting, chewing or eating, sneezing or coughing over unprotected food
- Do not handle food if know or suspect to be suffering from, or to be a carrier of a disease or illness likely to be transmitted through food (FAO Corporate Document Repository, 1999).

Food and Quality
It is important to take care in selection of raw materials. Raw materials, including water and ice may be contaminated with dangerous microorganisms and chemicals. Toxic chemicals may be formed in damaged and mouldy foods.

Important hygienic aspects related to Food and Quality:

- Select fresh and wholesome foods
- Choose food processed for safety, such as pasteurized milk
- Use safe water or treat it to make it safe (WHO, 2010).
- Ice should be made from safe water (FAO Corporate Document Repository, 1999).

Control of hygiene

HACCP
The potential effects of primary production activities on the safety and suitability of food should be considered at all times. In particular, this includes identifying any specific points in such activities where a high probability of contamination may exist and taking specific measures to minimize that probability. The HACCP-based approach may reduce the risk of unsafe food by taking preventive measures to assure the safety and suitability of food at an appropriate stage in the operation by controlling food hazards. In
addition, the application of HACCP systems can aid inspection by regulatory authorities and promote international trade by increasing confidence in food safety.

Food business operators could control food hazards through the use of systems such as HACCP. They should:

- **Identify** any steps in their operations which are critical to the safety of food;
- **Implement** effective control procedures at those steps;
- **Monitor** control procedures to ensure their continuing effectiveness; and
- **Review** control procedures periodically, and whenever the operations change.

These systems should be applied throughout the food chain to control food hygiene throughout the shelf life of the product through proper product and process design.

Small and/or less developed businesses do not always have the resources and the necessary expertise on site for the development and implementation of an effective HACCP plan. In such situations, expert advice should be obtained from other sources e.g. regulatory authorities. HACCP literature and especially sector-specific HACCP guides can be valuable. HACCP guidance developed by experts relevant to the process or type of operation may provide a useful tool for businesses in designing and implementing the HACCP plan. Where businesses are using expertly developed HACCP guidance, it is essential that it is specific to the foods and/or processes under consideration (FAO Corporate Document Repository, 1999). It also appears that the most important strategy for improving the safety of street foods in Africa is proper training of street vendors using the HACCP approach (Ekanem, 1998).

**Present problem of this project (Jannie and Marie)**

How are the current hygiene practices and knowledge of middle-class vendors in Kolkata and are there any hygiene problems?
- Which challenges and problems is the vendors experience in relation to maintain a good hygiene?
- Which initiatives could increase the hygiene of street food in Kolkata?

**Clarification and definition in our research (Marie)**

This study has focused on middle class street food vendors and their customers in Kolkata and the results are therefore foremost valid for this segment of vendors and customers.
The analysis has focus on results that show lack of hygiene practices and knowledge. Furthermore, the research is limited to vendors serving meals from street based stands. These and similar vendors can be considered as ‘middle class’ vendors, since they have established kitchens but are not considered as proper restaurants or cafés. This group is chosen so the research fit to the target group of vendors in the project of Innoaid.

Food hygiene and food safety are expected to be lower with ‘low class’ vendors who are known to cook under lower inadequately conditions. To get a complete picture of hygiene and food safety of street foods in Kolkata, it is absolutely relevant to observe and evaluate lower-class vendors.

Research Methods

Data collection in general
Qualitative data was collected among street food vendors and customers during fieldwork from February to March in Kolkata, the capital of the West Bengal state in northeast India. Data was collected using observations, interviews, questionnaire and a workshop. See pictures from our work in appendix 1. Data was compiled in handwritten field notes, pictures and recordings during field activities, and was indexed and entered in our databases on laptops as quickly as possible during the field study.

Data collection
To obtain an overview of our data collection and how to approach it, we made a matrix of information we need with categories divided into tree levels; Action, opinion and knowledge (Appendix 2). This study has main focus in four selected categories from the matrix:

- Food safety
- Hygiene of environment
- Personal hygiene
- Food and quality

The categories are chosen in order to use the various methods and collected data in conjunction with each other and end up with triangulation of the results. Therefore all the categories are more or less reflected in the observations, the interviews, the questionnaires, and in the workshop.

It is attempted to identify all areas from different angles and cover the tree levels from the matrix. Observations provide insight into the current conditions. Interviews and questionnaires provide a picture of street food vendors’ knowledge and professionalism. The aims of the questionnaire and workshop are to
give insight in different levels of the categories. The purpose is to get data about what the vendors do in action (behaviour), what are their opinions, and what knowledge did they have about hygiene. The three proportions of questions are all necessary to get insight in how the target group act after their own opinions, knowledge and opposite what they in actuality do in action. Furthermore, this can provide an insight into their own cognitive approach to their problems and what suggestions they have for improvements and changes. This is an important part of project collaboration (Rifkin & Pridmore 2001).

Hygiene Theory
It is chosen to include hygiene theory which includes a quick review of hygiene history - which gives an understanding of how people did understand the concept of hygiene, why it is important to think about hygiene and important aspects related hereto.

Then we focus on the four categories within hygiene, which we have included throughout our studio in Kolkata. In theory, the reader gets an understanding of how good hygienic practices should be performed within each category and in practice, we have focused on the lack of aspects according to the performance of these.

Furthermore it chosen to include a section on the control of hygiene, as it is highly relevant to qualify the practices within each category. And the control of good hygienic practices may also give us ideas on how to obtain a better hygiene of the street food vendors in Kolkata.

Observations:
Observations of occasional vendors on different streets in the center of Kolkata were conducted throughout the whole period and were passive and as well with conversation with the vendor. Observations were conducted walking, standing or sitting near kitchens and vending stands and included all cooking and vending procedures as well as interactions with customers. A structured observation guide was followed with specified categories to observe. Observations were continually indexed according to the main categories of the observation guide (appendix 3).

More unstructured observations were made with a local student as informant, where we had explanations of what various dishes consisted of and how they are prepared. We were offered to taste many of the dishes. This gave the opportunity to ask individual questions to the seller. In these observations, we recorded the conversation on a dictaphone and took pictures as a way to remember the various details.

The main observations were done in Camac Street, College Street and Acharya Jagadish Chandra Bose Road.
Interviews
Some informal interviews and conversations were conducted with vendors.
All interviews were conducted using semi-structured interview guides and focused on knowledge about the street food vendor’s work in practice, things which were difficult to see in the observation. It was attempted to get insight to perceptions and attitudes towards food safety, hygiene of environment, personal hygiene and food and quality. This should lead to understanding for what the street food sellers see as important factors related to the categories and challenges for the street food business, customer relationships and cooking knowledge, education and experience. Formal interviews were conducted using a translator because most of the vendors are not sufficiently articulated in English to ensure interview material of good quality. Questions and answers were translated ad verbatim simultaneously during these interviews. Permission to record interviews was given by all vendors interviewed. Interviews took place at the vending stand and often had to be conducted in small sessions, since vendors had to attend to their work.

The primary intention of using qualitative methods is to draw closer understanding from the vendor’s viewpoint. A limitation of the qualitative research interview may be in the informants’ lack of knowledge, will and formulation ability to answer the questions in the interview situation.

Interviews with consumers
A total of 7 individual customers (3 males) were interviewed on the streets or a café. Customers ranged between 19-24 years in age, 6 students and 1 worker. The customers were recruited around the street. Respondents were questioned on the spot for 10 minutes or shorter. Notes were taken on all occasions and 2 of the interviews were also recorded. Due to customers being in a hurry when purchasing food it was not possible to conduct all interviews as formal recorded sessions. There is only taken account of the food safety category to limit the data as much as possible and get the most relevant and useful information. All the interviews were carried out in English. Street interviews were mainly conducted to quickly gain an insight into many people’s consumption patterns, attitudes towards street food quality and food safety and hence serve as basic knowledge to identify core issues and develop guides for later discussions (See interview guide in appendix 4).

The topic to find out in interviews with costumers is the pattern of knowledge among consumers, how consumers choose a street food vendors, how they perceive street food compared to eating home cooked food, what risk concerns and awareness towards food hygiene and food safety do the consumers have when they eat street food.
Questionnaire
As interviews with street vendors did not give us the desired insights we wanted on hygiene knowledge, we made a questionnaire, so we hedged our data material have been validated and usable. All the questions are group under the four categories.
The questionnaire has been prepared in light of the founding issues through observations, conversations and interviews. According to the construction of the questionnaire it is chosen to start with background questions that are easy to answer (Faarup & Hansen 2008). After questions follow according to the vendors’ opinion, knowledge and action issues, parallel to the matrix of information we need.
As a start, with help by students and employers of Hawker Sangram Samity (HSS) union, respondents were presented for the purpose of the study and their anonymity of participation, to reduce any doubt and to obtain the vendors’ confidence. We handed out 25 questionnaires of which 19 where returned.

Workshop
When doing research with language and cultural barriers the traditional way of collecting data is not always sufficient, as in our case with interviews. To obtain constructive information and at same time get insight into what the vendors are experiencing as challenges and problems in their everyday work related to the four categories, a workshop was considered as a good opportunity to get the data we were missing from the interview.
Involving and collaborating with locals who are intended to benefit from the project as well as those who be involved and affected by it have been showed to be profitable in many cases. The World Bank’s Participation Sourcebook highlight that:

1. Local people have a great amount of experience and insight into what does not work, and why.
2. Involving local people in planning projects can increase their commitment to the project.
3. Involving local people can help them to develop technical and management skills and thereby increase their opportunities for employment (Rifkin & Pridmore 2001).

This way of collecting data is not usual related to research project, but in this case we found it necessary to make use of other methods. It is also a good chance to see problems form their point of view and getting their ideas on how some problems could be solved and what they think could help to make their situation better than now.
With help from the HSC union 25 vendors were invited to take part in the workshop. We invited students from Indian Institute of Technology (IIT) in Kharagpur to help with translating, so the workshop could be done in spite of language barriers. Employees from the HSS union and the students helped translating. They cooperated with the vendors in small groups, so the topics of the information could end with some English material to further analyze.

Main topics of the workshop was to find out:

- What the vendors see as challenges and problems related to the four categories.
- What the vendors think could help them solve or make the circumstances better in these challenges and problems.

The workshop was divided in two parts: first they discuss one category in each group and describe the topics of problems on a paper. Second, this material was given to another group for then to find a solution to the problems.

**Data analysis (Marie)**

This chapter will go through the most important results in each method.

**Observation**

**Type of food vended:**

We observed many different dishes being prepared, through our observation we found most Indian food on the streets. The dishes represented all kind of food from the world including almost all kind of food of different Indian states.

**Food safety:**

There were some deviations in the standard of food safety among the various vendors. Some clearly have some hygiene practice, they wash dishes in hot water, using soap, wearing apron and cover their food very carefully. But in general the same problem was observed around the streets. The frequent remarks to encounter were such as non-covered food and commodities stored in open boxes or in what ever they have available of pots, pans, buckets etc., no use of utensils, dirty towels, cleaning of boards, plates, cups was often done by wiping it “clean” with cloths, which were often dirty pieces of textiles, tables with leftover of old food and the treat of non-cooked food directly on dirty tables and worst case on ground with high risk of contamination. Some vendors use lid or glass plates to cover the cooking pots, but it was far from all. Often dough was placed uncovered in a bowl or directly on the table covered with a towel, often dirties. In
the worst cases we observed the raw uncooked food and dough was placed in front of busy traffic by costumers and cars.

**Cooling and heating facilities:**

Cooling of food is a very weak area for street food vendors in Kolkata, which is simple due to the lack of economic resources and facility at street level. In a few places there was used large ice blocks to cool the food although this was a rare sight. In contrast here to, heating and cooking facilities is less cumbersome. Many options such as gas, coal grill, clay ovens, and a simple Tandori oven could be seen around in the streets.

It was difficult to have insight in how long time the food have been in the pots and how often they reheated the food, at many places they served the accessories unheated. Another impression was that buying food late is associated with higher risk to have some food, which has been stored too long without refrigeration or heating. Often vendors cook large portions of food and bring it to the vending place for store and sell throughout the day so food served in the evening time have therefore typically been on display under tepid temperatures for many hours and maybe been re-heated for a short time during the day. Most of the fast food vendors reheat their food by frying it just before serving whereas some vendors do not reheat. Chicken was often served cold or tepid.

**Hygiene of environment:**

The larger and more bustling streets are in general look more organized and neat than the small non-traffic streets. The tidy streets have dustbins at the vending places in addition to in the worst places where the used plates and cups lay on the ground side by side with garbage and leftovers from commodities often piled up in the drain. Many flies, small cockroaches and crows where everywhere around the stands, people around and near did not worry about them. The crows eat leftover food in drains, garbage bins, sitting on parasols and if they got the chance they almost sat on the top of the commodities and food. Most vendors have covered their stand with sunshades or in other way trying to avoid the sun, dust and birds, only very few had not. Unfortunately many places they did not cover the chart properly, leading to a risk of bird droppings and other dirt from the air, which can contaminate the food and surroundings. We did not see any public toilet facilities in the areas with street food and very poor sanitation and drainage facilities were accumulating to the potential danger of cross-contamination during cooking processes. Few places have no drainage and some places it was clogged by garbage so streams of dirty water from the dish washing and cooking where floating on the ground around. Most streets have one or more water pumps,
where water was pumped from the ground and loaded into containers and cans for transport to the vending place.

**Personal Hygiene:**
In some of the more organized and bustling streets it was more frequently to find vendors using apron, wearing clean clothes and doing hand wash apart from use of soap. But most vendors where not observed to wash hands regularly. The risk of food contamination was increased by the common practice of using hands for serving foods. Most vendors used hands for serving the ready meals to some extend e.g. when grabbing chapatti or salads with hands. Many vendors wore fingerings, touched money several times in between touching the food without hand wash, e.g. a vendor making bread had flour and dough on his hands when he accepted payment and after he continued the cooking where as another vendor used hands to grab the cooked meat from a box and following dried his hands in a dirty towel, after which he prepared a ready meal for serving with his hands.

**Food and Quality:**
In general the food and commodities was looking fresh and at some places you find a fresh smell of new baked bread or spices in the air. At vending site in front of busy and big roads the food had a lesser fresh smell because of the pollution from cars. The worst situation there was observed was dough with a crust of dust and pollution, together with meat looking very dry and old.

The fruit vendors regularly put water over their fruit and vegetables for that reason they look fresh and appetizing. This is a big issue due to the food safety if the water is unhygienic. Few vending dishes e.g. Chart was observed to have a very unnatural yellow colour.

None of the stands had direct access to portable water so they collect water from public pumps in the neighbourhoods. However, all vendors found it troublesome and very time consuming to manually go and get water several times a day. At the more organized vending sites, the vendor had cold water available in buckets for dishwashing. Dirty plates, cups, utensils etc. were washed in soapy water and rinsed with clear water. But the amounts of water available were limited and water where not shifted regularly. Plates were therefore often greasy after washing and like many other places they were dried clean with a towel or clothes.

**Interviews with vendors**
The data from interviews with vendors are not usable. We unfortunately experienced problems with
students who functioned as translator between the vendors and us. Despite a short thorough briefing before we went out on the streets, the students found it inappropriate and embarrassing to ask questions regarding to the vendors hygiene when faced with it.

**Interviews with consumers:**

**Criteria for choosing a vendor**
The outcome of interviewing customers has shown a great homogeneity of perceptions towards hygiene, nutrition cleanliness and social values of street foods when asked and reflecting upon how they choose a vendor. Informants were all from the middle class and up and perform very good English. When eating a meal it is known that the sensory part such as taste, look, smell, consistency etc. had a great importance for the experience of a meal. However, taste was of highly priority by most of customers. It was in many cases ranked as one of the most important criterion when they buy street food:

- “I look for the place is clean, stuff around the cart and things like that. But the most important is the taste”, - “It also depends on the taste”, - “The taste is most important”, - “Nr 1 preference is the taste, it’s important that the food is tasty. The second is cleanliness”, - “Not dirty and then the taste”. - “The taste – more spicy”, - “… street food is more tasty”.

Although customers expressed a concern for the hygiene aspect, taste is still the most important when choosing food. The sensory criteria of taste were therefore quite incorporated into the experience of eating food but also rarely a factor for testing and trusting vendors. Many consumers choose to buy street food from a known vendor and a social bond to a known vendor seems to be one of the influential factors when choosing a trusted place to eat:

- “We have known the vendor for years, now we know it is safe”, - “The same vendor, because of taste”, - “The same vendors, when you know its good why those another”, - “If we like some place we go there a lot”, - “If food is not good I shift” – “We know the place and go there”.

The reason to eat street food is also depended on social factors such as good company when eating:
“With friends and family”, “To try some different. But also when you hang out with some friends, it’s good as a snack”. “Social aspect, with friends and family. Never alone”.

Food safety and knowledge

Most of the interviewed costumers express that it is common to become sick of street food. They had all tried to or heard about someone became sick of street food. Despite the knowledge that a certain risk associated with eating street food, all informants eat it at least once a week and some every day. The mentioned transmissions the costumers are familiar with:

- “The transmission could be in the water, hands and location with many people”, - “... could be from not clean equipment. Not fresh food, sometimes the ingredients are rotten and they reuse food in several days”, - “The transmission could be the vendor him self”.

Most parts of the informants do not see any street food being more unsafe compared to others. Only one mention that deep fried food and hot food is safer than cold food. Asking about what can be done to avoid become sick and what to look for also tell a little about the costumer’s hygiene knowledge:

- “The vendor could use fresh material and clean water”, - “Wearing gloves. Prober arrangement when they prepare”, - “Use fresh material and clean water”.

- “look out for facilities and ask the vendors”, - “Go the right places”, - “look out for facilities”, - “Have clean hands before eating, you eat most food with your fingers”

- “I don’t eat cut food and vegetables”, - “I avoid curdprouducts, they get old faster”, “I don’t eat Dahl. And also trying to avoid oil, the oil is really bad. Bad quality. They reuse the oil for many things”, - “Always avoid fruits and lime juice. You never know what kind of water they are using”.

This tells us that customers are aware of certain hygiene aspects, such as washing of hands before eating, and avoiding unclean water and vendors with poor facilities. The interviews gave insight in things, which are difficult to see, such as reusing oil and adding the food dangerous colour so it look more appetizing. In this contrast the taste come into the picture of an essential character again:
"We can do very little. But it is our decision which vendor we choose and I think the clean vendors have more costumers than others. But if the food is not tasty, people will not come even if it’s a clean place”.

Upgrading knowledge
Ways to improve knowledge on hygiene are not mentioned by many. Few mention that they obtain their knowledge from the media and school campaigns. Campaigns in public or from the local authority happen very rare. Searching for the informant’s perceptions on how hygiene knowledge could be obtained well, the answer gave similar results:

- “I think in schools. Maybe. There could be a course in nutrition where you could learn about hygiene”, - “Young people are concerned about health nowadays. Put hygiene signs on the streets”.
- “The media, TV… If they do not have, I think the radio”.

More direct questions on what could make the hygiene better in future gave a little better response:

“Safe material, clean water”, - “Stop food adulteration”, - “In respect to the cleanliness, I think you may could have a price ceremony every year. A kind of an award, who is the most clean vendor, a price winner”.

Vendors are not always doing what they are suppose to do in their hygiene practice, sometime it is due to lack of knowledge, many times it is due to the hygiene practices is more time consuming and costs extra resources. See all answers from costumer interview in appendix 4.

Questionnaire and workshop
The filling of questionnaire and the workshop took place at the HSS unions office Friday 12th march at 6 pm. It was a very small place to arrange for 25 people, so during the event we all were sitting on the flour to get space for everyone.

Questionnaire
We will not deeply analyze all answers from the questionnaire in this chapter. See the complete schedule of all answers in appendix 7. The questionnaire shows that the street food vendors basically have knowledge of how to practice good hygiene and many of the questions are answered similar. An interesting area in this questionnaire is to look at a possible difference in response between vendors who have received hygiene training compare with those who have not.
Food safety
Most of the vendors see street food generally as safe, all ranged their answer between 8 and 10, where 10 is always safe. A little difference in the opinion about how easy it is to keep the street food safe, but the major of answers lay in the easy end.

In preventing the food from getting contaminated most of the vendors’ answered that they cover their food, keep it hot and clean.

Figure 1 shows that most of the vendors use utensils when they serve their food.

![Use of utensils in serving](chart)

Those who answer Sometimes or No all are vendors who had received hygiene training. The vendors who did not have received any hygiene training have all answered Yes.

Figure 2 shows that there is a big difference in the vendors’ opinion about it has consequence to touch the food after it is cooked and while serving.

![Does it matter if you touch the food after cooking/ while serving?](chart)

Both trained and not trained answered both Yes and No. There is no difference in this sense in light of whether you have received hygiene training or not. Remarkable in the followed comment is that one
vendor says that the reason he not touch the food is to keep the customer happy, another comments that it’s hard to prepare untouched food which taste good.

In the question How important do you think it is to reheat food if it is getting cold? One vendor answer it is not important, the rest range their answer from 7 to 10 as 10 is very important.

The last question Can you think of any practise that would make your food safer but is difficult to perform at your current location? following answer are interesting in this context:

If I could use cooling equipment I could be better. But it is not impossible in pavement, Need permanent structure to keep food safe and Need better equipment.

In the results of this Hygiene of the environment there is nothing important to remark further.

**Personal hygiene**

Four of the vendors had answer yes to Have you ever had any health problems related to food yourself?.

Figure 3 below shows that 10 of the vendors who received hygiene training only wash hands sometimes.

![Figure 3](image)

**Food and quality**

In addition to the question what do you look for when you buy food ingredients? Many answer quality. In this response detailed description of what qualities they look for are needed. Two mentions that they are looking for size when buying commodity. Since the category is only represented short by 2 questions in the questionnaire there is no more of importance.

**Workshop**

During the workshop each group was discussing an extra category than first expected due to half of the vendors had vent home, they had long way home and had to get up and work the next day. Tree groups of tree or four vendors in each were discussing the categories.
Not all the planned material was discussed. We could sense that the vendors were tired and not in the mood to discuss in groups. Therefore, we put emphasis on what we consider to be the most important data to collect; which mainly was what they experience as challenged and problems in the everyday work related to the four categories and then their suggestion for how it could be solved.

**Food safety**
In the first round the group have ranged the most important things to care for in relation to keep food safe:

1. Keep fish, meat and vegetables fresh.
2. Have fresh water
3. Wash the vegetables with fresh water
4. Cooking area should be clean
5. Keep food warm, minimum 65 degree.

In the discussion they ranged their five biggest problems in relation to food safety:

1. Reheating the food, more fuel is used
2. When we using re-cycle plates we have to convince the costumer to pay extra.
3. Cleaning utilises regularly due to contamination

Second round another group discuss how they think they could solve the ranged problems from first round and of cause add other problems to the category.

The second group ad following problems:

- Keep the food in a proper temperature,
- Working capital that is necessary to maintain food safety processes.

Vendor’s suggestion on how some of the problems can be solved:

1. Using the re-cycle plates is the best and a healthy option
2. Cooked food should be kept above 65 degree
3. Boil raw material to kill any infections
4. In case of micro finance we need to have some micro finance from bank or NGO.
Hygiene of environment

The first round the group have ranged the most important thing to care for in relation to hygiene of the environment:

1. Hot water is not available
2. Open sky preparation. Bacteria and dust are in the area
3. Drain problems
4. Drinking water is not safe
5. Wash clothes is difficult to perform

The second group ad following problems

- Keep the hawking area clean, the sweeper doesn’t show up in time.
- Waste management by corporation, many the cooking places are dirty.
- Dust during winds and summer,
- Waste disposal
- Need better sanitation

Vendor’s suggestion on how some of the problems can be solved:

1. Need prober sanitation facilities from the government
2. To keep the area clean we can use community management or local authority management. In case of waste management we need to consult with the local corporation. Unions have their own sweepers. 4 sweepers in chowrangee road, russel street, elgin road and camac road. We need more in the other roads.
3. Monthly salary through contribution
4. Have to install composite pit

Personal hygiene

In the discussing they ranged their five biggest problems in relation to personal hygiene:

1. Health. It is difficult to have medical so you get quick healthy
2. Wash hands prober. Wash in cooking center.
3. Manpower problem

The second group ad following problems

- Vendors can not afford to be sick, have to work even we are filling unhealthy
• Difficult to always have clean clothes
• Keep the vendor and server hands and nail clean

Vendors’ suggestion on how some of the problems can be solved:

1. Cooks have to be off good health
2. Need apron, cap and personal hygiene for cook and server
3. Need restriction

Food and quality
The first round the group have ranged the most important thing to care for in relation to food and quality

1. To buy and keep vegetables fresh
2. Good quality spices
3. Providing mineral water cost more
4. Water supply from corporation is not efficient

In the discussion they ranged their five biggest problems in relation to food and quality:

1. Procurements of raw material
2. Availability of raw material
3. Seasonal vegetables
4. K.M.C. water is not allowed all time
5. Use of branded spices is more expensive

The second group ad following problems:

• Freshness and quality of raw materials
• Hot water washing of utensils and raw materials
• Availability of safe water for cooking
• Vitamin content decreases due to reheating
• Availability of healthy spices,
• Colour in reasonable price. It is difficult to by safe colour to a good price, and the cheap ones are dangerous for the health.
• Transportation
The vendor’s suggestion on how some of the problems can be solved:

1. Need clean water, which is cheaply available. For safe water we need to negotiate with the local people at the vending places.

The above shows that the categories is discussed in greater or lesser extent, but as a rule, they have given a constructive material, which will be included in the later discussion and solutions in section xx.

**Bias**

There are worth mentioning margins of this field study and some biases were recognized during and after fieldwork. These will shortly be mention in this part divided into each method of data collection.

**General**

The students and union employers had no experience in translation processes but had been operate and done researchers conducting similar fieldwork. However, translation bias was probably still present in some degree in the interviews, questionnaire and workshop. To limit translation biases each guide was presented and briefed in advance to the translator.

Throughout the project has only male street vendors were included, since women were a rare sight in the sector. But this might not have the biggest influence on our results.

**Observation**

Observations are always influenced by the researchers own agenda and ability to understand the situation. They are “subjective, because what we see (or do not see) is influenced by our own culture and experience” (Rifkin 2001:44). Some of the observing might give a wrong impression since the observer does not understand the setting and underlying cultural reasoning. Being a white, western and none Bengali speaking person, possibly sets limits to what we can observe and understand in the street food sector in Kolkata.

During observation vendors seemed to be concerned about being observed by two white girls. It was a challenge to do observations in a respectful and effective way. The dilemma was how to get close enough without disturbing the vendor and how far away to go without missing out important behaviours or giving the vendors chance to cover parts of the food procedures. Taking out a notebook could intimidate vendors. Instead we ask for permission to take pictures to reconstruct and to remember the circumstances.

Observations is completed primary from 3 streets which not are representative for the whole segment of
street food vendors but observations at each vendor have been extensive covering a wide range of aspects of vending street food and together with numerous interviews and conversations these have produced a comprehensive data material from some representative vendors in Kolkata. Furthermore, using triangulation in data collection methods strengthened the validity of research results.

Interview
Translation and transcription bias is almost inevitable in an amount. The low quality of recordings, with a lot of street noise, sometimes made it quite impossible to understand the contents and notes from the interviews were often necessary to complete the transcriptions. The questions we asked the vendors were a combination of what we observed and what fitted in the situation.

The majority of interviewed customers were young middle-class students and workers, who ate street foods on a regular basis. This selection provides information from the typical street food customer segment in full accordance with the target of street food vendors. But due to the fact that they were well educated they might know more about hygiene than average. In spite of this, it could have been relevant to consult high social-class people and non-customers if a complete picture of perceptions towards street food and reasons for not eating it.

Questionnaire
We distributed 25 questionnaires and received 19 back, which is a high response rate and data are therefore deemed to be valid.

It has taken less time to complete with a shorter and more defined questionnaire. Questions are left out in the analysis because they are judged to be either useless or sellers have responded similar. Regarding to the validity, it should only had been asked about the most necessary - and thereby avoid filler. Needless questions could have been sorted out by performing a pilot test of the questionnaire (Hansen et al 2008). It would have been an advantage if there before each question was informed about one or more marks in the answer, since there were different numbers of crosses in the various questions (Ibid). The different number of the check has led to widely different sample sizes, which reduces validity.

Because of time and resources it was unfortunately not possible to distribute questionnaires to the full a representative group of street vendors in Kolkata. None from rural areas had the opportunity to participate in the workshop, which also was the night we filled out questionnaires. The vendors from rural areas are often not joined with a union because they do not vending at permanent days and locations.

The translators experienced a lack of knowledge about distance and time of transport among some of the vendor because they found it difficult to answer this. Some answers were obvious pure guesses and
therefore answers are not regarded as being completely accurate. This shows a cultural difference in what we regard as simple and easy questions to answer was not easy for street vendors.

Workshop
Transcription completed by the translator during the sessions was followed up by question in which wording and correctness of the translation and notes was discussed.

In regarding to the very long questionnaire a lot of the vendors went of when the workshop began. For that reason the answers we god was discussed by less person than was our attention from the beginning. Especially one vendor speaking very good English did answer a lot of the questions because he entrained in all the groups. We also got the feeling that he affected the other vendors and their answers, while he was basically the one talking to the translator.

Discussion and triangulation (Jannie and Marie)
In this section the analyzing results from the above sections will be triangulated and discussed in the four categories. At least some suggestions on what could be done to improve the hygiene in these results that are most critical.

Food safety
In the observations we saw uncovered commodities in worst case in front of a busy streets, no use of utensils, dirty towels, unacceptable cleaning of dishes and equipment, serving of food without heating or cooling when it is stored. In the questionnaire the results showed that most of the vendors have knowledge about how to practice these things right. They know the right answers but in conjunction with our observations results they did not always perform it right in practice, many express it is due to lack of financial resources and facilities in pavement. They also describe that they need permanent structure and better equipment.

In the workshop more economic concerns like reheating food requires more fuel was worried. This is one example of many that due to economic reasons, the vendors cannot maintain a proper food safety. If they charge extra for food safety reasons they have to convince the costumer. This is paradoxical as customers’ express that they will pay extra for higher food safety. Whether it is an apology due to knowledge about the practice is not carried out in the best possible way, the reason is that they need initial capital to upgrade equipment and resources such as time, is difficult to say.

Regularly wash of equipment and utensils with soap and clean water, use of utensils while serving and
preparing, use clean towels and storage in safe closed boxes is a good step towards a better food safety. A proposal could also be a temperature sensor and a form for self-monitoring of when different serving dishes are heated to certain temperature.

Hygiene of environment
The observing found dish, leftovers from commodities and garbage on the ground and piled up in drains. Flies, cockroach and especially crows where around and very close the stands. The vendors express the same problems in the workshop, but they did not mention any problem with pests. It could lay in the needs of better sanitation and the waste management because a lack of these attracts those kinds of pests we saw in our observation. The HSS unions have four sweepers in the streets, more is needed.

Personal hygiene
Most vendors were not observed to wash hand regularly, and rare with soap. Frequently they touch money and raw as well as cooked food while preparation and serving. Many vendors wore finger rings. The results from questionnaires support these observations and furthermore many who had received hygiene training only wash their hands sometimes. In the workshop the vendors again stress the same problems, such as difficulty in wash hand prober in the cooking center. Almost half of the respondent does not believe that it matters whether they touch the food during serving and cooking. A vendor explains in the questionnaire that it is difficult to prepare untouched food, which taste good. In interviews with customers we found that they prefer good taste more than good hygiene. They would rather buy from a place where taste is good although there is seen loose on hygiene.

Together with the results of food safety this again shows a good picture of practices, which greatly enhance the risk of introduction, growth and survival of potentially harmful bacteria and hence unsafe foods.

In the workshop the vendors also emphasize that they have to work even they are filling unhealthy and they find it is difficult to get medicine.

Regularly wash of hands with soap and clean water during the different activities is already a big step to make the hygiene safer. The vendors could for example have a list of things to remember in relation to keeping good hygiene. The list is supposed to inform the vendors in which situations they need to wash their hands and remember them to take of their finger rings during their work.
Food and quality
Vending in front of a busy road have a more dust and pollution around their stand. The water there is used to keep commodities fresh, in cooking, to wash hands and dishes are mention as unhygienic several times in conversation with costumers. The water situation is a very big issue if the water from the pumps around in the streets not is clean and safe.

Related to the results of what to look after when buying commodities it may skill that there is a lack of knowledge about what quality means, as they only replied that they are looking for quality, but not which qualities except from size.

Costumers also mention a issue with reusing oil of bad quality for long time and the food is add color which not is safe, but make the dishes look more appetizing.

An overall lack of food quality knowledge seems to be common among vendors, and before they stop using old oil and adding’s in their food they need to know what consequences it brings, it could help them make better food whit a better taste.

Hygienic Knowledge?

The street food vendors
The earlier hygiene training shows that things are not working even though a lot of hygienic problems have been issued more than once. However, our findings do not suggest an effect from education on actual safer food handling practices, such as frequent hand washing or making an effort to keep the cooking surroundings cleaner.

It seems like the vendors do know about right practices, both from our questionnaire and workshop, but it do not mean that the vendors are actually performing their knowledge in the real life. One example is from our observations shows that one vendor swept the gutter, where all waste is piling up. This may be because we stood there and the street vendor has knowledge about the fact that it should look clean and neat around his stall. Unfortunately, he took all the waste, and what else was in the gutter, with his hands and into a bucket. He washed his hands shortly after, however only for a few seconds, and also without the use of soap. This might show, that the street food vendors do maybe not practice what they are supposed to related to hygiene, because the practices are more time consuming and costs extra resources.

According to the model safety zone model each food stall should have a bin and every zone should engage a sweeper to clean the area. We have been observing and often walked in these streets including in the zones, but never seen a sweeper and unfortunately not even a bin at every street food stall. This shows
that there is a big problem in continuing to comply with new measures.

It is not possible to simply give vendors some tools in hope, that the hygiene is better for that reason. It requires cooperation with the vendors to get them to self-help to solve their problems. Workers at JGVK also told us that the target group of the developing project would get proud to develop own profession for the better. Therefore it is very important not to weigh something down on them, but instead get them to work together to improve hygiene. This must be done through workshops and training camps. They must understand the importance of improving hygiene towards themselves and their customers. This is their livelihood, which they with guarantee will do everything in the world for. This explains that they need to feel a meaning by their practices. The Government should provide some materials, which will make it easier for the vendor to practice good hygiene, but the vendor should also have been part of the development cycle. The selection of resources that will make it easier for the vendor to practice good hygiene, and the deeper understanding of why to practice hygiene, will give the vendor an acceptance of the importance of exercise it in practice. Vendors must believe that better hygiene and sanitation will lead to better health and better living.

The Government should also help the street food vendors – e.g. by providing clean water for everybody. When officials encourage rather than harass, the vendors are more likely to invest in carts that promote sanitation, attend sanitation training sessions, or health/parasite screenings. There is a limit, however, to what the vendors can achieve on their own. The cities themselves must provide sanitary facilities and water to insure minimum modern sanitary standards. In the Model Safety Zone Periodic check-up of vendors are mentioned as one of the improvements for street food vendors in a hygienic perspective. In our visit at IIT we were told that there might be some inspectors, but they do not check-up on street food, but instead at restaurants, hotels etc. This shows a lack of initiative from the Government site. Their impacts on hygiene improvements in Kolkata need to be upgraded in the goal towards better hygiene.

The Costumers
It is important for hygiene improvements also taking into account customers' knowledge. How should any improvement work, if the consumers do not know how to choose between good and bad hygienic products?

In this project the interviewed costumers were mainly from what we can denote as the middle class. The interviews show that the costumers have a good understanding of hygiene. Regarding hereto they are aware about the risk of eating street food. This does not prevent them from eating it, but at the same time they generally want “better” street food from a hygienic perspective.
If decisions from costumers are concisely for choosing a vendor a natural selection possibly will occur as either sort out the unhygienic vendors or it may force them to do better in the streets where customers are critical if they want to survive. The basis for vendors with poor facilities and hygiene can survive is, that many people are not privileged to be critical, in one simple reason that they do not afford it. But hygiene improvement must start somewhere and knowledge thereof will infect by other vendors and their customer segment and in the manner it will slowly raise standards at all levels of the society.

There are also costumers who do not know about hygiene and who need to be taught before hygiene improvements will effort all the vendors. In communicating hygiene it is important to keep in mind that perceptions of hygiene are not only rooted in microbiological reasons, but also draw heavily upon social, cultural and aesthetic values. We have to think about, that all people have a different background, upbringing, habits etc. We cannot just tell them what to do, what is right and what is wrong. They have to understand why, and the fact that it can improve health. People’s behaviour will only be meaningfully changed and sustained if people understand and believe in health concepts.

General knowledge of household hygiene is important because it shows how people generally think of hygiene standards. We were told that generally people from India thinks that a garbage can is disgusting because it is dirty - therefore it is better to throw it on the street. This is an example of knowledge needed in relation to, how the hygiene should be disseminated to the target group. Knowledge about their cultural and social understanding of hygiene concept will also lead us to a better solution to the hygiene problems that are important to address in relation to this particular target group: Find out how all people are practicing hygiene. Tell them what is right in their practices and next, the problems about them. This might lead to a solution, which will make sense to the target group. It is necessary to take reservation against what in reality is possible for the target group, exactly like the vendors. This way of communicating hygiene skills will in connection to the above provide, an understanding towards why it is necessary to change some practice.

**Make the hygiene visible**

An important aspect in improving hygiene is to make it visible to the consumers. First of all because the costumers then have the opportunity to choose hygienically and secondly because the vendors’ sale might went up if it is visible, that they perform good hygiene skills. This will thereby motivate the vendors in following the good hygienic practices. Even small improvements are still important in being visible to the costumers.
A way of making hygiene visible by the vendor is of course by promoting hygienic measures in the food stand.

Another way could be with help from the government by implementing a smiley system, as we know from other places in the world (Find Smiley, 2010). We will not go further into this kind of system, but it will require an effort from e.g. the government or maybe the HSS.

One of the costumers stated that it could be possible to have a price ceremony every year in respect to the cleanliness. There could be a price ceremony every year - a kind of an award. The cleanest vendor is the price winner. This will require same efforts as the smiley system above.

While making the improved hygiene visible, it is still necessary also to think about the quality and taste of the food as mentioned in the costumer interview. It is important not only to think about hygienic practices to keep costumers and gain profit.

**Atmosphere**

The mood and atmosphere around the whole street food sector is important to maintain. The relationship between the vendor and his costumer is an important aspect. The “close” relationship make the vendors accept hygiene training easier because, that the vendors feels like “housewives” who wants to give clean food to their family (BBC NEWS, 2005).

We had the same feeling on our observing. The businessmen and all the street vendors were so happy and nice against each other. They talked about many things, and on one of our observing with the help from a translator we were told that you actually get a friendship with the vendors. They ask you about your family and stuff like that. In that way it most also be paramount for the vendors that their costumers/friends do not get sick from the food.

The atmosphere may maybe also be ruined if the government are putting a Western stamp on the entire sector, e.g. it is impossible to find dosa in the street food sector in Park Street. The big problems can be caused by the big fast food chains, such as Mc. Donald’s, KFC, ect. If the relationship between vendor and costumer is distanced, the vendors might not feel the need to take care of their costumers in relation to; hygiene, taste and quality of the food.

**What can make it happen?**

First of all, it is necessary, that the National Policy on Urban Street Vendors 2009 will get implemented in Kolkata. Through this the street food vendors will gain acceptance from all levels of the society and avoid
police harassments. Legalization will make it easier to implement hygiene improvements, as street vendors will feel accepted in the street scene and thus might also feel an obligation to live up to a good standard.

In the hygiene theory we have included HACCP to show how good hygienic practices are obtained and controlled in the food sector in other countries. We have in our results found some points where the street food vendors need to improve their hygiene practices, which is also the first step in HACCP. Next we have tried to discuss how they actually can improve the hygiene which in some ways also a very similar to the HACCP concept.

It can be advantageous in many ways to implement a HACCP system in regarding to the street food sector. A possible goal for the hygiene improvements for the street food sector in Kolkata could be an implementation of a HACCP system. The system is recognized in a big part of the world, and could force the sector to grow bigger and maybe get into the international market. In that way it will also upgrade the whole society, also because of the fact that the vendors buy there commodities from the often very poor rural people, and in that way it maybe would raise India’s economy by improving economical situations in more levels.

**Conclusion (Jannie and Marie)**

Our studies show that the vendors actually have a reasonable understanding of hygiene but they still do not always practice their knowledge. The street food vendors’ express that it is due to lack of financial resources and facilities in pavement. Regularly wash of equipment and utensils, use of utensils while serving and preparing, use clean towels and proper hand washing are all good steps towards a better food safety and not especially costly improvements. Lack of these practices can be due to they are too time consuming. This explains the neediness of making it understandable for the vendors, why these practices are important. This could be done through hygiene trainings and workshops where the vendors are participating in the development. For example regularly wash can be improved by having a list of things to remember in relation to keeping good hygiene, as long as the vendors are comprehended with why it is necessary.

Economic concerns also limit the street vendors in some hygienic practices. Therefore some measures needs to be supported by the Government, but at the same time ensure that the vendors agree that the improvements are important.
Another perspective in hygienic enhancement is the costumer, because the vendors are depending on making profit. This aspect leads to that the costumers needs to know about hygiene like the vendors and for that reason it is necessary to make they hygienic practice visible for their costumers e.g. by a “smiley system”.

To obtain hygienic improvements mentioned in this project at the street food sector in Kolkata, it is first of all necessary that the National Policy on Urban Street Vendors 2009 will get implemented in Kolkata. This will legalize the vendors; they will feel accepted and proud of what they are doing and therefore also make them want to live up to certain hygienic standards. Beside this there are needs of better sanitation and the waste management have to be regulated by the government in the development of better hygiene standards in Kolkata.

A future goal of the hygiene improvements for the street food sector in Kolkata could be an implementation of a HACCP system, which could upgrade the hygiene in more levels of the society and thereby decrease illness and death caused by unhygienic food insecurity.

**Perspectives**

A lot of things are still going to be done in relation to improve the hygiene at the street food sector in Kolkata. First of all our findings can be discussed with people of influence of making these improvements. The key informants relation hereto can e.g. range our findings. It should range from what can be done now to what is the final target – like a HACCP system maybe. These key informants also have a better picture of what is possible to implement and what is not. These persons are also the ones who can make to project happen in reality. The key informants could besides relevant persons in India also include international organisations e.g. FAO and WHO.

Further studies with focus on the hygiene of street food vendors in Kolkata should also take into account where the street food vendors get their commodities from and the quality of them. The hygienic perspective should cover the whole food chain to be optimal, thus further studies should also look at hygienic aspects of the street food vendors commodities.

Another relevant thing in regarding to make further studies is, how to communicate hygiene knowledge to the target group. We have found some ideas on how to optimize the hygiene, but we have no competence in communication.
Knowledge and methods

Throughout project in practice, we mainly applied knowledge and methodology from our Bachelor’s degree and from the course Hygiene and Sanitation of our current MSc in Gastronomy and Health. Knowledge used from different courses is shortly described below.

Sociology and Anthropology

Used knowledge about social and cultural affairs in the Indian society. Analyzed actors, structures and processes in various social and cultural groupings and communities. For example, we looked at:

- Culture
- Food
- Consumption
- Training
- Health and Prevention
- Health and environmental concepts

Communication

Used knowledge and understanding of communication processes

Scientific theory and method

We have used quantitative and qualitative methods to critically assess existing studies within street food. Furthermore, we have planned, produced and processed data based on own empirical data and study design.

Hygiene and Sanitation

Our study is based on the use of different hygiene theory from the processing steps to the consumer.

Throughout the project process we have acquired professional skills in relation to the solution of specific tasks in a specific work area and action by translating theoretical knowledge into practical action through planning, implementation, evaluation, documentation and monitoring tasks.
References


- Hawkers Sangram Committee. STREET FOOD IN KOLKATA - MODEL SAFETY FOOD ZONE, Kolkata.


• WHO 2010. [Visited 01.04.2010]. Five Keys to safer food.
Part 3

Personal Learning Reflections

Marie:

The overall purpose of this project in a study context was to gain experience in applying different theories and methods in a specific context. Professional knowledge from Hygiene and Sanitation course has been highly relevant.

We have looked at cooking methods, types of food, quantities, storage, cooling and heating facilities, dishes, dishwashing opportunities, water access, toilet- and sink conditions, the presence of pests, etc. When these hygienic conditions where observed from an academic point of view we also had to find a method to do further research in a systematic way. The idea with using the four categories was our own and together with qualitative methods, I think it was managed to find a good orderly way to approach the work.

As a start in our planning we had the idea with inspiration from Rifkin and Pridmores *Partners in planning* to do some participant observations. Here we planned to work with the local vendors at their vending sites in some planned activities. In this way we thought we could observe what is going on and help us understand the vendors activities from their point of view. It could have been a fun experience and a good way to have insight in vendors’ everyday life. But things are sometimes turning out different from plans, especially in India. JGVK, the local NGO and HSC advise us not to do observation in this way. I have learned that it is difficult to use my professional knowledge in a completely different cultural context. In that way, I have gained experience in finding other possible solutions to the problems and use theory in a different context than usual.

The experience working with Innoaid, gave a great insight into the organization itself, but also a general insight to organizational culture and experience to collaborate and communicate between different professions and students from different educations within the same project was obtained. It has been great to use knowledge in practice to something constructive. Beyond the research I have spent my hygienic knowledge to advise on a new design of a chart so it is easy to clean and possibly cracks was avoid to prevent accumulation of dirt and bacteria.

Through the stay in Kolkata I obtain understanding of Indian food culture and the social and political
context that Street Food vendors are involved in. Furthermore a visit to Indian Institute of Technology in Kharagpur gave me a short introduction to the Indian study environment and insight in the social aspect of living on a campus, which is a small society of students.

During my stay I felt it was a personal challenge to succeed in such a different culture where people think and act very differently than we do. I obtain insight and knowledge of many unfair situations and circumstances, which was an overwhelming experience. Often I had a feeling of powerlessness against the many poor people we saw in the street pictures in many places. I learned that both patience and courage were important skills for success in development in a country like India. The Indian culture has in many aspects a very different logic than ours. After getting insight into this logic, it was much easier to move and carry out planned activities. In that way the project gave me great practice in communication and interacts with another culture. The local people who helped and work with us, were all incredibly nice and supportive despite the fact that they did not have many resources available. Further, we visited JGVK in Sunderbans. Here we got an insight into many of their projects. Although this was not directly relevant to our project, it gave us experience and insight into many things such as the Indian culture and why some act like they do. This background knowledge has been indispensable and influenced the whole course. Through JGVK I have obtained a good network, of which I can use in future studies and projects.

Jannie:

Travelling is living but in my point of view also learning. From my stay in India, I have primary been made clear how important it is to be adaptable in many situations. I refer to both academic and everyday situations. India is in many ways a very unstructured country compared to what I am used to from Denmark. This aspect is one of the most important skills that I have achieved in relation to the business project. From the beginning of the project there have been problems in connection with structuring in relation to have clearly defined objectives for the task. We were unaware about how the work could proceed in Kolkata. How should we live? Could we work in the residence? Who should we contact? Would we get some help during our stay? Etc. Professionally, I think that such experiences can be used in other situations in relation to future projects and work. It is important to continue working even if the plan is modified. Additionally, in future projects it will make benefits in trying to be more structured before any travel begins related hereto. Wasted time on the trip might be prevented compared to having a completely finished level
on the drawing board, which includes: meetings, interviews, employment, housing etc. of relevance to the project execution.

The above competencies may also be designated as general competencies. It is always an advantage to be adaptable for any situations and not panic because things are not running as expected. A country like India challenged you in many ways in relation to this competence and also in regarding to one’s patience. These two aspects cannot be separated in this country. Patience is often linked together with the changing plans. Lack of Internet, different working conditions and last but not least inhabitable temperatures is also important factors to take into account, which demands adaptability. The last mentioned had a big influence on my working ability, because it was extraordinary decreased in relation to the effectiveness of my work when I am in Denmark.

Another thing that I have learned is the different view that people from diverse cultures have on hygiene, and thereby also the complications in how to involve this aspect in the project and therefore how to communicate my knowledge about hygiene to people. This aspect is also connected to the professional insight I got in developing work. Projects like handling waste demands corporation from many different professions to be implemented in Kolkata. It also demands resources and willingness from the necessary people who has influence on if the project can be realized. It is also a fact that developing work takes time before any change will happen.

From my stay at JGVK I learned a lot about how important it is to make the target group participating in the developing work. We got the task to draw up their fishing brewing containers, so the people with the right profession, not staying in JGVK, could get an overview of the problems related to this project. One of the local told us everything about the project and also seemed very proud of it – this is developing work. From this perspective it will not improve any hygiene at the street food vendors in Kolkata if they are forced to use soap delivered by the government. They need to understand why they should use the soap, in which purpose and also relations. They need competences in this specific felt before the improvements can be integrated in the society and thereby getting sustainable. In the report this aspect is also mentioned, but I highlight it again in connection to the development of my own professional knowledge.

During all the stay I got a lot of knowledge about another culture, other ways of thinking and how life goes on without to much worries (my feeling) for people who are not as structured as we are in Denmark. It was very interesting to talk with people from India, and a lot of the knowledge I got from them and my expressions of the country are in many ways also included in this project. It was not always possible to
write down all data in a structured way (interviews, questionnaires etc.) as I have learned from my studies in Denmark.

The above description includes what and how I have obtained professional insights and general competences regarding to my stay in Kolkata and the business project. These insights can also be used in my own development in both connection with my profession and personality – two things that in many ways are correlated. By this the personal adaptability and overview can be very useful in my future professional practice.
## Appendix Table of Contents

Appendix 1: Pictures from Kolkata.................................................................48  
Appendix 2: Matrix of information we need..................................................51  
Appendix 3: Specified observation schedule.................................................53  
Appendix 4: Interview with costumers .........................................................56  
Appendix 5: Hawker Sangram Samity............................................................61  
Appendix 6: National Policy for Street Food Vendors.....................................62  
Appendix 7: Census of questionnaires ..........................................................63
Appendix 1: Pictures from Kolkata

Type of food:

Food safety:

Storage, treatment, covering of food:
Enviroment:

Pests:

Watersource:
### Appendix 2:

#### Matrix of information we need

<table>
<thead>
<tr>
<th>Category</th>
<th>Action (How they do)</th>
<th>Opinion (Their meaning)</th>
<th>Knowledge (What do they know)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Food Safety</strong></td>
<td>What do you do to make sure that your food is safe to eat?</td>
<td>What is the difference between safe and unsafe food in your opinion?</td>
<td>What could be done different to make the food safety better?</td>
</tr>
<tr>
<td></td>
<td>Do you do any thing to prevent your food from getting contaminated? (prevent the food from germs and dirt)</td>
<td>What are the most important things to care for to keep your food safe?</td>
<td>Which factors can contaminates food? (How can germs and dirt come into food?)</td>
</tr>
<tr>
<td></td>
<td>Do you separate raw and cooked food?</td>
<td></td>
<td>Other thing of importance related to food safety? (any needs?)</td>
</tr>
<tr>
<td></td>
<td>Do you use any utilises when you are preparing and serving food?</td>
<td></td>
<td>Why is it important to separate raw and cooked food?</td>
</tr>
<tr>
<td></td>
<td>Any safety practise that you would do differently if you had the opportunity?</td>
<td></td>
<td>What are the advantages of using utilises?</td>
</tr>
<tr>
<td></td>
<td>Any practise that are difficult to perform in your location? (Which and why?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Risk perceptions on food safety</strong></td>
<td>Have you ever had any health problems related to food yourself? (What can be done to avoid such situations?)</td>
<td>Do you have any problems in relation to risk perceptions?</td>
<td>There are many ways that germs can be introduced to food, can you tell some of them?</td>
</tr>
<tr>
<td></td>
<td>Any things you would do differently if you had the opportunity?</td>
<td>Do you think could help?</td>
<td>What can happen if vegetables are not cleaned?</td>
</tr>
<tr>
<td><strong>Cooling and heating facilities:</strong></td>
<td>How are the circumstances now?</td>
<td>Any ideas for changes?</td>
<td>Do you know any diseases due to unsafe food? (What diseases, why, what happens to people, etc.)</td>
</tr>
<tr>
<td></td>
<td>How do you store your food?</td>
<td>Any information you need?</td>
<td>Is it possible that the vendor him self can be a source of contamination? (why and how?)</td>
</tr>
<tr>
<td></td>
<td>Food preparation methods (how do you cook)</td>
<td>What are the best ways to learn more?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cool/heat several times?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Do you have problem with having optimal facilities?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Any practise that are difficult to perform in your location?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hygiene of environment:</strong></td>
<td>Which methods are you</td>
<td>The hygiene of the</td>
<td>Why is it important to clean?</td>
</tr>
<tr>
<td>Street food in Kolkata – A hygienic perspective</td>
<td>Project in Practice 400040, block 3, 16th April, 2010, KU LIFE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>----------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>useing for cleaning? (Any problems?)</strong></td>
<td><strong>environment of the stand,</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>How often do you clean your vending place?</strong></td>
<td><strong>What is important in your opinion?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>How do you do your dish washing? (any problems?)</strong></td>
<td><strong>Any ideas for changes?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Where do you get water from? (any problems?)</strong></td>
<td><strong>What could be done different?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Where do you go to toilet? (any problems?)</strong></td>
<td><strong>Any needs?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Where do you wash hands? (any problems?)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>How do you control pests? (Any problems?)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Why is it important to clean dishes?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>What is important about the water you use to cook?</strong></td>
<td><strong>What is important about the ice you use to cook?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Why is it important to manage pests?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **Personal Hygiene:**                          | **What is most important in your opinion?**             |
| **What are you doing to keep good hand hygiene?** | **Any ideas for changes?**                             |
| **In which situations do you wash hands?**    | **What could be done different?**                      |
| **How do you dry hands after washing?**       |                                                          |
| **Do you take of finger rings when you cook serve?** | **Why is it important to keep good hand hygiene?** |
| **Where do you wash hands? (any problems?)**  | **Why is it important to wash hands?**                 |
| **How do you control pests? (Any problems?)** | **Why is it important to dry hands after washing?**   |
| **Why is it important to wash hands?**        |                                                          |
| **Why is it important to dry hands after washing?** | **Why is it important to manage pests?**              |
| **Why is it important to keep good hygiene?** |                                                          |
| **What is most important in your opinion?**   |                                                          |

| **Food and quality**                          | **What are most important when you choose where to buy your commodities?** |
| **Where do you buy commodities?**            | **Is there anything that you would do different if you had the opportunity?** |
| **What are you looking after when you buy? (look, freshness, size, smell, colour, origin, seller, price etc.)** | **When you buy commodities, how can you decide if it good enough?** |
| **After having purchased the commodities, what are you then do? (how is it cleaned, treated, prepared, served and stocked?)** | **Why is it important to change your oil for deep fry?** |
| **How often do you change your oil for deep frying?** | **Are there any practises that are difficult to perform in your location?** |
| **Are there any practises that are difficult to perform in your location?** | **What are most important when you choose where to buy your commodities?** |
| **Is there anything that you would do different if you had the opportunity?** | **Why is it important to manage pests?** |
### Appendix 3: Specified observation schedule

<table>
<thead>
<tr>
<th>Category</th>
<th>Type of food vended</th>
<th>Food safety</th>
<th>Cooling and heating facilities</th>
<th>Hygiene of environment</th>
<th>Personal Hygiene</th>
<th>Food and quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor and location in Kolkata</td>
<td>Male Camac street chapatti</td>
<td>The dough was not covered totally. It was a dirty towel on the side of it, also used for the fingers. No utensils</td>
<td>Made the chapatti over a gas fire</td>
<td>A lots of dirty dishes, birds sitting around it and eat residues. They pump water from the ground, a place away from the vending place. The stand was covered by a parasol</td>
<td>Not wash hands. The vendor has a finger ring on.</td>
<td>Quality of water used for cooking/washing. Quality of the commodities, how they look.</td>
</tr>
<tr>
<td></td>
<td>Male Camac street Pucha</td>
<td>The commodities were not covered. The vendor mashed potatoes on the vending place when he need it.</td>
<td>The potatoes was cook from home.</td>
<td>The spicy water used to put inside, was made on tap water.</td>
<td>He did not wash hands between touching the different ingredients.</td>
<td>Quality of the commodities, how they look.</td>
</tr>
<tr>
<td></td>
<td>Male Camac street Chat (Chickpeas in a gravy)</td>
<td>Food was not covered. He did not touch the food Was heated over a gas fire. The plates were made of leaf, organic.</td>
<td>The stand was not covered</td>
<td></td>
<td>No using of utilises</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Smells</td>
</tr>
</tbody>
</table>

#### Male Camac street chapatti

- The dough was not covered totally. It was a dirty towel on the side of it, also used for the fingers.
- No utensils
- Made the chapatti over a gas fire
- A lots of dirty dishes, birds sitting around it and eat residues.
- They pump water from the ground, a place away from the vending place.
- The stand was covered by a parasol
- Not wash hands.
- The vendor has a finger ring on.

#### Male Camac street Pucha

- The commodities were not covered.
- The vendor mashed potatoes on the vending place when he need it.
- The potatoes was cook from home.
- The spicy water used to put inside, was made on tap water.
- No using of utilises
- He did not wash hands between touching the different ingredients.

#### Male Camac street Chat (Chickpeas in a gravy)

- Food was not covered.
- He did not touch the food.
- Was heated over a gas fire.
- The plates were made of leaf, organic.
- Not wash hands.
- Has a very yellow colour, may from the spice, but
<table>
<thead>
<tr>
<th>Street Food Location</th>
<th>Food Item(s) &amp; Accessories</th>
<th>Hygiene Details</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male Camac Street</td>
<td>Fried Vegetables cutlet</td>
<td>Was not covered, uncooked.</td>
<td>Very unnatural.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>They have raw uncooked food standing on the street side.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not touch the food with the hands before serving</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>The food was over cooked because of the heating</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>The stand has a sunshade</td>
<td></td>
</tr>
<tr>
<td>2 male College Street</td>
<td>Chapatti and different vegetables accessories</td>
<td>The dough under the table with a towel to cover. The pots have lid. They use a rolling pin and a knife to vegetables, but directly on the table</td>
<td>Vegetables look fresh. Dough look new and fresh</td>
</tr>
<tr>
<td></td>
<td>Fresh fruit</td>
<td>Pelled, in a showcase. Some water at the side to put over the fruit, so it look fresh.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>The showcase is closed when there are no costumers. No cooling</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Organic plate and wood stick to eat with. Garbage and plates is around the ground and drain.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wear rings. Touch money w. fingers. Touch fruit w. fingers. No hand wash. Dry his hand sometimes in a very dirty towel.</td>
<td></td>
</tr>
<tr>
<td>3 Male Acharya Jagadish Chandra Bose Road</td>
<td>Chapatti and different vegetables accessories, lentils, chickpeas and beans.</td>
<td>All pots have lids and all pots have a serving spoon. Table are dirty. Old and dry left over food are on the table. New dough</td>
<td>Bread fresh made. The rest are over cooked, and are not reheating all.</td>
</tr>
<tr>
<td></td>
<td>Bread are made in a Tandori oven. The accessories are served</td>
<td>Used plates stand on the ground in bowls. The clean plates stand on the ground. Cups and plates are cleaned in dirty water</td>
<td></td>
</tr>
</tbody>
</table>
### Street food in Kolkata – A hygienic perspective

**Project in Practice 400040, bloc 3, 16th April, 2010, KU LIFE**

<table>
<thead>
<tr>
<th>Location</th>
<th>Hygiene Issues</th>
</tr>
</thead>
</table>
| 1 female + 1 male Acharya Jagadish Chandra Bose Road | - Food was made on the street, just in front of a very busy road.  
- Cold.  
- Without soap.  
- Many flies around the place and on the table and food.  
- The sunshade didn't cover the stand.  
- No hand washing.  
- And very dirty hands with flour on.  
- 1 female + 1 male Acharya Jagadish Chandra Bose Road |
| Different bread, Vegetables, accessories, lentils, chickpeas and beans. Chicken and fish | - Only few pots have lids, chicken and fish was uncovered. Very dirty table. The rice look dirty. The dough look dusty, uncovered and have encrustation. Vegetables are treat directly on the ground. They are stored in an open box on the dusty road side. All pots have a serving spoon. Bits of food was sitting outside the pots.  
- The food are prepared from home and are kept in pots.  
- The pots are on shift heated on live coals.  
- Dishing water look very dirty. A lots of garbage around. Garbage in the drain stop the water from the whole street. A lot of crow sitting near the food; on the sunshade w. a opening down to the food, on the towel to dry hands. Under our observation they clean their drain, removing garbage and old food mud with bare hands. The vendor only rinse w. water and dry hands in the dirty towel |
- Smells of car smoke.  
- The bread look most inviting.  
- The meat look old and dry. |
Appendix 4: Interview with costumers

(Questions and answers)

How often do you eat street food?
- 1 to 2 times week
- 1 to 2 times week
- 3 to 4 times week. the same for me.
- Every ordinary day
- Everyday

What kind of food and what kind of places?
- Chaat, Puchka, Bhelpuri, Thalmnsi.
- Puchka, Chat.. ect.
- Often we buy at Russel Street, Mostly chaat.
- Puchka, junk food, drawbajii, fruits

How do you eat the food? (at the site/ take away/home)
- At the side
- At the side, some time I will bring it home.
- At the side
- Take away

Do you reheat food at home?
- No
- If it’s taken home then yes. It could be dangerous if you not do it.
- No
- No

Do you prefer it cold/hot? (search for perceptions of hot and cold foods)
- Cold, it is cold preparation
- It depends on what it is.
- Depends, they are most cold
- Cold, it is easy to eat. Eat if it is hot

Criteria for choosing a street food vendor:
What do you look for when you choose a vendor?

- Popular places
- I look for the place is clean, stuff around the cart and things like that. But the most important is the taste.
- We have known the vendor for years, now we know it is safe. It also depends on the taste
- About the food look yum or not

Do you eat at the same vendors, or do you shift? (why/why not)

- The same vendor, because of taste.
- The same vendors, when you know its good why those another.
- If we like some place we go there a lot. If food is not good I shift.

What preferences do you have when you choose a place to eat?

- taste, freshness, cleanliness, convenience, distance, time, price, safety, reputation.
- Nr 1 preference is the taste, it’s important that the food is tasty. The second is cleanliness.
- Not dirty and then the taste.
- taste, freshness, cleanliness, convenience, distance, time, price, safety, reputation.
- The taste is most important. It is quite hygienic in Kolkata

Eating street food or eating at home:

How would you describe the street food in comparison to the food you eat at home?

- Street food is tastier. Home it is more healthy and hygienic
- Street food is faster, you can have some food very fast. But it’ also risky, sometime it upset your stomach. The quality is low, especially the oil.
- Home it is nicer, much better. Street Food has change the flavor.
- Depends. Quality is better at your house.

For what reasons do you eat outside your home?

- The taste – more spicy
- With friends and family
- To try some different. But also when you hang out with some friends, it’s good as a snack.
- Social aspect, with friends and family. Never alone
- We are outside the house and street food is more tasty.

Food safety perceptions and behaviours:

Have you ever fallen ill from eating a certain food yourself or have you heard about anybody?

- heard about - it was diarrhoea
- Yes
- Yes, heard about. I once had at stomach upset.
- Many times. Fever and food poisoning.

Why do you think it happens?
The standard and the water they use
- It upset your stomach
- The water and the humidity, special in the rain season.
- The food have not hygiene

What can be done to avoid it?
- The vendor could use fresh material and clean water all the time
- Don’t eat outside your home
- Wearing gloves. Proper arrangement when they prepare.
- Use fresh material and clean water.
- Stop the vendors selling food on street.

What can the consumer do to avoid falling sick?
- Not eat outside, eating with clean hands.
- Don’t eat it
- Eat less street food, and know the vendor.
- Stop buying
- Have clean hands before eating, you eat most food with your fingers.

What can the sellers do?
- Hygiene maintains
- More hygiene, they could cover their food and vegetables. Also remove all their garbage.
- They don’t care. They will always survive because there are no big consequences for them if a consumer falls sick.
- Better quality of food and material

What is a safe place to eat for you?
- We know the place and go there
- Depends on the vendor. He have to wash hands often, the place should be clean
- Absolut hygienic
- Less crowded

Are there any foods that you do not buy on the streets because of the food safety?
- I don’t eat cut food and vegetables.
- I avoid curdprouducts, they get old faster.
- I don’t eat Dahl. And also trying to avoid oil, the oil is really bad. Bad quality. They reuse the oil for many things,
- Always avoid fruits and lime juice. You never know what kind of water they are using.

Do you consider any foods to be more unsafe than others?
- No
- No
- Not really. But deepfried and hot food are more safe than cold food.
- No
Which diseases can you get from eating street foods?

- Diarrhoea, jaundice
- The transmission could be in the water, hands and location with many people.
- Like I said before it can upset your stomach. You can have food poisoning and digestive problems.
- Stomach upset, food poisoning. The transmission could be from not clean equipment. Not fresh food,
- Sometimes the ingredients are rotten and they reuse food in several days.
- Diarrhoea, jaundice. The transmission could be the vendor him self

Explain cleanliness. What is clean to you?

- I look for the desk, the way the vendor selling it.
- Reuse equipment and stuff like this.

Food safety perceptions and behaviours:

What can consumers like your selves do to make sure that the food is safe for consumption?

- look out for facilities and ask the vendors
- We can do very little. But it is our decision which vendor we choose and I think the clean vendors have more costumers than others. But if the food is not tasty, people will not come even if it’s a clean place.
- Go the right places
- look out for facilities

Do you sometime give the vendors advice about how to cook and serve? Do customers usually do this? (Probe for reasons; why/why not)

- No... No personal education
- Yes, I do that. It’s very normal. Then you can have the food as you like it.
- Yes, Wash hands.
- Yes – lots of times. The way, the vendor prepare the food.

Knowledge on food safety and hygiene:

Where can people like your selves learn more about food safety and food hygiene?

- the media, health campaigns, schools
- I think on the internet. But there are not much. Like the campaigns you mention, it happen very rare.

What are the best ways to learn more?:

- “School campaigns”
- “I think in schools. Maybe. There could be a course in nutrition where you could learn about hygiene”.
- “Young people are concerned about health nowadays. Put hygiene signs on the streets”.
- “in the media and TV”
- “The media, TV... If they do not have I think the radio”.

Future:
Did you have any idea about what could be changed to make the hygiene better than now?

- Safe material, clean water
- In respect to the cleanliness, I think you may could have a price ceremony every year. A kind of an award, who is the most clean vendor, a price winner.

Who could arrange this you think?

- This organisation you work from could do it...
- Stop food adulteration

Any idea of what could give the vendors more motivation to use some extra time to upgrade their hygiene?

- Regular customers.
- Educate them. Give them more knowledge, so they could charge more.
- it's difficult because they do not have a capital
- Raising the price. People will pay extra. In shopping centers it's more expencive.
- I will pay double if the vendor have documentation on a hygiene knowledge
Appendix 5: Hawker Sangram Samity

What is Hawker Sangram Samity (HSS)?

Hawker Sangram Samity is a network of all major Hawker’s Union in Kolkata megapolice, built up 10 years ago in the midst of a struggle of all the Hawkers to resist the nefarious attempt of the Government to evict them from the pavement in the name of OPERATION SUNSHINE. Ultimately the HSS was successful in their resistance struggle in the road and in the court to arrest the government to take such a drastic decision, though in the meantime 18 hawkers committed suicide. From then and on HSS marched ahead from one to another victory.

National Hawkers Federation (NHF)
National Hawkers Federation took its birth in May 2001 under the main initiative of HSS. It is a federation of all hawkers association who are fighting against eviction throughout the country. Now it has 550 independent unions affiliated with 11 Central Trade Unions of the country. NHF has 11.25 lakh memberships as on date. It is one the largest federation of India. There is a major achievement of NHF to compel the Central Govt to adopt one National Policy on Hawkers. It still needs improvements. NHF has a major role in organizing and developing the International Federation of Hawkers and of other sections of urban poor. Under its able leadership South and South Asia Conference of street vendors organized in kolkata.

Future plans for Food Hawkers by HSS
HSS has made the following plans for street hawkers of Kolkata for their improvement:

To form one co-operative of their own. From that co-operative they can produce edible oil and other necessary products that can be used as their raw materials to improve the nutrition and quality of the foods. From that co-operative they can take small loan to purchase small water filters and other necessary utensils and covered boxes to keep the food covered from the dust.

To take initiative to establish more food zone in Kolkata pavements. By next 5 years of time HSS will be able to start hygienic food zones in almost all the important streets of Kolkata.

HSS has decided to set up a permanent training center for hawkers to teach them how to maintain the self-regulatory system. In this center it is estimated more than 6000 food hawkers can be trained in each year.

HSS will make a plan to open some whole night food park in some selected areas of Kolkata where it is needed for poor.

HSS is on the move to set up some kind of food shops in front of slum areas and other areas where downtrodden people lives and work throughout the day. In those shops it will be the effort of HSS to supply them the nutritional foods particularly to children.

HSS instructions to the Food Hawkers
HSS has given some strict instructions to its members. The volunteers of HSS are visiting the areas to monitor the following jobs

When food hawkers are selling their food to customers they should:

Ensure that the food is fresh, safe and must be in the standard quality.

Should not have any infectious diseases.

Must wash their hands before the delivery.

Must cut their nails regularly. It is preferable that there should be no ring etc. in hand.

Drinking water to be kept in covered utensil and that should cleansed with proper care.

Water for cooking and for wash to be safe.

The cooking utensils should be clean.

The dress of the hawkers should be clean.

The waste basket should be covered one.

The raw materials and cooked food should be kept in separate place.

The temperature of cooked food to be maintained properly (standard 63 degree C)

It is better to keep the raw materials of food in a cool place.

(Ghosh).
Appendix 6: National Policy for Street Food Vendors

Specific Objectives
The basic objectives of the policy are:
- **Legal**: To give vendors legal status by amending, enacting, repealing and implementing appropriate laws and providing legitimate hawking zones in urban development/zoning plans.
- **Facilities**: To provide facilities for appropriate use of identified space including the creation of hawking zones in the urban development/zoning plans.
- **Regulation**: To eschew imposing numerical limits on access to public spaces by discretionary licenses and instead moving to nominal fee-based regulation of access, where market forces like price, quality and demand will determine the number of vendors that can be sustained. Such a demand cannot be unlimited.
- **Role in distribution**: To make Street vendors a special component of the urban development/zoning plans by treating them as an integral and legitimate part of the urban distribution system.
- **Self Compliance**: To promote self-compliance amongst Street vendors.
- **Organization**: To promote, if necessary, organizations of Street vendors e.g. Unions / Co-operatives/ Associations and other forms of organization to facilitate their empowerment.
- **Participation**: To set up participatory mechanisms with representation by urban vendors’ organizations, (Unions / Co-operatives/ Associations), Voluntary organizations, local authorities, the police, Residents Welfare Association (RWAs) and others for orderly conduct of urban vending activities.
- **Rehabilitation of Child Vendors**: To take measures for promoting a better future for child vendors by making appropriate interventions for their rehabilitation and schooling.
- **Social Security & Financial Services**: To facilitate/promote social security (pension, insurance, etc.,) and access to credit for Street vendors through promotion of SHGs/co-operatives/Federations/Micro Finance Institutions (MFIs) etc.
Appendix 7: Census of questionnaires

Food safety

1. Is street food generally safe?

1 = Rarely safe and 10 = Always safe

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 (1)</th>
<th>6</th>
<th>7</th>
<th>8 (5)</th>
<th>9 (8)</th>
<th>10 (5)</th>
</tr>
</thead>
</table>
Total answers is 19

2. Is it easy to keep street food such as yours safe to eat?

1 = Yes and 10 = no

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3 (2)</th>
<th>4</th>
<th>5 (1)</th>
<th>6 (1)</th>
<th>7 (5)</th>
<th>8 (3)</th>
<th>9 (5)</th>
<th>10 (2)</th>
</tr>
</thead>
</table>
Total answers is 19

3. What do you do to prevent your food from getting contaminated? (prevent the food from germs and dirt)

- First wash the raw material and utensils and we keep them the food in closed containers. We also keep cooked foods in closed containers.
- Keep the food hot, covered, clean and give instant cooked food
- Keep the food covered and hot: xxx
- Keep the food covered, hot and clean
- Need to be hot and clean
- Keep the food covered. Keep the food well preserved. Clean the area.
- I keep my fruits in glass frame
- Keep the material clean and cool faster.
- Use only fresh fruits, uses plastic glasses
- Cover and heat it: (3)
- Food is covered to prevent it from dirt
- Cover and heat them repeatedly
- Plastic sheet (bag) in which the puris are bought. None else. (not to safe)
- Clean hands, momo's covered and put in steamer
- Put bread in wooden boxes

4. Why should raw and cooked food be separated?

   a) It is easy at the vending side: (10)

   b) The flavour would be affected

   c) To stop bacteria transfer: (9)

   d) Do not know

No answer (1) comment: No need to keep separate.

Total 21, 2 answer had 2 crosses.

63
5. Do you use any utensils when you are serving food?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>Sometimes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>(14)</td>
<td>(4)</td>
<td>(1)</td>
</tr>
</tbody>
</table>

Total answer is 19

6. Does it matter if you touch the food after cooking/ while serving?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>(11)</td>
<td>(8)</td>
</tr>
</tbody>
</table>

Total answer 19

Why /Why not

- Hand contact happens during pre-processing but claim hands are properly washed. After cooking foodstuff is hot and no more touching
- Because it could be contaminated : (10)
- to keep the costumer happy
- it might affect the hygiene
- hard to prepare untouched food which taste good
- Hygienic problem

Risk perceptions on food safety and personal hygiene

7. Is it possible to get a food borne disease if the food is cooked well?

a) No (8)

b) Yes, if it is contaminated after cooking (2)

c) Yes, if it is allowed to stand without heating for 5-8 hours: (11)

d) Do not know: x (1)

1 comment: use amul butter.

Total crosses is 22. (3 put 2 crosses)

8. Have you ever had any health problems related to food yourself?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>(4)</td>
<td>(14)</td>
</tr>
</tbody>
</table>

No answer: x

Total answer 19

9. What are common symptoms of food poisoning?

a) Headache: (2)

b) Diarrhoea / vomiting : (14)

c) Rash

d) Constipation xxx (3)

e) Do not know

Comment from no answer: (2)
- there is no such thing as food poisoning (Indians Rock!!)
- none of the above with my food.
Total answers is 19

10. How can food poisoning bacteria get into the food?
   a) Pests (insects, birds, rats and mice)  (1)
   b) Food handlers  
   c) From the air  (5)
   d) Raw materials  (2)
   e) All of the above  (11)
   f) Do not know

Comments:
- and water
- From dustiness and improper sanitation. There is no way for bacteria to enter into my foodstuff.
-also from the water

No answer: (1)
Total answers are 20. (1 put 2 crosses)

Cooling and heating facilities:
11. At which of the following temperatures can dangerous bacteria grow?
   a) – 10 degree C.  (1)
   b) 0 degree C.  (8)
   c) 35 degree C.  (8)
   d) 50 degree C.
   e) 65 degree C.
   f) Do not know  (3)
   No answer: (1)
   Total answers are 20. (1 put 2 crosses)

12. Hot food must be kept above which temperature?
   a) 73 degree C  (4)
   b) 63 degree C.  (12)
   c) 47 degree C
   d) 22 degree C
   e) Do not know  (3)
No answer: x
   Total answers are 20. (1 put 2 crosses)
13. How important do you think it is to reheat food if it is getting cold?

1 = Not important and 10 = Very important

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>No answer: xx</td>
<td>(2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total answers are 19**

14. Do you prepare big portions of food and reheat it several times?

<table>
<thead>
<tr>
<th>Yes</th>
<th>Sometimes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5)</td>
<td>(5)</td>
<td>(9)</td>
</tr>
</tbody>
</table>

**Total answers are 19**

**Hygiene of environment:**

15. How often do you clean your equipment?

<table>
<thead>
<tr>
<th>Every day after use</th>
<th>A couple of times in the week</th>
<th>Only sometimes</th>
<th>Not often</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>(18)</td>
<td></td>
<td></td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

comment: - and before use

1 no answer comment 5 times a day.

**Total answers are 19**

16. Do you wash your equipment and dishes with hot or cold water?

<table>
<thead>
<tr>
<th>Hot water</th>
<th>Cold water</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5)</td>
<td>(8)</td>
</tr>
</tbody>
</table>

No answer: (5)

Both: x (1)

**Total answers are 19**

Comment: - ambient temperature water, got from nearly buildings

17. Do you use soap?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>(19)</td>
<td>□</td>
</tr>
</tbody>
</table>

**Total answers are 19**

18. Do you use other cleaning methods?

NO: (16)
- no, just by water flushing
- use brick to clean the pan to remove carbon from baked food an apply oil to avoid rusting
- use scrot bile

19. What do you do with leftover food?
-Throw them: (10)
  - Fruits! Does not peel until demand is there. Use the unpeel leftover fruit the next day.
-throw them into dustbin: (6)
- Bread is given back to bakery for reselling
- Used it next day

20. Which is the best way to keep leftover foods in your opinion?

-We do not keep leftover food (12)
-No good way
- Take them and store them in home, at ambient temperature (fruit)
- cold storage: xx
- deep freeze, maximum 1 day
- keep it in cool water bath, and reheat it next day.
- keep food covered

Personal Hygiene:
21. How often do you wash your hands?

<table>
<thead>
<tr>
<th>Every time I have to touch different food</th>
<th>Before every new customer</th>
<th>Sometimes</th>
<th>Not often</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>(3)</td>
<td>(2)</td>
<td>(14)</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

Total answers are 19

22. Do you wash hands with soap?

<table>
<thead>
<tr>
<th>Yes</th>
<th>sometimes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>(18)</td>
<td>□</td>
<td>(1)</td>
</tr>
</tbody>
</table>

Total answers are 19

23. Do you dry your hands after wash?

<table>
<thead>
<tr>
<th>Yes</th>
<th>sometimes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>(18)</td>
<td>□</td>
<td>(1)</td>
</tr>
</tbody>
</table>

Total answers are 19

Comment: - Clean dry with a piece of cloth

Food and quality
24. What do you look for when you buy food ingredients? (Quality)

-Quantity (5)
-Lots of ingredients, in short see for fresh vegetables.
-Quantity and price
-Quantity and freshness: (4)
-Juicy and big sized fruits
- Best at quality: xx
- Fresh bread
-while buying lentils I ask the time of storage. Fresh vegetables
- try to buy fresh vegetables and chicken
- big sized potato (for potato stuffing)
No answer: (1)
25. How often do you change the oil for deep frying?

<table>
<thead>
<tr>
<th></th>
<th>Everyday</th>
<th>Twice a week</th>
<th>Once a week</th>
<th>Twice a month</th>
<th>Once a month</th>
</tr>
</thead>
<tbody>
<tr>
<td>(12)</td>
<td>(1)</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>(1)</td>
</tr>
</tbody>
</table>

Non, use amul butter
No answer: (4)

Others

26. Can you think of any practise that would make your food safer but is difficult to perform at your current location?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>Sometimes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>(9)</td>
<td>(4)</td>
<td>(4)</td>
<td></td>
</tr>
</tbody>
</table>

No answer: (2)

Which and why:

- Using more equipment like cooling stem, just in pavement
  we are not do it.

- Wants to have a more enclosed and safer eating. Need capital.

- Need better equipment: (2)
  - If I could use cooling equipment I could be better. But it is not impossible in pavement.
  - Use better equipment which I can not do at my location.
  - it is difficult to keep the pavement always clean

- If I can get capital, I will propose to open a big shop and make juice with electronic powered machines.
  - On the spot easy transport.

- Permanent structure

- Need permanent structure to keep food safe

- These are many things, but can not do it on pavement

- Use gloves but it might slow down work.

- Hot/warm water can be used to wash plates but might take time.