

Street Food Vendors – Food Safety Requirements

Prof. Indira Chakravarty, PhD, DSC

Chief Advisor

Public Health Engineering Department, Govt. of West Bengal

Member

National Drinking Water and Sanitation Council, Rajiv Gandhi National Drinking Water Mission, DDWS, Govt. of India

Board Member

United Nations University - IIGH

Ex-Member

Food Safety and Standards Authority of India, Ministry of Health and Family Welfare, Govt. of India

And

Former Regional Director, South Asia

MI, IDRC, Canada

Former Addl. DGHS, Director and Dean

All India Institute of Hygiene and Public Health, Ministry of Health and Family Welfare, Govt. of India

Former Director

Chittaranjan National Cancer Institute, Ministry of Health and Family Welfare, Govt. of India

Former Regional Advisor Nutrition(Act)

WHO, SEARO

INTRODUCTION

Definition of street foods as per the FAO of United Nations is - Street foods are ready to eat foods and beverages, prepared and / or sold by vendors and hawkers, especially in streets and similar public places. Dependency on Street Foods has been increasing over the years due to the following reasons like increased urban

migration leading to Population pressure along with no alternative food security which is as Fast, Tasty, has such wide variety at such low cost. Street foods have immense variety and encompasses both Traditional as well Fast Foods. It is also most affordable in urban condition and can function in a minimal space in crowded cities. It is convenient for working couples who have less time to cook at home as they have long working hours. For school children it serves as an attractive snack and for busy mothers it is a Supplement for the children nutrition. Lastly, for the young population it is also acts as a source of recreation and outing.

Moreover its Popularity as a job prospect cannot be ruled out because of the huge demand and as a matter of fact no formal training is needed to start this business. It has low start-up cost, is a source of regular earning where families can be involved and is interesting and innovative.

Certain **Improvements** have already happened in the Sector. Eg:-

- Better food processing techniques are available now;
- There are Better sale / display methods;
- Access to standardized raw ingredients (packaged) is there;
- Better cleaning and sanitation procedures are available;
- Customers are more informed;
- The Vendor is also more enlightened;
- There is much more access to food and environmental safety related information;
- Better and much more variety of raw materials – are easily accessible; and
- Increased competition leading to improvement among vendors/ food sellers.

However, **Problems** which continue or have enhanced are –

- Quality of ingredients are not standardized;
- Food and water handling methods are poor;
- Biological Hazards – Followed by chemical and physical hazards are common;
- Low Knowledge, Attitude and Practice (KAP) of Vendors;

- Hygiene of equipments – not adequate;
- Poor personal Hygiene of Vendors;
- Poor quality of Water being used;
- Waste management is not adequate;
- Recording of Food Borne diseases– not adequate;
- Consumer involvement is minimal;
- Negative attitude of authorities;
- Minimal legal control on Vendors;
- Penalty clauses are Minimal; and
- Coordination among concerned stake holders is very unsatisfactory.

The sector needs major inputs from several sectors and the **Major partners** who need to be involved are-

Government – Local and Federal, Municipalities, Police, Vendors, Consumers, International (WHO, FAO etc.) and National agencies, NGOs, Educational Institutions and all Others interested individuals and organizations.

AN OUTLINE OF SELECTED STUDIES CONDUCTED

1. The Calcutta Model supported by FAO of United Nations

This was A Scientific Study that eventually led to a City Plan of Action.

It received the prestigious First Eduardo Sauma award from FAO of United Nations in the 50th year of the United Nations in Rome in the presence of Agriculture Ministers of 172 countries.

The study covered following issues:-

- A scientific assessment – Existing situation in relation to Food safety and quality
- A detailed analysis to overcome problems.
- Strengthening of the existing management process.
- Develop a positive attitude among stake holders.

- Initiate capacity building of all stakeholders.
- Ensure implementation through improved technology, monitoring and constant involvement.
- Conducted with involvement of all stakeholders – Police, Municipality, Vendors Unions, Consumers and Peoples representatives and experts.

It had an **Advisory Committee** involving all concerned people as follows:-

- Chairperson :- Chief Secretary, Govt. of West Bengal
- Members :
 - ❖ Hon'ble Mayor-in-Council, Health, Kolkata Municipal Corporation
 - ❖ Commissioner of Police, Kolkata Police
 - ❖ Secretary, Dept. of Health & Family Welfare, Govt. of West Bengal
 - ❖ Secretary, Kolkata Metropolitan Development Authority
 - ❖ Jt. Secretary, Ministry of Agriculture, Govt. of India
 - ❖ FAO Representative in India & Bhutan
 - ❖ National Project Coordinator, All India Institute of Hygiene and Public Health (Member Secretary)

The study indicated that Kolkata had:-

- Approximately 1.20 Lakhs Vendors.
- There were Approximately 65 customers per vendor per day.
- There were about 2.5 personnel people employs per kiosk.

Baseline data generated covered following issues:

1. Demography :

- List of Vendors (Road / Area wise)
- Approximate number of customers per vendors
- Types of food sold
- Preference of food
- Timings (peak hours) of sale

- Cost of food
- Serving size
- Gender ratio of vendors
- Profit pattern

2. Existing facilities :-

- Water source
- Garbage disposal
- Surrounding environment
- Sanitary condition
- Pavement condition
- Type of kiosk

3. Social and Behavioural Attitude :

- Knowledge, Attitude, Practice of Vendors/Consumers
- Relationship of vendors with authorities
- Kolkata Municipal Corporation
- Kolkata Police
- Relationship with consumers
- Interpersonal Relationships

4. Laboratory investigations :

- Nutritive Quality
- Physical Quality
- Chemical Quality
- Microbiological Quality
- Hazard Analysis Critical Control Point [HACCP]
 - I. Food
 - II. Water

5. Environmental issues :

- a. Water Quality
- b. Water Usage Pattern (storage, use etc.)

- c. Traffic movement
- d. Pedestrian load
- e. Space available

The **Observations** in summery was as following

- More than 200 varieties (50 very common)
- Most Popular items - Coffee, Tea, Ghugni, Chapati / Paratha, Fuchka, Pulao, Idli / Dosa etc.
- Physical analysis of indicated nothing too alarming (Fig- 1)
- Chemical analysis indicated presence of non permitted colors like metanil yellow (Fig- 2)
- Microbiological analysis indicated high coliform contamination.
- Nutritive value of food satisfactory
- Very cheap - about 1000 Cals. in Rs.5/- (200 cal/ 1 Rupee)
- Very Fresh
- Extensive variety (caters to all tastes)
- Traditions foods with authentic taste
- Quick service
- Need minimum space
- Vary tasty
- A place of Social interaction.
- Food handling practices — Very Poor
- Water handling practices — Very Poor
- Kiosks — unplanned
- Placement — unplanned
- Garbage disposal — Poor
- Environment — Vary (mostly unsatisfactory)
- Technological knowhow's — Lacking
- Customers awareness — Low
- Knowledge of safe handling of food by vendors — Very Low
- Regulatory Process — No specific law exist
- Relation between authorities and vendors — $\bar{n}\bar{o}\bar{t}$ positive

HACCP of Street Foods was conducted to assess the point of contamination. For this the food were classified in 3 categories viz

Category I : Made as a cottage industry product

Category II : Prepared in vendors residence

Category III : Made in the street food stall itself

The results indicated that-

1. All three categories
 - are heat prepared
 - contract microbes during handling and storage
2. Degree of contamination is related to
 - Frequency of handling
 - Time and method of storage at the stalls
 - Quality of water used

Microbiological Investigation of **water**

The two following parameter were considered-

- Most probable number of coliform (MPN)
- Faecal coliform (FPN)

Following Estimate were done -

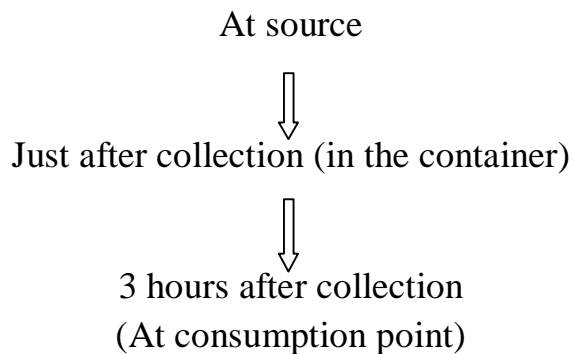
- *Vibrio cholera*
- *Salmonella typhi*
- *Shigella*
- *Esch. Coli*
- *Klebsiella pneumoniae*
- *Pseudomonas aeruginosa*
- *Proteus vulgaris*
- *Streptococcus faecalis*
- *Bacillus species*

The result indicated that

- Water is the major source of contamination of street foods
- All water samples had MPN (maximum probable number) and FPN (faecal coliform probable number) contamination at consumption points but were free from any contamination at source. (Fig- 4)

HACCP of water samples

The HACCP was done as per the following steps-



The results indicated that:-

- There was no contamination at source
- Contamination occurred after collection in containers
- Contamination increased with time.

Outcome

In summary the following results of the Calcutta Model can be highlighted-

- All vendors listed (Police) -- 1 lakhs 20 thousand
- Vendor Free zones (20 streets) identified – (Police and KMC)
- Identified hawking zones created - Camac Street, Theatre Road, Portion of A.J.C. Bose Road and S. N. Banerjee Road, Russel Street, Eastern Portion of Writers' Buildings, Lions Range etc

- Suitable Kiosks designed - (AIIH&PH, KMC, Police & Vendors' Unions)
- Kiosks to be placed 50 ft away from important crossings or bus stops - (Police and KMC)
- Only one side of the pavement allowed for hawking -(Police)
- Garbage Disposal facility improved - (KMC)
- Water supply improved in some areas - (KMC)
- Hawking not allowed in carriageways, bridges and flyovers, B.B.D. Bag area and area where Traffic and pedestrian volume is very high as well as where pavements are narrow - (Police and KMC)
- Washing of utensils not to be allowed on the pavements
- Illegal electric connection not to be allowed
- No generators to be allowed
- Hawkers can be removed from a specified area at any time, if required

Training and Motivation

Trainings were initiated at all levels by AIIH&PH with help of

- ❖ Police
- ❖ KMC and
- ❖ Vendor Unions

Outcome of the training included:-

- IEC material prepared for creating awareness among all stake holders (subsequently with WHO support) :
- Training certificates given to trained vendors
- Core group of Trainers developed from trained vendors - 3500
- Vendor's unions interested to ensure safe street foods on a long term basis.

Outcome

The Calcutta Model has been recognized by the Govt of India, Hon'ble Minister in Charge, Ministry of Health and Family Welfare, Govt. of India reported in parliament that-

This Act is not only about policing and creating a nuisance within the customers as well as the sellers or vendors of these foods but also creating awareness among the public as well as the vendors of street foods. We have held numerous workshops. In fact, we have had a coordinated meeting, for example, in Kolkata where the Police as well as Municipal Corporation Officials as well as the vendors of street foods were taken into confidence and a workshop was conducted. The issues on the safety of these foods, especially the water safety aspects were inculcated into them. Then there was a smooth functioning.

The Calcutta Model was shared:-

At International Level

- FAO Regional Centre of Excellence for Street Foods in Asia established at All India Institute of Hygiene and Public Health, Kolkata under a Principal International Coordinator
- Meeting at Kolkata for Mayors and Chiefs of Police of 13 Asian Countries (1996)
- Meeting at Kolkata for concerned Health and Research personnel of 10 Asian Countries (1995)
- Coordinated the FAO Regional Seminar on "Street Food Development" (13 Asian countries participated) at Bangkok (1999)
- Coordinated and prepared background document for FAO Regional Seminar on Feeding Asian Cities on Street Foods at Bangkok (2000).
- Mayor of Kolkata chaired Mayor's Council at the Bangkok meeting.

- As Consultant Prepared Plan of Action for management of street foods of South Africa (FAO of United Nations) - 2003
- Consultant with WHO (SEARO) on Street Food Management and Safety for SEAR countries (2004/ 2009)

At National Level

Subsequent Programmes were conducted based on this experience-

1. Model Street Food centers created by Vendors Unions in Kolkata.
2. Street Food Quality assessed in Municipal Towns by foundation for community support and development (FCSD)
3. Use of Improved Technology with support of MOFP, GOI
4. A Multicentre study conducted in 9 cities of India with supported of MOFP, GOI in coordination with sulabh international and FCSD
5. Inauguration of safe street food areas in 2009 by FCSD
6. Launch of a Safe Street Food Town – Howrah in 2010 by FCSD

Other National studies/ endeavours

Several other National studies conducted on street foods are summarized-

2. Pilot survey in sixteen cities by Ministry of Health and Family Welfare, Govt. of India (2006)

The salient outcome from of the study –

- Comprehensive database on street foods created
- Training manuals prepared
- The role of Govt., local bodies and NGOs were defined
- Video clipping and photographs with self explanatory pictures

3. Studies at Delhi and Patiala (2007)

Prevalence of enterotoxigenic organisms viz Staphylococcus aureus and Shigella spp.

4. Study at Pune, Maharashtra

Link street food vending to microbial contamination and disease transmission (linkage to 1981 cholera epidemic in Pune)

5. **Improvement of street foods in Kolkata using improved food processing techniques by AIIH&PH** – (supported by Ministry of Food Processing Industry, Govt. of India) - 2008

Identified better and safe technological options for preparation, storage and display of street foods.

6. **Improving management of street foods in Chennai** by AIIH&PH (supported by WHO) – 2008

In crowded areas of– Mylapore

7. **Launch of safe street food zone in Howrah and Burdwan town** by Foundation for Community Support and Development (supported by WHO) - 2008-09

8. **Nine City Study** in Agartala, Agra, Bangalore, Chennai, New Delhi (North and South), Guwahati, Jaipur, Kolkata and Mumbai by AIIH&PH, FCSD, ISSSO, CII and others (2008) (Supported by Ministry of Food Processing Industries, Govt. of India)

9. **Creation of Howrah as a safe street food town** – A multi stakeholder approach’ (by the Foundation for Community Support and Development (FCSD) supported by WHO – 2009

10. **Food Safety and Standards Authority of India (FSSAI)**

The authority formed 4 years back, has planned in standardizing the street food quality by creating several safe street food zone with the help of State authorities

KOLKATA DECLARATION ON STREET FOODS

A Meeting was held on Foods and Beverages Sold in Public Places, Organized by Food Safety and Standards Authority of India (FSSAI) And PHED, Govt. of West Bengal

On September, 2010, Based on the **new Act enacted on 5th August, 2011** for Street Food Vending.

Food Safety and Standards Act of August, 2011 covers following:-

Schedule 4 has described various provisions required for street food Vendors:

- Location and environment of Vending stall
- Vending Cart
- Water Supply
- Handling of food – Raw food
 - Cooking and serving
 - Storage of cooked food
- Personal hygiene of Vendors
- Drainage and waste disposal

Discussions were initiated based on the above. The **Recommendation** for the meeting was as follows-

On Policy Issues

1. The management of street food vendors should follow the line of intervention as indicated by the new Food Safety and Standard Act
2. Registration rather than licensing should be encouraged.
3. Special needs and requirements of the street food vending sector to be considered.
4. Implementable standards should be created.
5. Self auditing should be encouraged along with creation of an auditing mechanism
6. An International Regional Centre for Street foods should be created.
7. The FSSAI should form an independent coordinating unit.
8. Role of all concerned stake holders needs to be recognized
9. Positive approach at all levels among all concerned stake holders

10. Grading of street foods vendors
11. A nodal unit or window should be created at all municipal corporations and district authorities
12. The basic objective of making street foods safe and better-managed should be linked to a cleaner and safe city / village concept.

On Ground level implementation

1. Awareness generation, motivation, and training involving all concerned stake holders
2. Capacity building of authorities
3. Link to other programmes at field level for support and coverage
4. Improve existing food selling areas and Develop Food courts, Food selling zones etc
5. For developing an effective and positive control mechanism a system of registration / ID etc. should be put in place
6. Availability of safe and potable water of good hygienic standard and sanitation needs to be recognized
7. The waste needs to be properly segregated and managed.
8. Innovative technological options should be created for better safety of food, water and environment.
9. Health check up of vendors and linking them to diagnostic centres.
10. Laboratory facilities to monitor street food quality
11. Enhance the nutritive value.
12. Special attention for food sold near schools, hospitals, offices, terminals etc.
13. Include a system of monitoring and evaluation.
14. Involve Vendors, Vendor bodies, NGO's and consumers in awareness generation.

15. Create linkages with other Municipalities / Districts.

ACTION TAKEN BY THE BUREAU OF INDIAN STANDARDS ON STREET FOOD

BIS has released recently the Indian standard on this called “**Street Food Vendors – Food Safety Requirements**” on 12th Dec 2012.

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft was finalized by the Food Hygiene, Safety Management and Other Systems Sectional Committee and was eventually approved by the Food and Agriculture Divisional Council of BIS.

This standard is subject to the provisions of the Food Safety and Standards Act, 2006, and the regulations framed thereunder may be amended from time to time and also consider other related local regulations.

Most of the issues as recommended from the Kolkata declaration on street food by FSSAI, Govt of India and experience from earlier studies have been covered by this act, which cover following issue:-

1. Scope of the Act;
2. Various Definitions used in the act; and
3. Various Control Check Points for assessment.

1. Scope

This standard lays down control check points with minimum requirements which if exercised would ensure safe food to the consumer. It covers all mobile and fixed food vendors serving prepared/raw food for human consumption.

2. **Definitions** cover various sectors like:-

- i. Cleaning

- ii. Contaminant
- iii. Contamination
- iv. Disinfection
- v. Establishment
- vi. Food Hygiene
- vii. Hazard
- viii. Food Handler
- ix. Food Safety
- x. Food Suitability
- xi. Potentially Hazardous Food

3. The Control Check Point in the standard cover

- i. Quality of Inputs and Ingredients
- ii. Transport, Reception and Storage of Inputs
- iii. Vending Location
- iv. Vending Cart
- v. Utensils and Cutting Tools: Material of Construction, Cleaning and Storage
- vi. Hygienic Practices
- vii. Personal Hygiene and Habits
- viii. Food Preparation Cooking and Handling
- ix. Transport of Prepared Food
- x. Protection and Serving of Food
- xi. Handling and Disposal of Waste
- xii. Pest Control
- xiii. Training

CONCLUSION

In summery it may be mentioned that long years of labour and investigations done on street food have been eventually considered by this Standard created by the BIS. The intense interest of the Food Safety and Standard Authority of India, Govt of India (FSSAI) on this sector because of its critical relevance to Public Health and Nutrition is evinced by their effort to create a strong set of recommendation (Kolkata declaration- 2011) that has been well recognized by the BIS.

Based on this experience and administrative support the country can now build on it to improve the overall street food sector in a massive way so that the common man, who depend on street foods can benefit immensely. It is expected that improvement of this sector will not only enhance food safety and water safety but will also lead to cleaner urban, Peri urban and rural environment, specially in crowded public areas like Markets, hospitals, bus stands, stations, religious congregation , foot paths etc.

Since the sector also acts as a huge livelihood support for a large number of people, support to this is expected to enhance the overall socio economic situation as well.

FIG: 1

Physical Analysis of Foods

	Parameters	Observation
i.	Filth, Dirt, Dust	Not objectionable
ii.	Appearance	Attractive
iii.	Smell	Nothing incriminating
iv.	Taste	Tasty
v.	Eatability	No post consumption discomfort

25

FIG: 2

Chemical Analysis of Foods

	Parameters	Observation
i.	Ash	Not excessive
ii.	Argemone oil	Absent
iii.	Lathyrus sativus	Absent
iv.	Artificial colour	Melanil yellow used excessively
v.	Saccharin	Absent except in Sherbet
vi.	Arsenic, Lead Cadmium	Not detectable. Less than permitted limits
vii.	Aflatoxins	Absent

26

FIG: 3

Microbiological Analysis of Foods

	Parameters	Observation (% Sample)
1.	Standard Plate Count	Detected (100%)
2.	Coliform	Detected (86.66%)
3.	E. coli	Detected (56.66%)
4.	Yeast and Mould	Detected (93.33%)
5.	Salmonella, Shigella etc.	Detected (23.33%)

27

FIG: 4

