

MODULE 6

**REGULATION AND CONTROL
OF STREET FOOD QUALITY**

PLAN

TRAINING OBJECTIVE	97
KEY WORDS	97
6.1 STREET FOOD REGULATORY TEXTS	97
6.2 APPLICATION OF HACCP PRINCIPLES TO ANALYSE STREET FOOD HAZARDS	98
A. Phase of hazard analysis	98
A.1. Establishment of a detailed preparation diagram	99
A.2. Validation of the preparation diagram	99
A.3. Analysis of actual risks	99
B. Phase of determination of critical points and thresholds	101
C. Phase of surveillance and implementation of corrective actions	101
D. Phase of verification	101
6.3 EXAMPLES OF CRITICAL CONTROL POINTS IN STREET FOOD	102
A. Water	103
B. Raw materials and ingredients	104
C. Work materials and packaging	106
D. Food preparation, sale, storage and preservation operations	106
E. Vending practices and conditions	106
F. Premises	106
G. Food handler	107

TRAINING OBJECTIVE

The objective of this module is to familiarize street food handlers with the rules governing the sector and the basic notions to determine critical points in the chain of street food production, sale and consumption.

On completion of this module, the street food operators should:

- know the rules applying to the street food sector;
- know the factors of risk associated with street food and the critical points;
- understand the need to adopt preventive measures against the risk of contamination and to observe the rules governing the street food sector.

KEY WORDS

Contamination – Hazard – Disinfection – HACCP – Cleaning – Pesticides – Regulations

6.1. STREET FOOD REGULATORY TEXTS

Street food regulation and control varies widely from one country to another. Some countries have adopted legislation to regulate the preparation and sale of food but fail to consider the specific characteristics of street food. Other countries have no general regulation and street food control exists in the form of repression of offences and ad hoc regulatory provisions determined by local authorities or ministries as problems occur. Whatever the situation, it is important to note that street food should observe the fundamental regulatory principles that govern food in general. In particular, it should not harm consumers. But the real problem is applying the regulations, whatever these may be.

Where they exist, legal texts governing street food generally cover the following key aspects:

- requirements for authorization to exercise food production and sale activities;
- composition and presentation of food products;
- offences and penalties;
- institutions and officials responsible for food surveillance and control.

One of the basic principles in existing legal texts is that food production and sale is subject to prior authorization and official control.

Vendors/handlers have to complete administrative procedures and apply to the authorities for a vending site and permit. The application includes a medical certificate from the medical services approved by the Ministry of Public Health, evidence of vaccination against typhoid fever and cholera, and the results of medical and biological tests, including:

- analysis of faeces;
- analysis of urine and blood;
- analysis of sputum;
- skin test reaction (tuberculosis);
- an x-ray.

These tests are required every twelve months. Vendor/handlers need to be free of contagious disease, including tuberculosis. In some countries like Senegal, they also need a sanitary certificate from the same services confirming that their food production and sale premises are clean and conform with regulations.

The penalties specified in legal texts include:

- prison sentences;
- fixed fines that vary considerably from one country to another.

Depending on the case, infringement is punished by one or both of these penalties. Prison sentences are often for a few days only.

Operators have to pay daily fees, which vary according to the country. On the other hand, most street food operators do not pay income tax as they operate in the informal sector.

6.2. APPLICATION OF HACCP PRINCIPLES TO ANALYSE STREET FOOD HAZARDS

The HACCP (Hazard Analysis Critical Control Point) system is a general method applicable to all human activity and especially agrifood enterprises producing food for consumption. The HACCP system is a preventive approach to control the production and distribution of food and to make sure it is safe.

The aim of the HACCP system is to assure compliance with hygiene rules and the existence of regular, effective auto-control in street food preparation and sale activities in order to ensure food safety and protect consumer health. The system was developed for industry. It imposes systematic monitoring and recording of all activities. However, its principles can be adapted to the street food sector. Its great advantage is that it helps operators identify critical points in their preparation process and to concentrate on those points to avert contamination. Another advantage is that it helps inspectors grade the intensity of inspection for each stage of preparation, making inspection more effective.

Training and awareness raising for street food players should therefore focus on good hygiene practices (GHPs) and good manufacturing practices (GMPs). Applying the principles of the HACCP system to street food alerts operators to the need to prevent, to monitor potential hazards and to correct anomalies in four phases: hazard analysis, critical control point, monitoring and evaluation.

A. HAZARD ANALYSIS

A hazard is anything that threatens or compromises the safety or existence of a person or thing. It is characterized by:

- the nature of contamination or germs likely to be encountered in or on a food; each germ or group of germs is an agent of specific conditions and constitutes a hazard;
- seriousness, which depends on effects or expression and varies according to the analytical perspective: public health (infections, food poisoning and toxic infections) or commercial implications;
- frequency of manifestation.

The hazard analysis phase begins with a clear definition of the hazards sought. It requires:

A.1. A detailed flow diagram

This is a sequence of all preparatory stages. Each stage is broken down into its multiple constituent operations. This facilitates understanding and analysis of each stage or operation.

A.2. Validation of the flow diagram

The flow diagram needs to be confirmed by on-site inspection and compared with actual work operations. This ensures that all production operations have been identified.

A.3. Analysis of the hazards as such

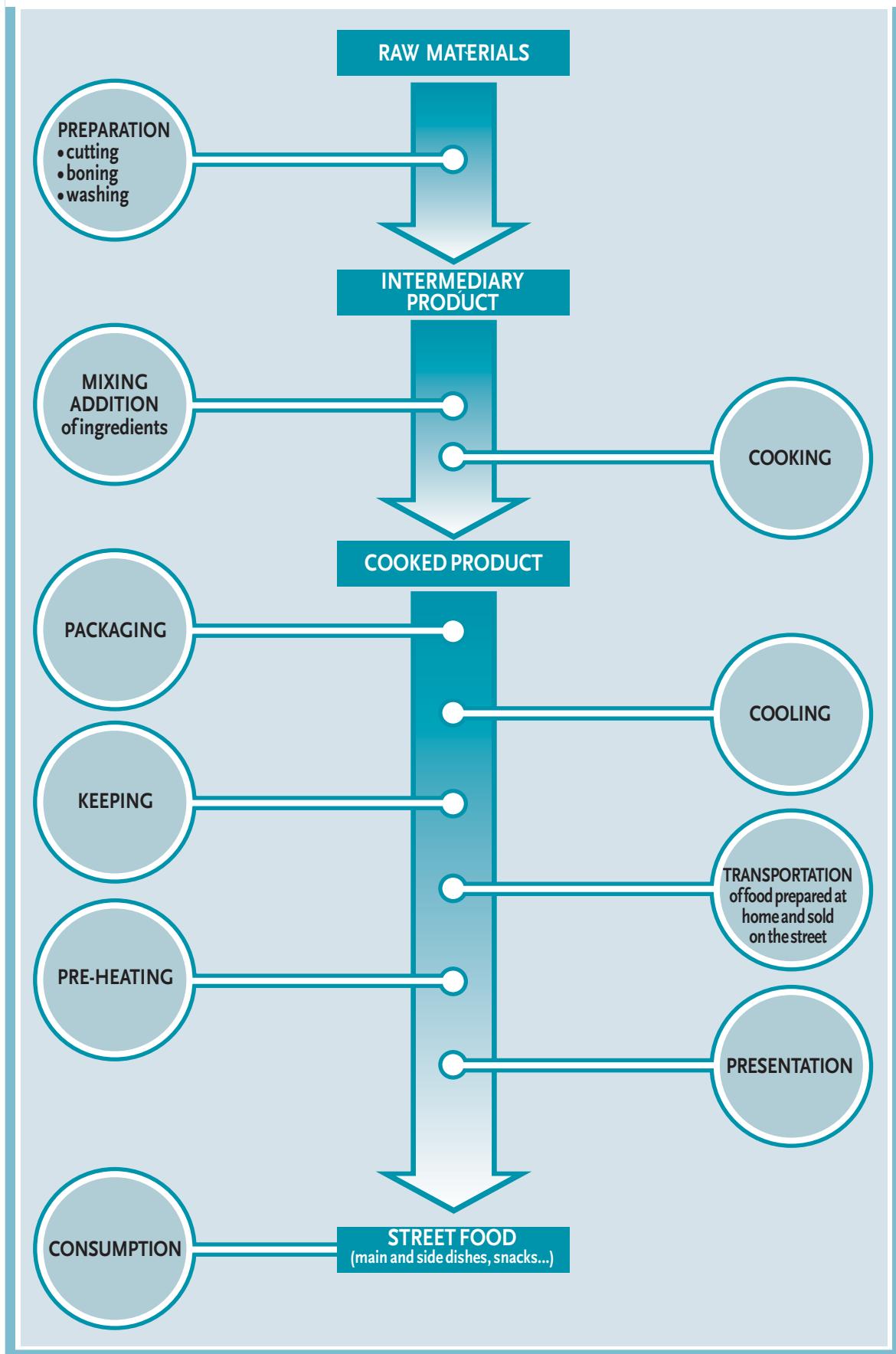
This needs to be supported by on-site inspection based on a “model” flow diagram adapted to all vendors/handlers of individual food product. It entails:

- ▶ identifying basic products of plant origin (vegetables, maize, sorghum, yam, cassava, etc.) or animal origin (meat, poultry, game, etc.), ingredients, and products that are hazardous or sensitive because they:
 - contain toxic substances;
 - contain microorganisms that are pathogenic and/or responsible for spoilage;
 - can activate or maintain microbial growth (composition, physical and chemical properties, packaging, etc.).
- ▶ determining the nature, biology and ecology of microorganisms;
- ▶ determining the consequences of variability of primary product on the quality of prepared food, its safety and the preparatory method used;
- ▶ determining the effects of surroundings and equipment (cooking appliances and utensils) on:
 - microbial contamination;
 - other risks (chemical, physical, etc.).
- ▶ determining the possibilities of survival and multiplication of microorganisms during the stages of food preparation, handling and sale.
- ▶ determining the responsibilities of street food handlers for contamination of food products. There is often regrettably:
 - an absence of training in personal hygiene and sanitary food preparation;
 - a low level of education among food handlers;
 - a failure to observe the basic rules of food hygiene;
 - a marked difference in personal hygiene and cleanliness of clothing among food handlers;
 - a high turnover of food handlers.
- ▶ identifying interactions between these elements.

This hazard analysis phase generates a list of hazards in each preparation stage and identifies the different hazard points. These are then assessed in terms of cause, consequence and gravity, as well as likelihood and shape of materialization. Some listed hazards are more serious than others. They are categorized according to:

- frequency and impact on consumer health;
- potential for control through good hygiene practices;
- nature of preparation process implemented: the possibility of subsequently eliminating the hazard during product preparation (e.g. long and prolonged cooking at the end of the preparation process serves to eliminate the bacterial hazard).

Example of flow diagram



B. DETERMINATION OF CRITICAL POINTS AND THRESHOLDS

A critical point is a point where a system can be introduced to reduce a hazard by calculated proportion, e.g. procedures to eliminate or reduce the presence of microorganisms (treatment by heat, cold, adjustment of pH, water activity – aw). Controlling hazards means controlling critical points so that resulting contamination is below a threshold (sanitary criteria, market standards). However, sometimes several critical points need to be controlled (processing and thermalization, etc.) to control a hazard.

The critical control point phase produces a formal selection of control options, in the form of rigorous specifications and operating modalities that are as detailed and precise as necessary for each critical point (cook at a certain temperature for a certain period of time, etc...).

C. MONITORING AND IMPLEMENTATION OF CORRECTIVE ACTIONS

With regard to the preparation and sale of street food, monitoring means ensuring the food preparation meets the criteria set by the inspection and sanitary control services during the preliminary study (through microbiological or toxicological analysis).

Depending on their expertise, food handlers immediately apply corrective actions when an operation becomes unsatisfactory. Such corrective actions are often traditional practices that are handed down generations and that determine culinary success.

D. VERIFICATION

This is equivalent to an audit of the HACCP system to ensure the safety of prepared food. Verification serves to determine the need for actions to improve food preparation conditions or actions to correct the HACCP system put in place. This level could help forge a new relationship between food handler and technical agent, especially national sanitary inspector responsible for hygiene in general, and food hygiene in particular.

LEARN MORE

There are two types of audit: implementation audit and situation audit whose principal objectives, scope and methodology are summarized below:

TYPE OF AUDIT	SPECIFIC "HYGIENE" OBJECTIVES	SCOPE	GENERAL METHODOLOGY
Implementation audit	<ul style="list-style-type: none"> ● Conformity of implementation with requisite conditions ● Conformity of food with requisite characteristics 	<ul style="list-style-type: none"> ● Identify weak points or shortcomings in relation to official regulatory provisions considered as reference provisions (or expanded to codes of good practices or to specific contractual requirements) 	<ul style="list-style-type: none"> ● Totality or part of the elements covered by the regulation (and codes of good practices and other requirements)
Situation audit	<ul style="list-style-type: none"> ● Description of activities and techniques ● Analysis of their relevance and effectiveness 	<ul style="list-style-type: none"> ● Effectiveness with which an organized system takes hygiene into account ● Validity of analyses conducted and measures taken 	<ul style="list-style-type: none"> ● Plan (or programme) of hygiene assurance ● Objectives, work instructions, control programme, records, verification of identified hazard points

6.3. EXAMPLES OF CRITICAL CONTROL POINTS IN STREET FOOD

Street food is exposed to different contamination hazards (microbial, parasitic, physical, chemical) that sometimes make that food dangerous for consumers; hence the need to assess and control potential hazards that could undermine food sanitary quality. Because of its rigour and systematic nature, the hazard analysis method is useful for adapting the implementation of required hygiene measures and for specifying critical points. Unhygienic conditions and practices that are conducive to risk apply to operators, consumers, street food premises and supplies and processed materials.

The hazards associated with food are many and various:

- unclean water;
- contaminated or poorly washed raw materials;
- dirty work materials;
- preparation and sale of food in unhygienic or inappropriate surroundings;
- use of unclean packaging;
- failure to protect food from external contamination;
- poor conditions of storage and preservation;
- use of a small number of pots and plates;
- unsatisfactory operator hygiene and health
- other unhygienic traits and practices of operators and consumers (poor personal hygiene, inappropriate clothing, improper conduct during food preparation, sale and consumption, etc.). The risks therefore exist at several levels.

The following chart presents the microbial dangers and preventive measures for pre-cooked foods.

Chart of microbial hazards and preventive measures for precooked foods

OPERATIONS	HAZARD POINTS	PREVENTIVE HYGIENE MEASURES	CRITICAL POINTS AND CONTROL PROCEDURES	CONTROL OF PROCEDURES	HAZARDS
Reception of raw materials	GI = RM	● Sorting		● Sorting method	All germs
Storage	GI = MT . L X = Eq . Me	● Separation of RM ● Maintenance	● Temperature ● Duration of storage	● 3°C-7j	Pseudomonas
Preparation	GI = RM.L.Eq X = Me	● Cleaning ● Disinfecting ● Personal hygiene	Correct dosage of acids	PH 4 ● Protocol for cleaning and disinfecting	Pathogenic germs
Cooking			● Temperature ● Duration	● 75°C-30min or boiling 30 mins	Pathogenic germs
Portioning and packaging	GI = RM.L.En	● Cleaning ● Disinfecting ● Personal hygiene	● Clean room	● Speed of laminar flows ● Personal and clothing hygiene	Psychrophilic germs
Cooling	X = Me		Speed		Thermophilic germs
Storage	X = Me . Eq		● Temperature ● Duration		Pathogenic and psychrophilic germs
Dispatch	X = Me	● Under cold regime	Anticipate the changing condition of precooked food		All germs

LEGEND

GI : Germ input **RM** : Raw material **Me** : Method
X : Multiplication **L** : Labour **Eq** : Equipment **En** : Environment

A. WATER

Hazards often arise from a lack of clean water for direct consumption, food preparation, washing of utensils or personal hygiene. In some areas operators have to use well or river water that is often contaminated, especially with bacteria. In areas with good clean water, food handlers often use that water inappropriately, resulting in its contamination:

- water for customer consumption or for the preparation of food and beverages is often kept in containers that are uncovered, dirty or difficult to clean;
- water for washing dishes is rarely hot. It is used several times and ends up with a high physical and microbial load.

Water is therefore a main source of contamination of street food. Agents of contamination are essentially microbial: coliforms, faecal streptococci, etc.

B. RAW MATERIALS AND INGREDIENTS

Purchases

When purchasing raw materials and ingredients, it is important to check the cleanliness of point of purchase and the appearance of the produce. Avoid goods that are unusually cheap as these are often substandard. For a constant supply of quality produce, it is important to build a regular network of suppliers who understand and respect food hygiene criteria. For processed goods, it is important to inspect the products, to check the labelling of raw materials and mandatory specifications (see Module 2, Section 2.1.D), in particular the best-before and/or use-by dates and storage conditions.

Controlling temperature at reception of chilled or frozen products is possible and is recommended where the means exist.

LEARN MORE

Controlling temperature at reception

PRODUCTS	RECOMMENDED TEMPERATURES
Frozen	-18°C
Fresh fish	+2°C, under ice
Raw minced meat	+2°C
Raw or other meat, poultry, rabbit, egg products, etc.	+4°C
Yoghurts, fresh cheese, cream, milk, butter, etc.	+6°C

Storage on reception

A number of principles should be observed to avoid contamination:

ORIGIN	PREVENTIVE MEASURES	TARGET	CORRECTIVE ACTION
Cross-contamination	Separate merchandise according to origin (vegetable or animal)	no mixing in cold rooms	<ul style="list-style-type: none"> check the distribution of merchandise increase the number of cold rooms unpack everything
Damaged goods	Make sure the merchandise is properly protected (wrap, cover, ...)	all the food products are protected	<ul style="list-style-type: none"> protect the food make personnel aware
Contamination from the ground or cleaning operations	Raised storage	no storage on the ground	<ul style="list-style-type: none"> move the produce make personnel aware

Defrosting

Using frozen fish or meat requires special measures, particularly during defrosting which is a delicate phase when contamination can occur.

- ▶ Preventive measures:
 - restricted period of use after defrosting;
 - labelling of defrosting products specifying start of defrosting;
 - defrosting in a cold environment, or if possible direct cooking of the product.
- ▶ Target values:
 - note the expiry date of the product;
 - protect the produce;
 - do not defrost at ambient temperature;
 - temperature of defrosting area below or equal to 3°C.
- ▶ Tolerances:
 - defrosting under running cold water for fish;
 - temperature of defrosting area up to 9°C.

C. WORK MATERIALS AND PACKAGING

Unclean or poorly washed materials used for food preparation, preservation, storage and distribution contribute significantly to contamination. **The use of dirty work materials is strictly forbidden as this affects food hygiene and endangers consumer health.** The use of unclean packing materials (plant leaves, recycled boxes and bottles, newspaper, cement sacking) is a significant source of food contamination.

D. FOOD PREPARATION, SALE, STORAGE AND PRESERVATION OPERATIONS

Street food can also be contaminated by chemical agents such as lead (from water pipes, welded can seams or air pollution), mercury (detected especially in fishery products), pesticides (essentially from phytosanitary treatment), veterinary products and unauthorized additives. Whether introduced intentionally or inadvertently into street food, most of these chemical substances have proved to be toxic.

- Preparation or sale of food in unsanitary surroundings:

When street food vendors/handlers set up their stalls in dusty surroundings close to piles of rubbish, wastewater discharge points and toilets that attract flies, mosquitoes, cockroaches, mice, etc., their products will inevitably be contaminated. The animals, insects and other impurities will act as vectors for an assortment of contamination agents.

- Failure to protect food:

Flies and other insects infest the vending site and transmit microbes and parasites to unprotected food on display. Poor conditions of storage and preservation facilitate the growth of germs, contamination and food degradation.

Food vendors generally have no refrigerator or deep-freeze to keep their food. Also, many products are sold after insufficient cooking. Few vendors keep their food permanently hot (60 to 65°C) until sold.

E. VENDING PRACTICES AND CONDITIONS

Certain inappropriate practices are also sources of contamination of street food:

- the use of too few jugs to serve water;
- poor operator hygiene and health;
- dirty clothing, no apron and poor personal hygiene;
- other unhygienic operator and consumer practices: handling food with bare hands during preparation and sale, tasting food directly from the cooking pot or serving bowl, etc.

F. PREMISES

- Risks of contamination:

Appropriate, well designed premises help operators in their work, but this needs to be rigorously organized for best results and reduced risk of food contamination.

If food products are not handled in clean premises or if the premises are narrow and make observation of hygiene rules difficult, the risks of food contamination escalate.

- Cleaning and disinfecting the premises:

Food hygiene in the cooking area requires clean surface areas. The complete premises and

equipment can be contaminated by inoffensive or dangerous germs during the work period. It is essential to clean and disinfect the cooking area and equipment to prevent microbe breeding grounds.

► Preventive measures:

The food preparation area needs to follow two basic rules: separation of preparation activity by sector and a forward sequence. Clean food should never cross unclean food.

- Separation of preparation activity by sector: this means keeping clean sectors separate from unclean sectors. This rule serves to anticipate and thus prevent food contamination by averting the risk of microbial growth. Where distinct zones are not possible, there can be separation in time, in the sense that different operations are carried out at different times, interspersed by cleaning and disinfecting.
- Forward sequence: from reception to consumption, food should move forward into an increasingly clean environment. Clean food should not cross unclean food. Raw food should never come into contact with cooked food, including through utensils (cutting board...).

GOLDEN RULES

To reduce the risk of microbial contamination of food, it is important:

- to avoid crossing clean with unclean;
- to avoid moving products back into unclean areas;
- to store raw materials upstream from production areas;
- to adjust the organization of work to mitigate the constraints of non-conforming premises.

G. FOOD HANDLER

Health of the food handler

► The hazards:

Human beings naturally host a wealth of microbial flora on their skin and in the nose, mouth and digestive tract. This flora has inoffensive germs but also germs that are potentially harmful, known as pathogens. Persons carrying those germs can be continuously sick (infected eczema, etc.) or occasionally sick (whitlow, etc.) or may not display any visible symptoms (in which case they are healthy carriers, often releasing germs in a discontinuous and unpredictable manner).

Kitchen personnel can therefore be a primary source of food contamination through pathogenic germs.

► Preventive measures:

- for medical surveillance, a doctor's visit once a year is recommended;

- for the prevention of contagion: sick or injured persons (colds, wounds, burns, etc.) should stay away from food handlers; in the case of injury in cooking area, a waterproof bandage should be applied.

Personal hygiene of the food handler

► The hazards:

Poor personal hygiene can be a source of food contamination during handling, transmitted by hands, badly kept nails, hair or body hair.

► Preventive measures:

Frequent hand washing and bathing;

- hands should always be kept clean;
- no jewellery or watches should be worn in the cooking area;
- nails should be kept short and without varnish in the cooking area;
- regular visual inspection of all personnel.

Cleanliness of handler clothing

► The hazards:

Personal clothing (particularly shoes) are vectors of contamination from microorganisms brought into the work area.

► Preventive measures:

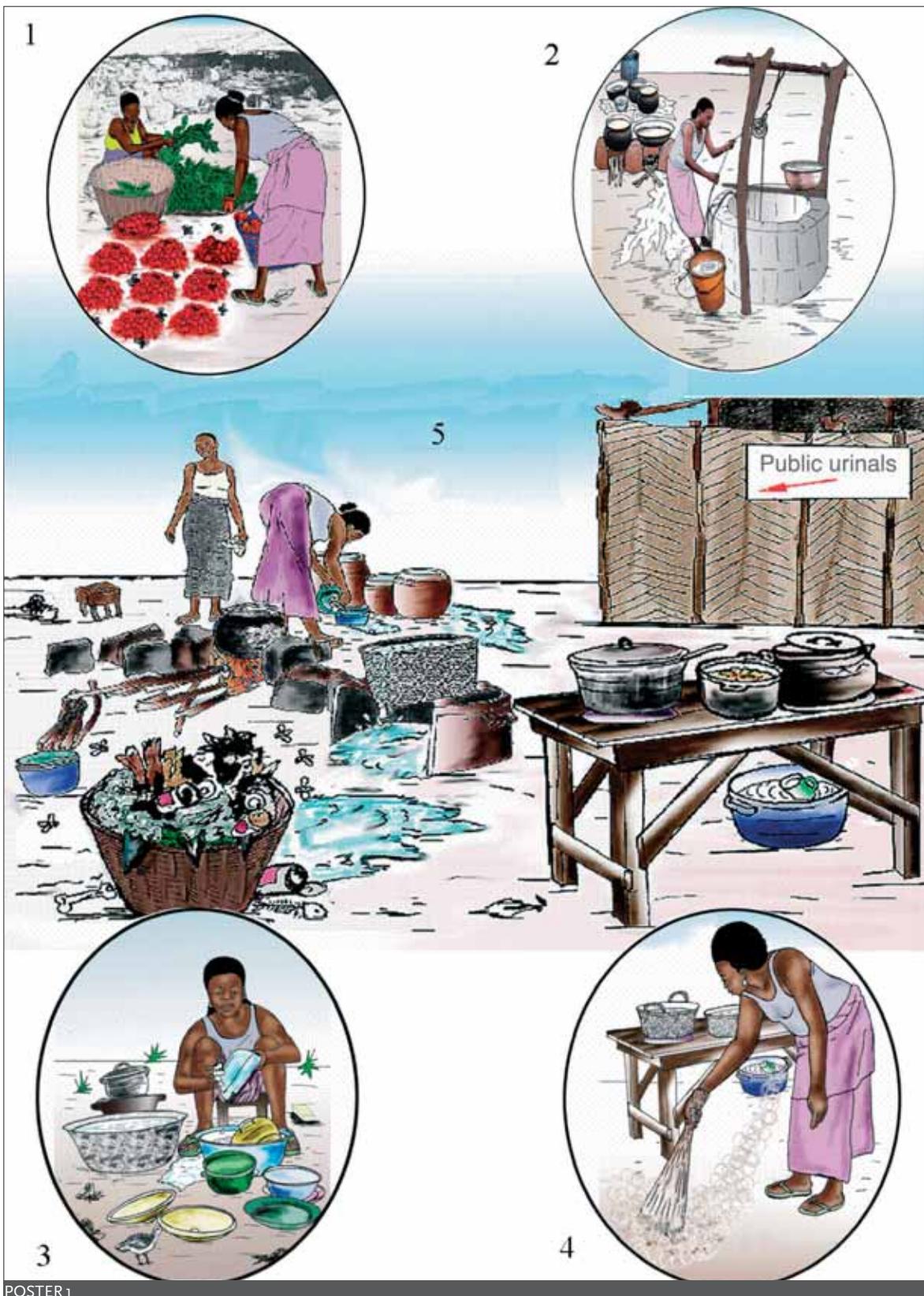
- use occupational work clothes;
- regularly inspect all personnel;
- carefully inform and sensitize personnel.

GOLDEN RULES

- Watches, bracelets and rings prevent the thorough cleaning of hands and forearms
- Assured food safety requires hand washing, which should become automatic.

Exercise 6

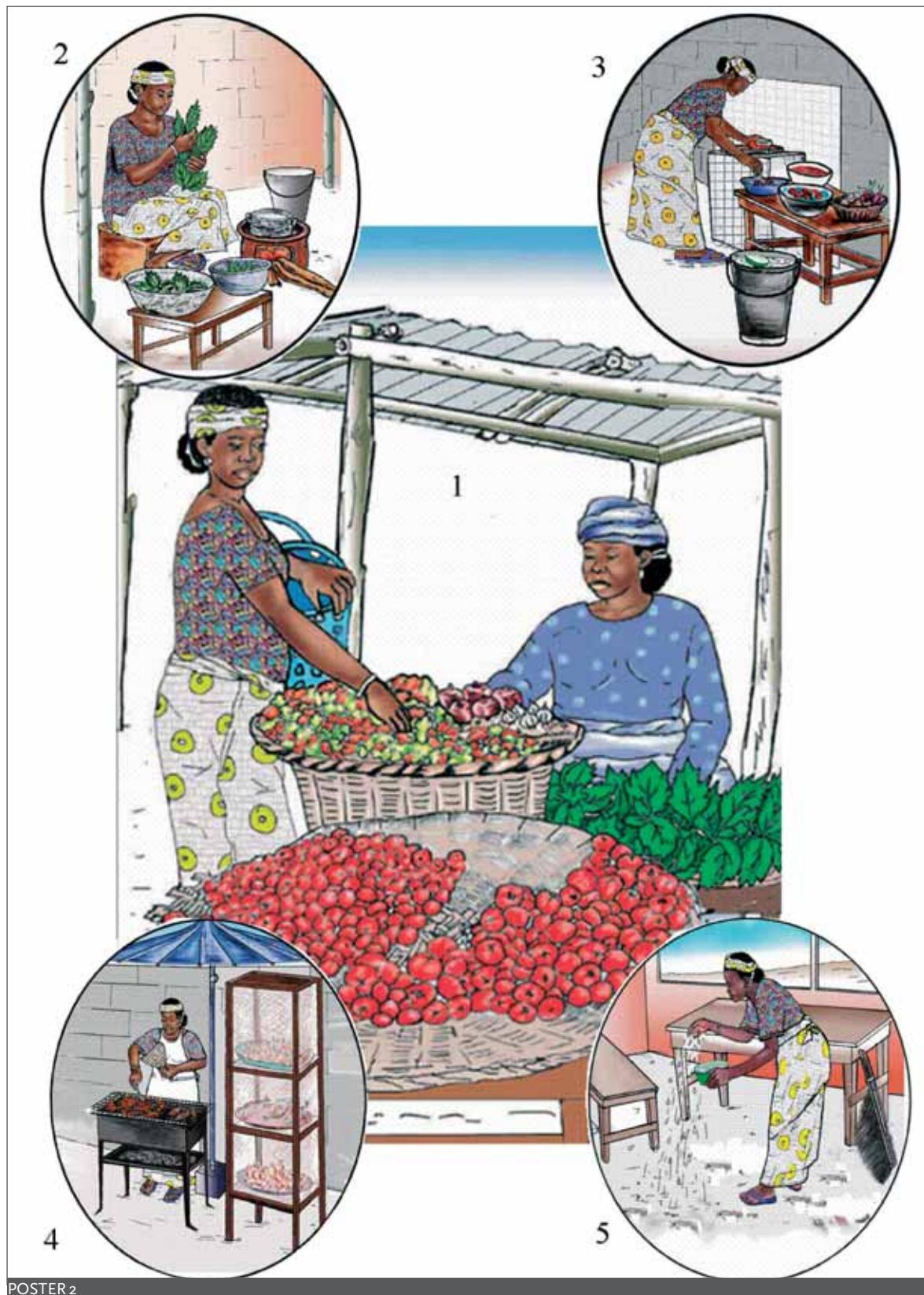
1. What actions and measures need to be taken before operating in the street food sector?
2. What are the main factors of risk that facilitate contamination?
3. What are the critical control points in the HACCP system applied to street food? Illustrate with a precise food example.



POSTER 1

HYGIENE OF FOOD PREPARATION AND SALE POINTS: UNSANITARY PRODUCTION

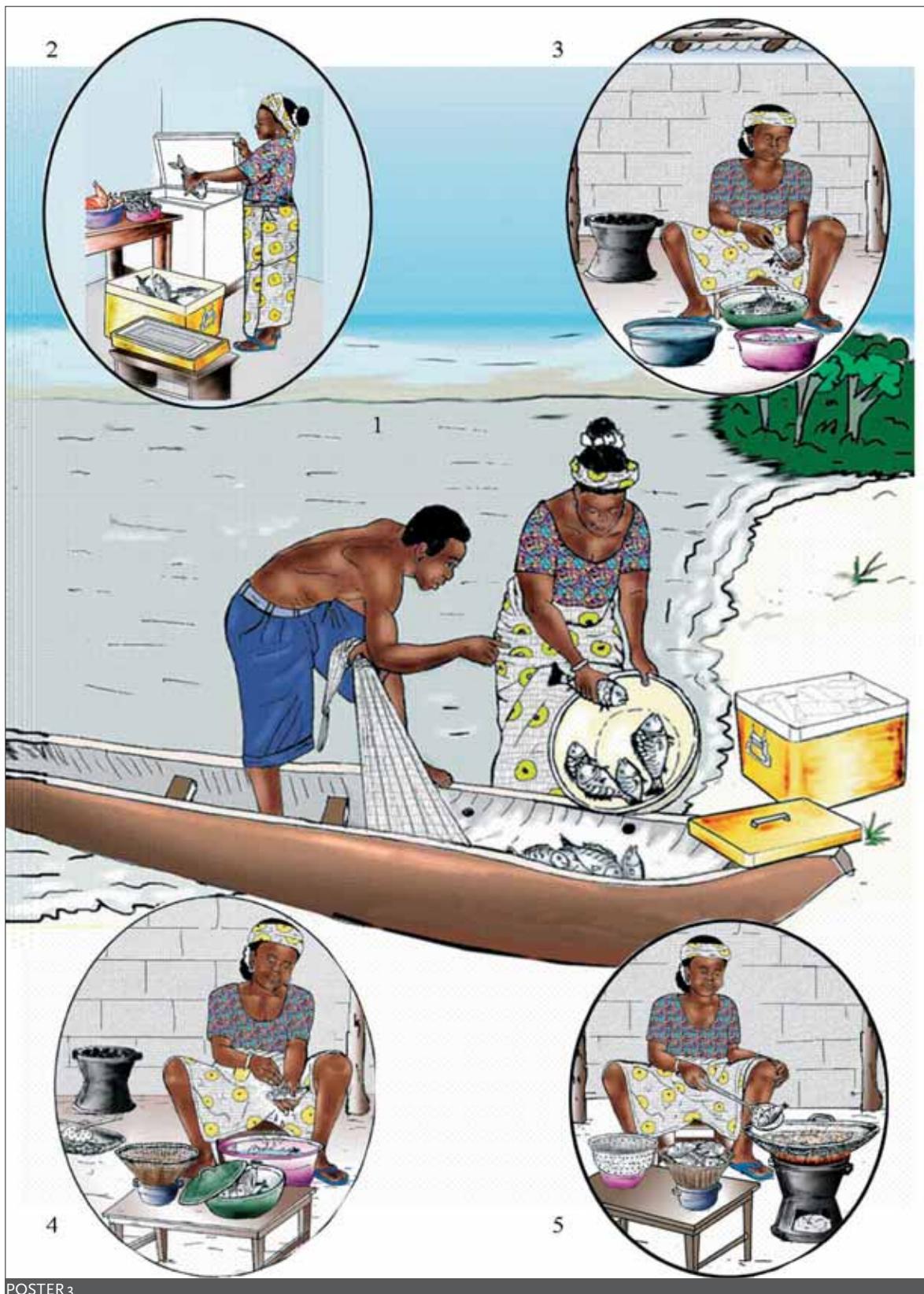
Handling food in unsanitary surroundings is a source of microbial contamination.
(practice to be discouraged)



POSTER 2

HYGIENE OF FOOD PREPARATION AND SALE POINTS: CLEAN SANITARY PRODUCTION

I keep my food preparation and sale area clean to avoid contamination
of ingredients, raw materials and food
(practice to be encouraged)



POSTER 3

PROCURING FRESH FISH, COLD STORAGE AND CAREFUL PREPARATION BEFORE COOKING

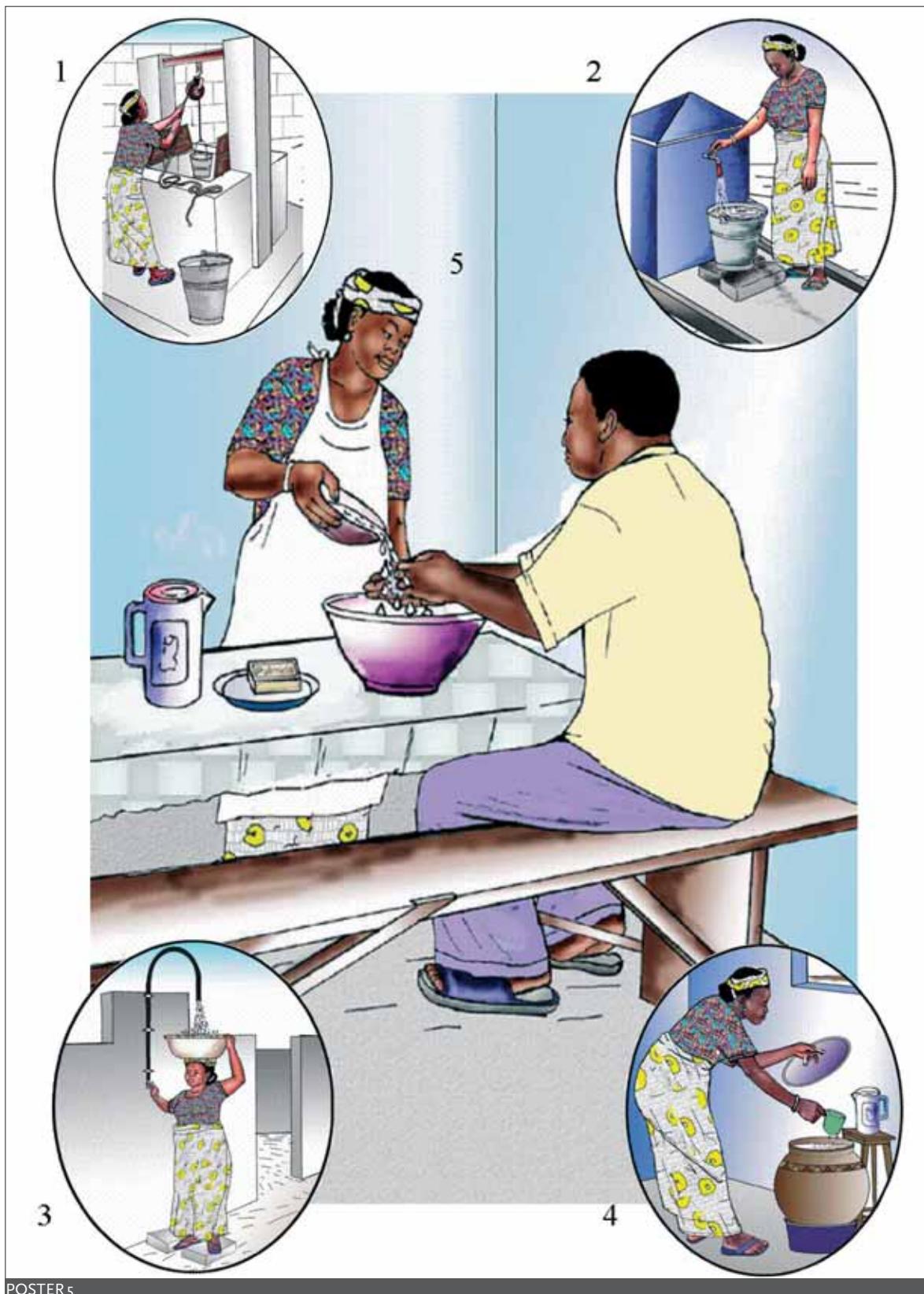
To conserve the quality of fishery products and meat, maintain the cold chain from purchase to use and carefully prepare before cooking
(practice to be encouraged)



POSTER 4

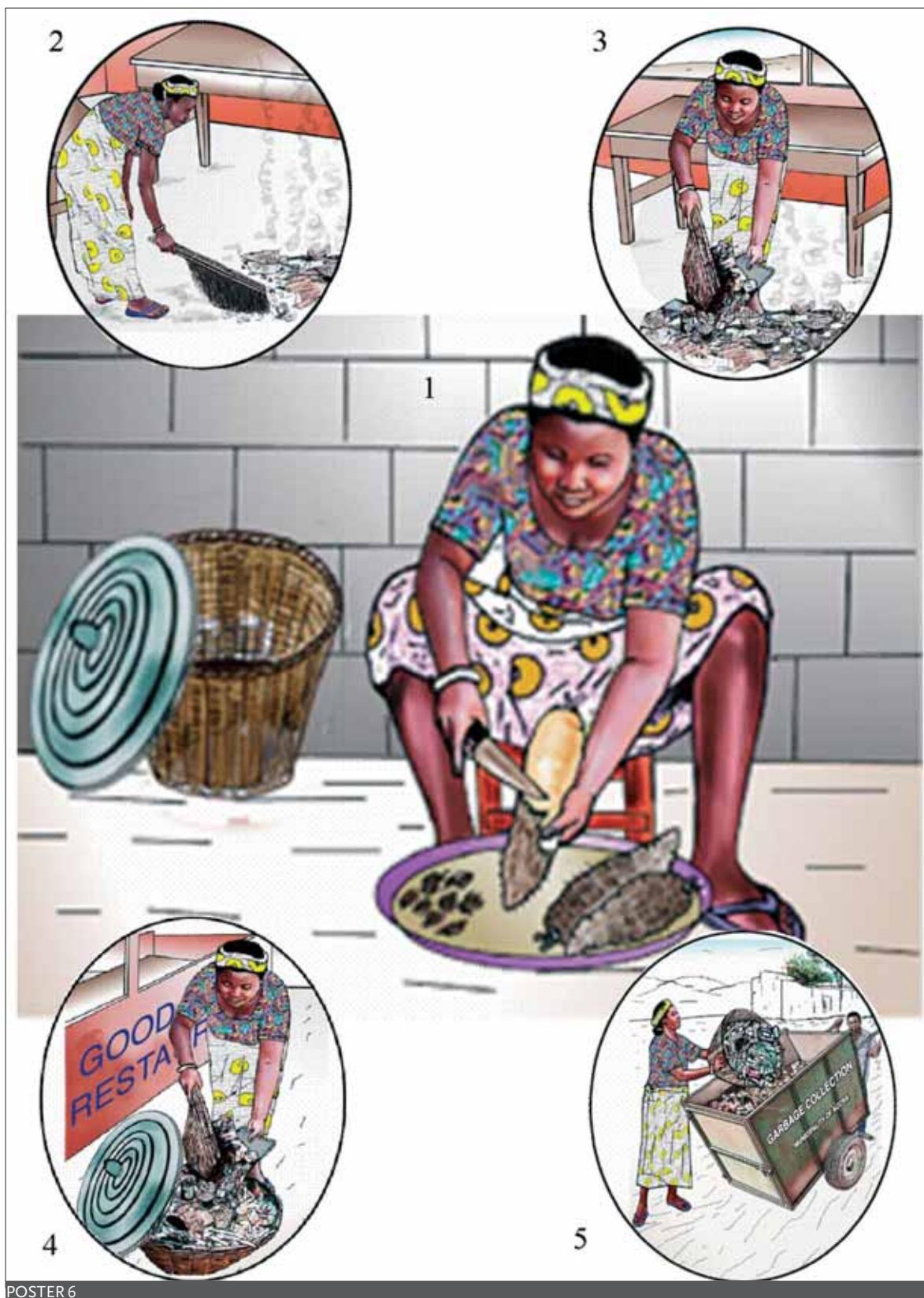
UNSANITARY PRACTICES AND HABITS

To limit microbial contamination, I avoid unhealthy practices and habits at the point of food preparation and sale (**practice to be encouraged**).



GOOD MANAGEMENT OF DRINKING WATER

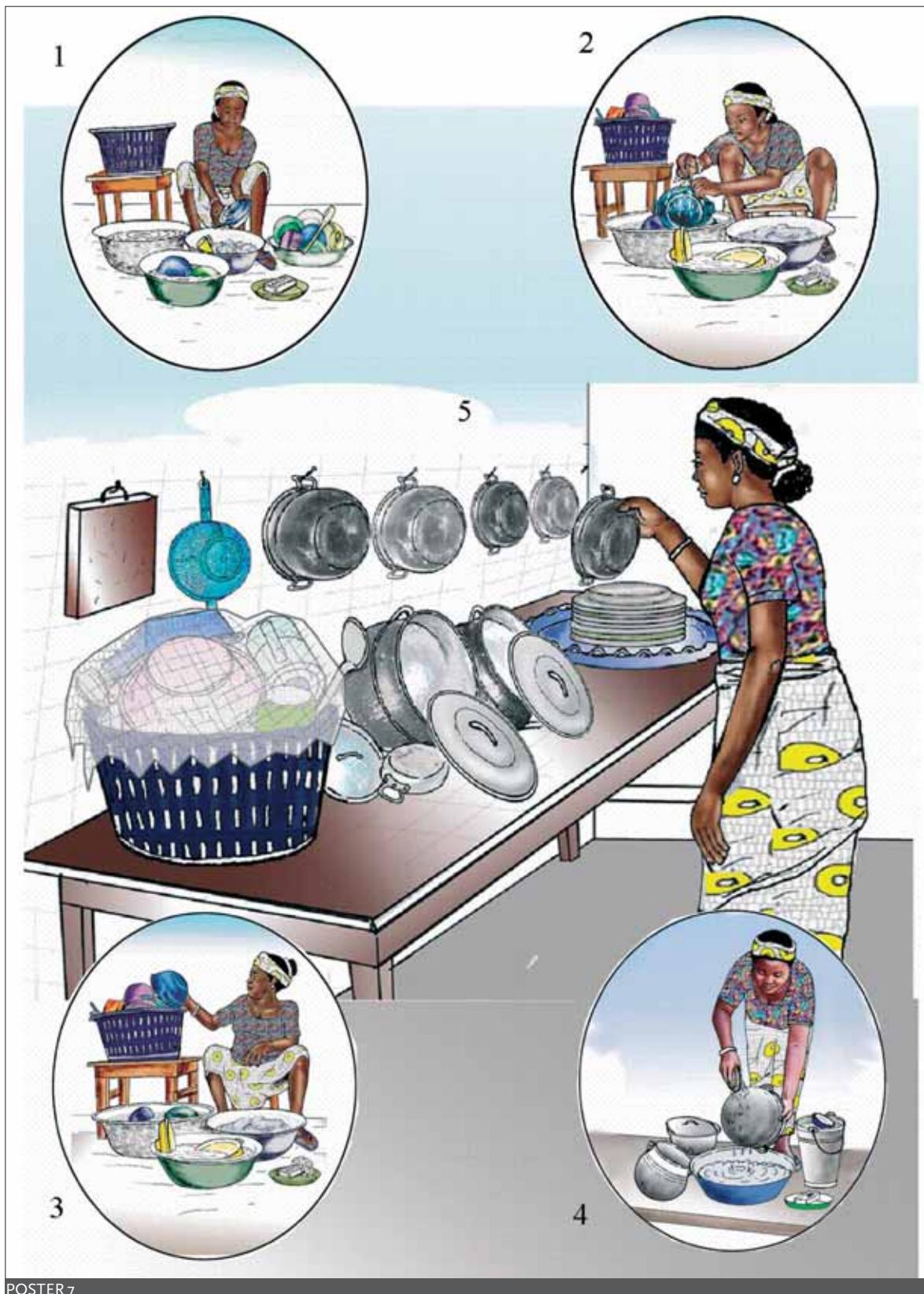
I collect the water I need on my food preparation and sale premises from safe sources
and manage it with care.
(practice to be encouraged)



POSTER 6

GOOD WASTE MANAGEMENT

When preparing food, be sure to put your rubbish in a covered dustbin which you empty it at the end of the day into the municipal refuse container (**practice to be encouraged**).



POSTER 7

WASHING, CLEANING AND ORDERING DISHES

To avoid microbial contamination, I always wash up in sanitary surroundings and carefully order the washed dishes and utensils.
(practice to be encouraged)

Section II

SECTION II

PLAN

1.	NOTES TO TRAINERS	120
	1.1 Pedagogical approach	120
	1.2 Glossary: definition of key words	124
	1.3 Answers to exercises	127
2.	ILLUSTRATIONS AND POSTERS	132
	2.1 Presentation of illustrations and posters	132
	2.2 Adaptation of illustrations and posters to local contexts	139

1. NOTES TO TRAINERS

1.1. PEDAGOGICAL APPROACH

A. INTRODUCTION: CONDITIONS FOR SUCCESSFUL TRAINING

Your role in training street food players to adopt good hygienic practices is crucial. You will need to convey to them the vital notions needed to initiate a process of behavioural change.

Behavioural change is a long-term process. It is not immediate, nor constant. It is gradual and comes from a long period of learning.

To help street food handlers change their behaviour, you will need to dialogue with them and build an interpersonal relationship of trust and credibility. That is the purpose of these "Notes to Trainers".

A.1. BASIC NOTIONS IN COMMUNICATION

For the trainer, communication is a way of transmitting to an individual, or group of individuals, knowledge or know-how that will serve to convert harmful social behaviour into favourable social behaviour, such as the application of recommended hygiene practices. The trainer will communicate successfully if he listens to his street food interlocutors and discusses with them how best to resolve the problems they encounter.

A.2. INTERPERSONAL COMMUNICATION

Communication is between two or several persons. It serves to relay a message which is information that the trainer (the transmitter) sends to the listener (the receiver). The response or reaction of the receiver is the feedback. Thus, the main elements of interpersonal communication are transmitter and receiver. The transmitter is the person who initiates the communication. He has ideas, experience and knowledge that he wishes to share with his listeners.

The role of the communicator in any form of training is:

- to present his ideas in a language that is clear to his interlocutor. He will therefore need to know the language or dialect, the cultural context, the intellectual level and the concerns of his interlocutor;
- to choose the most suitable and straightforward way of reaching his interlocutor;
- to check that his interlocutor has understood the message, and will act accordingly. The trainer must explain the role the training participants are expected to play in the exercise of their profession.

The participants should be capable of assimilating the message. Their role is to receive and retain the message, then to act by implementing the imparted recommendations. For them to play this role, the message must be convincing and the trainer must inspire confidence. The message must provide realistic solutions to street food problems. An effective message needs to reach the mind and spirit of the individual and to create a bond between trainer and audience so that they can collectively resolve problems that may arise.

The message needs to be true, articulate and relevant. Its substance needs to be objective and logical. The operator (vendor/handler) needs to feel involved and committed. When the vendor/handler realizes the importance of the message and its implications for his life and that of the community, he will decide to act, to change his habits and to find solutions. In this case, the trainer's goal is to communicate better in order to secure an early change in food hygiene behaviour.

There are several means of transmitting a message: word-of-mouth, television, radio, role play, songs and printed materials. It is a good idea to use several means of communication (visual, auditory, sensorial...) to activate different memories (visual, auditory...) of the interlocutor and thus increase the impact of the message.

Another criterion for successful training is the trainer's willingness to receive information from his audience: 'feedback'. This can be verbal or non-verbal. It enables the trainer to gauge the impact or outcome of his work and to introduce necessary adjustments.

A.3. ELEMENTS DISRUPTIVE TO COMMUNICATION

Impediments to the successful conveyance of information exist at all levels of the communication process.

Such disruption to good communication is known as "noise" and varies in source and form. It can stem from the trainer's attitude and behaviour as much as from the training environment.

Examples:

- noise from the communication equipment: a poorly placed or malfunctioning microphone prevents the listeners from catching the message;
- noise from the training environment: engine noise from passing vehicles can disrupt oral communication and a training session;
- noise from the trainer: a trainer who arrives late, scowls and fails to apologize is disagreeable. He puts his audience off and gives the impression he does not respect them, which does little to facilitate communication;
- noise from method of work: endless discussion on a single picture can disrupt training. Ideas become confused and the message is lost;
- noise from the audience: the trainees are uncomfortable, hungry or thirsty and centre more on their discomfort than the message. Breaks are needed to restore concentration;
- noise from language register: if a trainer talks above the heads of his audience or, on the contrary, uses overly simple language for well-educated listeners, he will soon "lose" his audience.

Thus, if street food training is to be successful, a good pedagogical approach with the different players is needed concerning the rules of communication.

B. PEDAGOGICAL ORGANIZATION OF TRAINING

Training for street food operators should be organized in modules. These will be selected according to training needs and target audience.

B.1. OBJECTIVE

For each module, the trainer will need to present the overall purpose of the training and the particular objective of that module. The participants need to be informed of the training method that will be employed. Having trainees who clearly understand the content and purpose of training greatly facilitates the assimilation of notions taught. The introduction to each module should tell each trainee why it will be worth his while to concentrate during the session. He needs to perceive the prospective returns from his effort. When training is over, the audience should understand the contents and master the recommended practices.

B.2. ADVISED TRAINING METHOD

The following elements can facilitate the transfer of information:

- open discussion;
- relaxed atmosphere;
- voice of facilitator reaching the whole audience;
- interactive approach;
- extensive involvement of participants;
- identification before training of existing audience understanding of the subject to pitch the training at the correct level;
- structuring of training and gradual progression according to course sheet or notes;
- illustration with concrete examples and real experiences to bring course contents to life;
- practical exercises to assess level of assimilation.

B.3. TRAINING AIDS

A variety of aids can be used to foster the assimilation of concepts and information:

- transparencies;
- slides;
- power point projections;
- illustrations;
- posters;
- flash cards;
- mimeographs.

B.4. DURATION

The duration of a training session will depend on the audience profile. Long sessions risk audience boredom.

B.5. EXERCISES

Each module is followed by an exercise with questions to assess the level of assimilation. Each exercise should be corrected together with the participants.

The trainer is encouraged to supplement the manual with other exercises, according to training situation and level.

B.6. TRAPS TO BE AVOIDED

The following traps to good communication should be avoided:

- talking with a single person; it is much better to involve the whole group (by saying for example: “does anyone else wish to add something?”);
- paying too much attention to an incorrect answer.

B.7. STRUCTURING THE COURSE

Good presentation requires a clear course plan with the following elements:

Introduction

- explain the purpose of training and the objectives of each module;
- explain the link between the current module, the previous modules and the next modules;
- lay out the major ideas to be developed.

Content

- develop the subject stage-by-stage from your course notes: this requires a chronological and logical sequencing off from the training manual;
- concentrate more on a few in-depth, well developed and clear stages than on a multitude of stages. This point applies to the **REMEMBER** and **GOLDEN RULES** sections which present the recommendations or important aspects of each module. They summarize the core elements of the module to be remembered;
- the core elements are then supplemented by **LEARN MORE** boxes which explain some of the key points in greater depth to the trainer;
- illustrations and posters serve to portray concrete situations that will spark discussion or illustrate a message. They show correct and incorrect behaviour;
- appropriate use of visual aids and questions is recommended to elicit participant interest and attention;
- a closing summary should be given after each section.

Conclusion

- summarize the content of the training session;
- recap and link (where possible) with previous modules;
- refer trainees to other related documents they can consult.

1.2. GLOSSARY: DEFINITION OF KEY WORDS

- **Bacterium**
See microorganism.
- **Cell**
The smallest element of living beings that can exist independently. Human beings are made up of several billion cells.
- **Cleaning**
Elimination of dirt, food residues, fat and all other undesirable matter.
- **Contaminant**
Any biological or chemical agent (all foreign matter) that is not added intentionally to food products and that may jeopardize the safety or sanitary quality of those products.
- **Contamination**
Introduction or presence of a contaminant (foreign body that can jeopardize safety or sanitary quality) in a food environment.
- **Control**
Situation in which correct methods are applied and criteria satisfied.
- **Corrective measure**
Any measure taken when the findings of monitoring of points indicate a loss of control.
- **Dirt**
Anything that taints, sullies, constitutes a reservoir of pathogenic microbes, a source of contamination.
- **Dishes**
Glasses, plates, cups, saucers, spoons, forks, ladles, chopsticks and other implements, including disposable objects, used for serving and eating food.
- **Disinfection**
Reduction through chemical agent (and/or method) of microorganisms in an environment to a level not compromising food safety.
- **Drinking water**
Water conforming to WHO standards. Defined by the WHO as water that does not contain a pathogenic or chemical agent in concentrations that can be harmful to health.
- **Equipment**
Utensil, appliance, implement or object, whether traditional, artisanal or modern, used or intended for use in preparing, conserving, selling or delivering food products.
- **Fauna**
Assembly of animal species living in a delimited geographical area.
- **Flora**
Assembly of plant species living in a given environment.
- **Food handler**
A person preparing or selling food.
- **Food hygiene**
Aggregation of conditions and measures needed to ensure the safety and sanitary quality of products at all stages of the food chain and therefore the protection of the health of the consumers of those products.

- Food poisoning
Disorder resulting from the ingestion of a bacterial toxin through the consumption of contaminated food.
- Food safety
Assurance that food is without danger to the consumer when prepared and/or consumed in accordance with its intended use.
- Food sanitary quality
Assurance that food is fit for human consumption in accordance with its intended use.
- Food
Substance taken through the mouth that maintains life and growth, gives energy and builds and replaces tissues.
- Food-borne infection
Disease caused by living pathogenic microorganisms ingested through contaminated food.
- Germ
See microorganism.
- HACCP
Hazard Analysis and Critical Control Point system.
- Hazard
Physical, biological or chemical agent, or state of the food, that can have a potentially harmful effect on consumer health.
- Hazard control
All necessary measures to ensure and maintain compliance with the criteria defined in the HACCP plan.
- Microbe
Previous term for “microorganism”.
- Micrometer
Unit of measure of length equal to one thousandth of a millimetre.
- Microorganisms
Microscopic living entities found everywhere, in water, air and earth. Their size, shape and form of life determines on whether they are bacteria, yeasts, moulds, viruses or protozoa. In general terms, those with a greater impact on food safety are bacteria and moulds.
- Microscope
Optical instrument used to examine microorganisms.
- Morbidity
Relationship between number of sick and size of population.
- Mortality
Relationship between number of deaths in a population and average size of that population in a given period.
- Official stamp
Any mark or seal, or label bearing that mark or seal, certified by the competent authority.
- Pathogenic microorganisms
Microorganisms that cause disease and often infection.
- Perishable food
Any food which, because of its nature or state, is liable to spoil.

- Pest
Animal which causes major damage to a plant or food product, usually to feed itself. Example: rat, mouse, locust, caterpillar and weevil.
- Pesticide
Substance used against animal and plant parasites.
- Pesticide residue
All specific substance present in food, agricultural produce or animal feed resulting from the use of a pesticide (or a pesticide derivative).
- Pollutant
Product or agent responsible for the degradation of the human environment.
- Proliferation
Rapid multiplication, significant increase in number of bacteria through division.
- Refuse
Household waste, rubbish of all kinds.
- Regulation
Body of legal provisions regulating (here) the street food sector.
- Spoilage
Action of modifying for the worse the nature or state of something.
- Street food
Food ready to eat, prepared and/or sold by vendors/handlers operating in the street or in other public places.
- Toxic infection
Massive absorption of bacteria and toxic substances produced by those bacteria which have multiplied (here) in the food.
- Toxin
Poison, toxic substance produced by a living organism (bacterium, poisonous mushroom) to which it confers its pathogenic capacity.
- Utensils
Objects used for everyday purposes, especially cooking.
- Wastewater
Dirty water resulting from the activity of food vendors/handlers.
- Water hazard
Body of diseases and conditions transmitted to humans through contact with water meant for a variety of uses (preparation of food and beverages, personal hygiene, etc.) containing potential sources of bacteria (faecal matter, pests and domestic animals).
- Waterproof
Retains and does not allow the passage of fluids in general.

1.3. ANSWERS TO EXERCISES

MODULE 1. CONTAMINATION OF STREET FOOD

Exercise 1

1. What are the agents responsible for food contamination?
2. What are the possible origins of microbes that contaminate street food?
3. What are the consequences for the consumer of street food contaminated with microbes?

Answers to questions

1. Microbes are part of the agents responsible for food contamination. They can be classified into five (5) main groups: bacteria, yeasts, moulds, viruses and protozoa. But there are other agents of food contamination, in particular physical and chemical agents, including:
 - heavy metals (copper, lead, etc.);
 - pesticide and fertilizer residues;
 - residues of chemical substances used in veterinary products and chemical additives such as colouring, flavouring and preservation agents not authorized for food preparation.
2. The presence of microbes in street food may be due to:
 - inadequate protection of the food;
 - insufficient and ineffective conditions of cooking when the raw materials themselves are unclean;
 - use of untreated human or animal fertilizer. The situation is compounded when the produce is not properly washed in clean water;
 - drinking water and ice sold in markets and streets that are often contaminated by different types of pathogenic germ.
3. There are many conditions to which consumers are exposed by consuming contaminated food. These food-borne microbial diseases can affect one or several people at the same time. They include:
 - infections caused by bacteria in the food which can lead to disease such as typhoid fever;
 - poisoning from toxins secreted by bacteria such as *Clostridium botulinum*, which causes botulism, a condition that is often fatal;
 - toxic infections associated with ingestion of insufficiently cooked beef or pork infected with tapeworm, for example. These infections can also result from the ingestion of vegetables contaminated by wastewater or faecal matter containing amoeba or roundworm eggs;
 - sickness from natural poisoning in mushrooms which can be fatal without immediate attention.

For further information, refer to **Table 1: Principal microbial diseases related to food consumption**.

MODULE 2. HYGIENE AND QUALITY OF RAW MATERIALS AND INGREDIENTS

Exercise 2

1. What are the key criteria or principles when selecting raw materials and ingredients? Give specific examples.
2. How can raw materials be stored for keeping on return from the market? Explain with specific examples.

Answers to questions

1. The following rules should be observed when purchasing raw materials:
 - visually check their freshness, appearance, variety and quality as well as the hygiene of the vendor and his surroundings.
 - check the best-before and use-by dates.
 - refuse any produce with defects.
 - check the quality of the produce (smell, presence of foreign bodies, insects, etc.).
 - only purchase raw materials and ingredients from vendors who observe the basic rules of hygiene for their person, dress and behaviour.

For more information refer to the different cases covered in this module (meat, eggs, canned food).

2. On return from the market, food products should be carefully wrapped against weather, insects and any form of contact that could cause contamination.
 - for bulk food and especially grains, waterproof containers are better than bags and should be placed on clean tables or shelves as protection against pests such as mice;
 - avoid placing condiments, vegetables, fruits and other foodstuffs on the ground where they are exposed to flies, dust and domestic animals. Keep them in clean containers placed on tables or shelves. Meat and fish should be put into a freezer when not immediately used;
 - protect foodstuffs with lids or plastic sheeting;
 - systematically discard raw materials that are spoilt or rotting (e.g. tomato, sweet pepper, fruit, etc.) so as not to contaminate others;
 - control insects and pests with traps rather than poison, especially rat poison which is also dangerous for humans;
 - see that premises, storage area, shelving and packages are kept clean;
 - check the cleanliness of personnel in direct contact with or access to storage or holding areas.

MODULE 3. HYGIENE OF FOOD PREPARATION AND VENDING PREMISES AND EQUIPMENT

Exercise 3

1. How can we organize the monitoring and detection of pests?
2. How can we eliminate pests without creating a risk of food poisoning?

Answers to questions

1. The monitoring and detection of pests requires rigorous control, so it is important to prevent them from entering and establishing themselves in food preparation and sale areas.

How to prevent pests entering food preparation and sale areas?

- Food preparation and sale areas should be kept constantly clean to sanitize potential pest breeding grounds (weevils).
- Holes and channels providing pests with access to food stores should be protected or blocked. Domestic animals should be barred from food preparation and sale establishments as far as possible.

How to avoid pests establishing themselves in food preparation and sale areas?

- The presence of food and water attracts pests. Foods likely to attract pests should be kept in

sealed containers above ground level and away from walls. Areas inside and outside food stores should be kept clean.

- Rubbish should be placed in covered containers that are inaccessible to pests. These should be as far as possible from the food preparation and sale area;
- There should be regular checks for the presence of pests on premises and in neighbouring areas;
- Pest infestation should be immediately dealt with without compromising food safety or sanitary quality. Chemical, physical or biological treatment should be applied taking care to avoid the risk of consumer food poisoning.

2. Good sanitary measures, inspection of raw materials and careful observation can minimize the risks of infection and therefore limit recourse to pesticides (insecticides, rat poison). As appropriate, use biological treatment or chemical and physical treatment of the food preparation and sale areas and the storage areas for raw materials and ingredients (traps, cleanliness, premises not conducive to pest infestation, monitoring doses of chemical product applied and, if necessary, calling in qualified technicians).

MODULE 4. PERSONAL HYGIENE AND HYGIENIC METHODS AND PRACTICES IN THE STREET FOOD SECTOR

Exercise 4

1. What are the rules of hygiene that ensure the proper management of household waste?
2. When should you wash your hands when selling street food?
3. How should you wash your hands when preparing and selling street food?
4. What are the five rules of cleaning for street food hygiene?

Answers to questions

1. The rules of hygiene for the proper management of household waste are the following:
 - do not throw household waste on the ground to avoid attracting insects, pests and domestic animals (dogs and cats);
 - discard solid and liquid waste separately;
 - clean household dustbins every day;
 - prevent animals from licking the plates.
2. Food safety assurance requires the washing of hands which should become a reflex action. Hands should therefore be washed:
 - at the beginning of the working day;
 - after handling raw products;
 - before touching cooked food;
 - before resuming work (after a break, telephone call, cigarette, meal, etc.);
 - after going to the toilet;
 - after touching your hair, mouth, nose, etc.;
 - after touching dirty objects (dustbins, etc.) or handling potentially contaminating food (vegetables, eggs, raw meat, packages, etc.);
 - after sneezing, coughing or blowing your nose;
 - after contact with toxic substances such as pesticides and disinfectants.

3. To wash their hands, street food vendors/handlers must:
 - run their hands through warm water;
 - take some soap and work up a froth by rubbing their hands and forearms repeatedly;
 - thoroughly rinse their hands with clean water;
 - dry their hands with a single-use hand towel;
4. Clean – Wash – Rinse – Disinfect – Wash.

MODULE 5. HYGIENE AND QUALITY OF RAW MATERIALS AND INGREDIENTS

Exercise 5

Microbes are all around us and can spread disease through various channels:

1. Name some of those channels.
2. How can we limit the spread of microbes?

Answers to questions

1. Water, animals and insects, air, food, interpersonal contact.
2. By washing our hands with clean water and soap:
 - after going to the toilet;
 - after touching animals;
 - before and after eating;
 - before and after handling food;
 - by washing all cuts and grazes on our body with boiled water and soap, and covering them with a clean bandage.

MODULE 6. REGULATION AND CONTROL OF STREET FOOD QUALITY

Exercise 6

1. What actions and measures need to be taken before operating in the street food sector?
2. What are the main factors of risk that facilitate contamination?
3. What are the critical control points in the HACCP system applied to street food? Illustrate with a precise food example.

Answers to questions

1. The preparation and sale of street food require prior authorization from the competent authority. Street food vendors/handlers need to have a prior medical examination and to have undergone tests including stool, urine and saliva and IDR (Intra Dermo Reaction). The need to be free of disease and to pay a daily charge.
2. Risk factors facilitating street food contamination exist at different levels:
 - unclean water;
 - contaminated or poorly washed raw materials;

- unclean work materials;
- preparation and sale of food in unsanitary surroundings;
- uncovered food;
- poor storage and keeping conditions;
- use of a limited number of pots or plates;
- poor hygiene and health of street food operators;
- various other unhygienic habits and practices of operators and consumers (poor personal hygiene, inappropriate clothing, improper conduct during preparation, keeping, sale and consumption of food).

3. The stages of control under the principles of the HACCP system applied to street food are:

- source and quality of water used;
- selection, storage and keeping of raw materials used in food preparation to verify their safety;
- hygiene of food preparation, keeping, transport and distribution equipment;
- the food preparation, sale, storage and keeping operations, in particular:
 - the preparation and sale surroundings;
 - the protection of food to be sold;
 - the storage and keeping of food ready for sale.
- the state of premises, the organization and management of work place and the preventive hygiene measures implemented;
- the health of food handlers, their personal hygiene, the cleanliness of their clothing and their practices during food preparation and sale.

Refer by way of example to Module 6 – Section II: Flow diagram of hazards and preventive measures: precooked food.

2. ILLUSTRATIONS AND POSTERS

Illustrations and posters are visual aids that help the audience better understand and assimilate information through powerful images accompanied by messages conveying food hygiene rules. Such illustrations and posters portray practices to be encouraged and others to be discouraged.

2.1. PRESENTATION OF ILLUSTRATIONS AND POSTERS

MODULE 1: CONTAMINATION OF STREET FOOD

Illustration 1.1

Description: A laboratory technician examining a microscope sample of food contaminated by microbes.

Message: Let's avoid contact between food and dirty environment (water, air, ground) to prevent contamination by microbes invisible to the naked eye.

Illustration 1.2

Description: A woman selling food in an area polluted by vehicle exhaust fumes (**practice to be discouraged**).

Message: Let's avoid exposing our food to vehicle exhaust fumes and reduce the risk of chemical contamination and harm to consumers.

MODULE 2: HYGIENE AND QUALITY OF RAW MATERIALS AND INGREDIENTS

Illustration 2.1

Description: Purchasing meat from a clean stall: a woman buying meat from a traditional butcher. We can see:

the cleanliness of the surroundings:

- there is no rubbish or household waste;
- the merchandise is displayed with professional competence;
- the butcher is clean in appearance;
- he is holding a fly-whisk.

evidence of veterinary inspection:

- a visible stamp on the carcass (**practice to be encouraged**).

Message: I buy my meat from a clean butcher's stall with evidence of veterinary inspection.

Illustration 2.2

Description: A woman buying her tomato, chilli and onion supplies from a vendor of fresh produce displayed in raised baskets in clean surroundings (**practice to be encouraged**).

Message: I buy my vegetables and spices from a vendor who can guarantee their freshness and sanitary quality.

Illustration 2.3

Description: A woman buying vegetables and spices displayed on the ground in unsanitary surroundings (**practice to be discouraged**).

Message: Avoid buying raw materials displayed in unsanitary surroundings.

Illustration 2.4

Description: A woman buying recently landed fish. She buys her fishery products from suppliers who can guarantee their freshness and transports her purchases in an ice-cooler (**practice to be encouraged**).

Message: I buy my fish and fishery products from suppliers who can guarantee their freshness.

Illustration 2.5

Description: A woman selling fish covered with flies; the street food operator gives her a miss and goes to another vendor whose fish, practices and conditions seem more hygienic (**practice to be encouraged**).

Message: Avoid buying fish and fishery products that are not covered and are poorly kept.

Illustration 2.6

Description: Purchasing meat from a hygienic stall (urban setting) like this modern butcher's (**practice to be encouraged**).

Message: In town, I buy meat from a modern butcher's.

Illustration 2.7

Description: On her return from market, a woman carries all her supplies (animal and vegetable products) in the same basket (**practice to be discouraged**).

Message: Do not put all your purchases of raw materials and ingredients in the same basket.

Illustration 2.8

Description: On her return from market, a woman carries her purchases in different baskets, some of them covered (**practice to be encouraged**).

Message: I cover my purchases of raw materials and ingredients against dust and dirt and avoid mixing them.

Illustration 2.9

Description: A woman transferring her purchases from ice-cooler to freezer to avoid breaking the cold chain between purchase, storage and preparation of fish (**practice to be encouraged**).

Message: Avoid breaking the cold chain between purchase, storage and preparation of meat and fish.

MODULE 3: HYGIENE OF FOOD PREPARATION AND VENDING PREMISES AND EQUIPMENT

Illustration 3.1

Description: A woman draining her dishes in a raised plastic basket (**practice to be encouraged**).

Message: After washing and rinsing in clean water without detergent, I dry my dishes in a raised plastic basket.

Illustration 3.2

Description: In clean surroundings, a woman washes her dishes in a basin of soapy water. She has two other basins with clean water for rinsing. There is also a dish with a bar of soap (**practice to be encouraged**).

Message: I always avoid washing up in unclean surroundings to reduce microbial contamination. After washing, I rinse dishes in two basins of clean water.

Illustration 3.3

Description: A woman carefully ordering her cooking utensils to make best possible use of space; the cutting boards and saucepans are hung from nails in the wall; the dishes are stacked in plastic mesh baskets (**practice to be encouraged**).

Message: Carefully order your cooking utensils and lids to have more space in your kitchen.

Illustration 3.4

Description: A woman washing up on the ground in unhygienic conditions (**practice to be discouraged**).

Message: I avoid washing up in unhygienic surroundings to reduce microbial contamination.

MODULE 4: PERSONAL HYGIENE AND HYGIENIC METHODS AND PRACTICES IN THE STREET FOOD SECTOR

Illustration 4.1

Description: A woman having her hair done while serving food (**practice to be discouraged**).

Message: For my personal hygiene and the safety of the food I sell, I make sure I am clean and avoid doing my hair where the food is prepared and sold.

Illustration 4.2

Description: A woman wearing clean clothing, an apron and headscarf. Her assistant is also very clean (**practice to be encouraged**).

Message: Where food is prepared and sold, a vendor should always be clean and properly dressed to avoid contamination.

Illustration 4.3

Description: A woman serving food while improperly dressed (**practice to be discouraged**).

Message: I should not be dirty or improperly dressed to avoid contaminating the food I am selling.

Illustration 4.4

Description: A woman directly tasting sauce (or other food) from the cooking spoon (**practice to be discouraged**).

Message: To avoid contaminating the food you are preparing, do not taste it directly from the cooking or serving spoon.

Illustration 4.5

Description: A woman tasting food placed in the palm of her hand (**practice to be encouraged**).

Message: Taste sauces (and other food) from the palm of your clean hand.

Illustration 4.6

Description: A woman using her bare hand to serve customers (**practice to be discouraged**). The customer objects (**practice to be encouraged**).

Message: I avoid serving customers with my bare hand.

Illustration 4.7

Description: A woman serving a customer with a fork (**practice to be encouraged**).

Message: To avoid contamination from my bare hand, I serve customers with an implement (spoon, fork, ladle...).

Illustration 4.8

Description: A woman talking and sputtering over the food she is serving (**practice to be discouraged**).

Message: I avoid talking over the food I am serving.

Illustration 4.9

Description: A woman blowing her nose over her food (**practice to be discouraged**).

Message: For food safety and hygienic premises, I avoid blowing my nose over the food.

Illustration 4.10

Description: A woman sorts, washes and blanches leafy vegetables before use (**practice to be encouraged**).

Message: Before using food items, make sure they are properly cleaned and prepared.

Illustration 4.11

Description: A woman uses two bowls of water to clean and rinse condiments to make sure they are clean and hygienic before grating and use (**practice to be encouraged**).

Message: Carefully wash food and condiments before preparation and use.

Illustration 4.12

Description: A woman using a cart to transport covered containers of prepared food to the points of sale (**practice to be encouraged**).

Message: When transporting prepared food, make sure it is protected against dirt by covering the containers.

Illustration 4.13

Description: A woman street vendor simmering her sauce to avoid contamination and deterioration (**practice to be encouraged**).

Message: Avoid contamination, deterioration and fermentation of prepared foods by keeping them hot.

Illustration 4.14

Description: Before serving, a woman vendor helps a customer wash his hands with clean water in a bowl (**practice to be encouraged**).

Message: Wash your hands with clean water before and after meals.

Illustration 4.15

Description: A customer washing his hands under the tap of a closed water tank. The dirty water is collected in a bowl under the tap (**practice to be encouraged**).

Message: Wash your hands under clean running water before and after meals.

Illustration 4.16

Description: Several people washing their hands in the same bowl (**practice to be discouraged**).

Message: Customers should not wash their hands at the same time, or one after the other, in the same bowl of water.

MODULE 3: HANDLING WATER IN STREET FOOD PREPARATION AND VENDING

Illustration 5.1

Description: A woman collecting water from a high-risk source of contamination (watercourse) (**practice to be discouraged**).

Message: I avoid collecting water for consumption from high-risk sources of contamination.

Illustration 5.2

Description: A woman collecting drinking water from a clean source: a standpipe connected to the grid (**practice to be encouraged**).

Message: I fetch my drinking water from safe sources such as the grid.

Illustration 5.3

Description: A woman collecting drinking water from a clean source (well with rim and cover) (**practice to be encouraged**).

Message: I collect my drinking water from safe sources such as wells with rim and cover.

Illustration 5.4

Description: A well with rim and cover (**practice to be encouraged**).

Message: Always place your wells far from latrines and keep them covered against contamination.

Illustration 5.5

Description: A woman serving drinking water from a jug (**practice to be encouraged**).

Message: I provide my customers with drinking water in an appropriate container.

Illustration 5.6

Description: Good management of drinking water at a food preparation and sale outlet means keeping it in a large covered recipient and serving it with a clean beaker (**practice to be encouraged**).

Message: I always cover my drinking water and serve it with a clean beaker.

PRESENTATION OF POSTERS

Poster 1: Hygiene of food preparation and sale points: unsanitary production.

Description: A woman adopting unhygienic practices during the preparation and sale of street food (**practice to be discouraged**).

Message: Adopt healthy recommended practices to avoid contaminating meals and ensure food safety.

Poster 2: Hygiene of food preparation and sale points: clean sanitary production.

Description: Presentation of a clean environment for food preparation and sale (**practice to be encouraged**).

Message: I always keep my food preparation and sale area clean and distant from rubbish (solid and liquid waste), stagnant water and latrines.

Poster 3: Procuring fresh fish, cold storage and careful preparation before cooking.

Description: A woman about to place her fish in an ice-cooler after purchase at the landing point. Before cooking she carefully scales, washes, rinses and drains the fish (**practice to be encouraged**).

Message: Before preparing fishery and meat products, maintain the cold chain between purchase and storage.

Poster 4: Unsanitary practices and habits.

Description: An unsanitary environment for the preparation and sale of street food in terms of personal hygiene, cleanliness of clothing, conduct and operational hygiene (**practice to be discouraged**).

Message: I avoid unsanitary practices and conduct when preparing and selling street food to avoid microbial contamination.

Poster 5: Good water management.

Description: A woman fetching water from different sources of drinking water (**practice to be encouraged**)
A woman serving drinking water from a jug (**practice to be encouraged**)

Message: I fetch drinking water from safe sources guaranteed by the competent services.

Poster 6: Good waste management

Description: Proper management of solid and liquid waste from food preparation and cooking:
A woman peeling cocoa yam. She has a basket close by for the waste (**practice to be encouraged**).

Message 1: During a day's food preparation, place your rubbish in a dustbin that you keep covered.
A woman emptying her dustbin into the municipal cart at the end of the working day (**practice to be encouraged**).

Message 2: At the end of the working day I empty my dustbin into the municipal cart.

Poster 7: Washing, cleaning and storing dishes

Description: In a clean working area, a woman washes her dishes in a bowl of soapy water and has two other bowls with clean water for rinsing. On the side we can see a dish with bar of soap (**practice to be encouraged**).
A woman drying her dishes in a raised basket (**practice to be encouraged**).

Message: To avoid microbial contamination, I always wash my dishes in a clean environment and place the dishes in a raised basket.

2.2. ADAPTING ILLUSTRATIONS AND POSTERS TO LOCAL CONTEXTS

The above illustrations and posters are only indicative and might not correspond to local reality. We recommend that trainers update and adapt them as necessary to the local context so that vendors can better identify with their content. Some practices to be encouraged or discouraged among street food handlers, vendors and consumers might need to be modified, removed or added. This will help convey the message and will enhance operator take-up of recommended hygienic practices.

Section III

ANNEXES: TECHNICAL FACT SHEETS

In order to minimize the risks of contamination of all sorts of food from dirt, a number of practical tips adapted to the African context, and in particular its market context, are proposed in the following fact sheets. These tips will enable street food vendors and handlers to maintain their utensils and ensure a clean work environment. However, visible hygiene is not enough; the professional conscience of each operator also has a key role in ensuring hygiene.

- Annex 1: use of chlorine bleach
- Annex 2: care and cleaning of utensils and appliances
- Annex 3: diagrams of prototype food vending carts
- Annex 4: cleaning and disinfecting food preparation and vending premises

Annex 1

USE OF CHLORINE BLEACH

USING A COMMON DISINFECTANT: CHLORINE BLEACH

1. Properties of chlorine bleach

Chlorine bleach is a powerful, economical disinfectant that destroys bacteria, moulds, spores and viruses.

2. Composition of chlorine bleach

It is a solution of sodium hypochlorite and sodium chloride.

3. Presentation

In flasks or tablets of strengths:

- 9 chlorometric degrees ($^{\circ}$ Chl), equivalent to 2.6% active chlorine
- 12 $^{\circ}$ Chl equivalent to 3.6% active chlorine
- 35 $^{\circ}$ Chl equivalent to 9.6% active chlorine

A 25 centilitre pack at 48 $^{\circ}$ Chl diluted in 75 centilitres of water will produce one litre of 12 $^{\circ}$ Chl bleach ready for use.

4. Utilization

Chlorine bleach should be diluted in cold or warm water.

Chlorine bleach should always be used alone without combining another household product.

5. Practical application

UTILIZATION	DOSE OF CHLORINE BLEACH AT 9 $^{\circ}$ Chl Equivalent to 2.6% active chlorine	TIPS
Premises, floors, doors, work areas, tiled or plasticized surfaces	2 glasses (300 ml) for one bucket of water (10 litres)	Clean, rinse, bleach, leave 10 mins to react, rinse (with clean water for work areas)
Large appliances, dustbins, cutting boards	20 glasses (3 litres) for one bucket of water (10 litres)	Dismantle, scrape, clean, rinse, bleach, leave to react 15 mins, rinse
Dishes, kitchen utensils, tableware, sink	1 glass (150 ml) for one bucket of water (10 litres)	Clean, rinse, bleach, leave to react 15 mins, rinse with clean water
Refrigerator	5 glasses (750 ml) for one bucket of water (10 litres)	Apply the bleach solution with sponge, leave to react 10 mins, rinse with clean water
Toilets, W.C. siphons	1½ glasses (225 ml)	Pour the chlorine bleach directly, leave to react 15 mins, rinse
Sponges, cloths	2 glasses (300 ml) for one bucket of water (10 litres)	Leave to soak 5 mins, rinse
Vegetables, salads, fresh herbs	3 soupspoons (30 ml) for 50 litres of water.	Soak, wash in clear water for 15 mins, remove water and replace with bleach solution, soak the salads and vegetables, leave to react 5 mins, rinse with clean water, drain

Annex 2

CARE AND CLEANING OF UTENSILS AND APPLIANCES

SHEET N°1: ABRASIVE PASTE

1. Preparation

Abrasive paste is a mix of wood ash and soap powder or Marseille soap grated and sometimes reduced to powder.

Mix two volumes of wood ash with one volume of soap. Add a little water to obtain a paste.

The ingredients are therefore:

- 1 measure of soap + a little water
- 2 measures of wood ash

2. Utilization

Abrasive paste is used to polish cooking utensils, appliances and other equipment.

SHEET N°2: CARE OF ALUMINIUM UTENSILS

1. Materials

- Brush
- Aluminium pan to be cleaned

2. Products

- Water
- Abrasive paste (see sheet 1)

3. Instructions

- Rub the dry pan with the abrasive paste
- Pre-wash
- Wash with soapy water (Marseille soap)
- Rinse copiously
- Wipe with a clean, dry cloth
- Put the materials, products and utensils away

SHEET N°3: CARE OF STAINLESS STEEL UTENSILS

1. Materials

- Basins, bucket
- Bowls
- Brush

2. Products

- Water, grated Marseille soap

3. Instructions

- Wash in soapy warm water
- Rinse in clear water

- Wipe with dry clean cloth
- Put materials and products away

SHEET N°4: CARE OF DISHES

1. Materials

- dual-compartment sink, 3 basins
- 1 brush
- 1 easy-to-wash cloth
- 2 dish cloths

2. Products

- Warm water
- Hot water for rinsing
- Sulphonate products (products for washing-up)

3. Instructions

Wash-up as soon as possible after each meal.

3.1. Preparation

- Remove all leftovers from dishes
- Rinse plates and pans to detach the food
- Place dirty dishes on the side of the sink, first the non-fatty dishes: glasses, coffee cups, dessert plates, then the fatty dishes: saucepan lid or serving dish, stacked plates, platters, saucepans, frying pan
- Prepare the water for washing and rinsing



3.2. Operation

- Wash the dishes in a bowl or basin, one item at a time, starting with the non-fatty dishes, and renewing the water as necessary
- Rinse in the other bowl or basin
- Renew the water several times as necessary
- Drain on the draining board

3.3. Ordering

- Wipe and stow the dishes as you go along
- Clean the sink or basins
- Pass the floor cloth as necessary

SHEET N°5: CARE OF REFRIGERATOR

1. Description and functioning of refrigerator

A refrigerator is a compartmentalized chilling cabinet. It supplements or replaces the cold chambers.

Refrigerators produce cold by evaporating a sealed liquid to absorb heat. It has a cabinet and compressor. The normal volume of a household refrigerator is 120 litres.

The cold storage of food does not change its nutritional value. It does not destroy enzymes or vitamins. The refrigerator is activated by a thermostat that switches the current on or off as the inside temperature exceeds or falls below a set value.

The atmosphere in a refrigerator is cold and dry because of the deposit of ice on its coils. The coils need to be de-iced when the ice acquires a certain thickness. Modern refrigerators are equipped with a mechanism that does this automatically.

You will have to use the following materials and products to maintain your refrigerator:

2. Materials

- Bucket
- Clean cloth or rag
- Floor cloth

3. Products

- Water
- Soap
- Diluted chlorine bleach (or other disinfectant)

4. Instructions

- Unplug the refrigerator and remove the shelves, ice-trays and vegetable drawers
- Clean the inside of the fridge with soapy water, rinse with clean water and disinfect with a sponge soaked in diluted chlorine bleach, then leave to dry
- Do the same for the shelves, trays and drawers
- Fill the ice-trays with water and switch the refrigerator back on.

Annex 3

DIAGRAMS OF PROTOTYPE FOOD VENDING CARTS

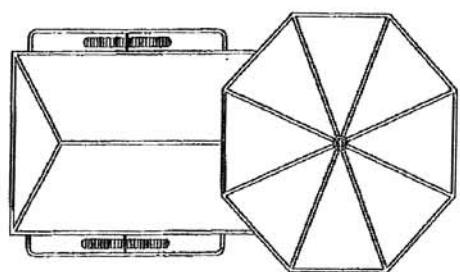
PROTOTYPES OF VENDING CARTS

Proposed prototypes:

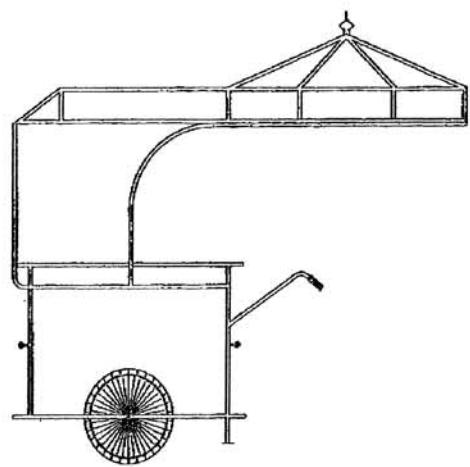
- A countertop with central stove and cover
- A glass panelled cabinet for food protection
- Closed container for beverages.

These prototypes were produced under an FAO Technical Cooperation Programme (Project TCP/SEN/8822-A) entitled "Strategy for Reorganizing the Street Food Sector in Dakar". The prototypes are designed for easy local reproduction with commonly available materials.

FOOD CART FITTED WITH COVER AND COUNTERTOP WITH CENTRAL STOVE



VIEW FROM ABOVE COVER



VIEW FROM LEFT SIDE

ILLUSTRATION 4.1

SOURCE: project TCP/SEN/8822 (A)

FOOD CART WITH COVER AND COUNTERTOP WITH CENTRAL STOVE

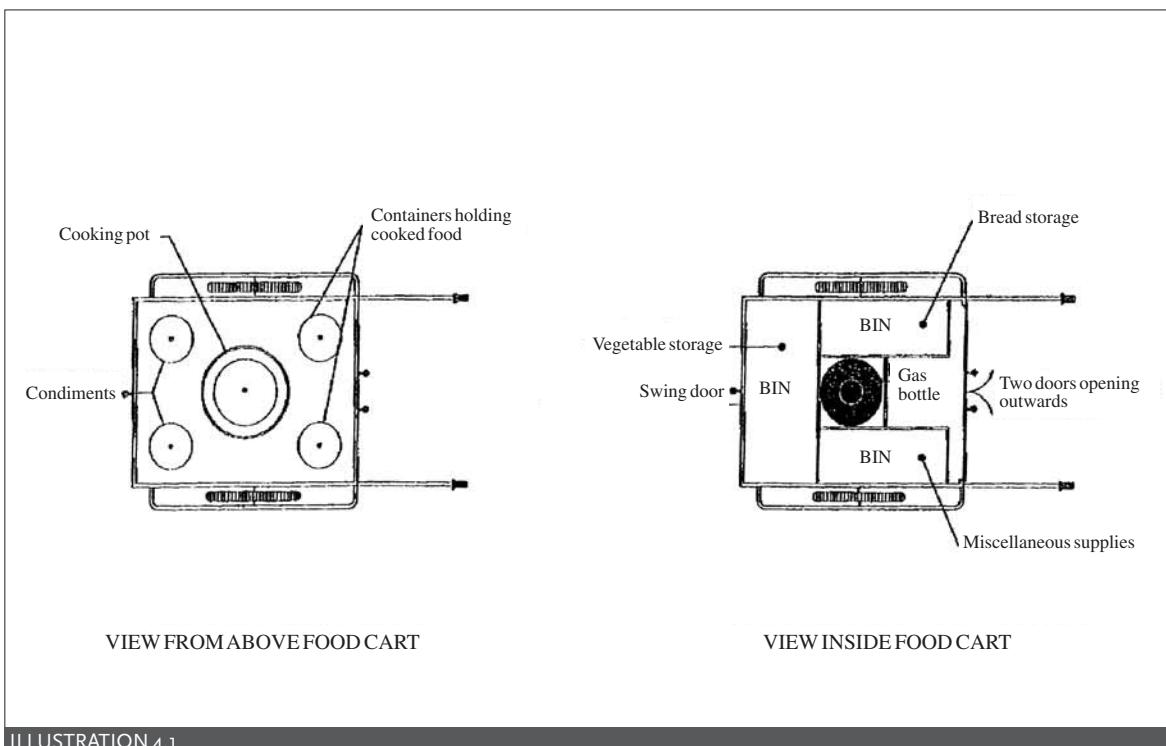
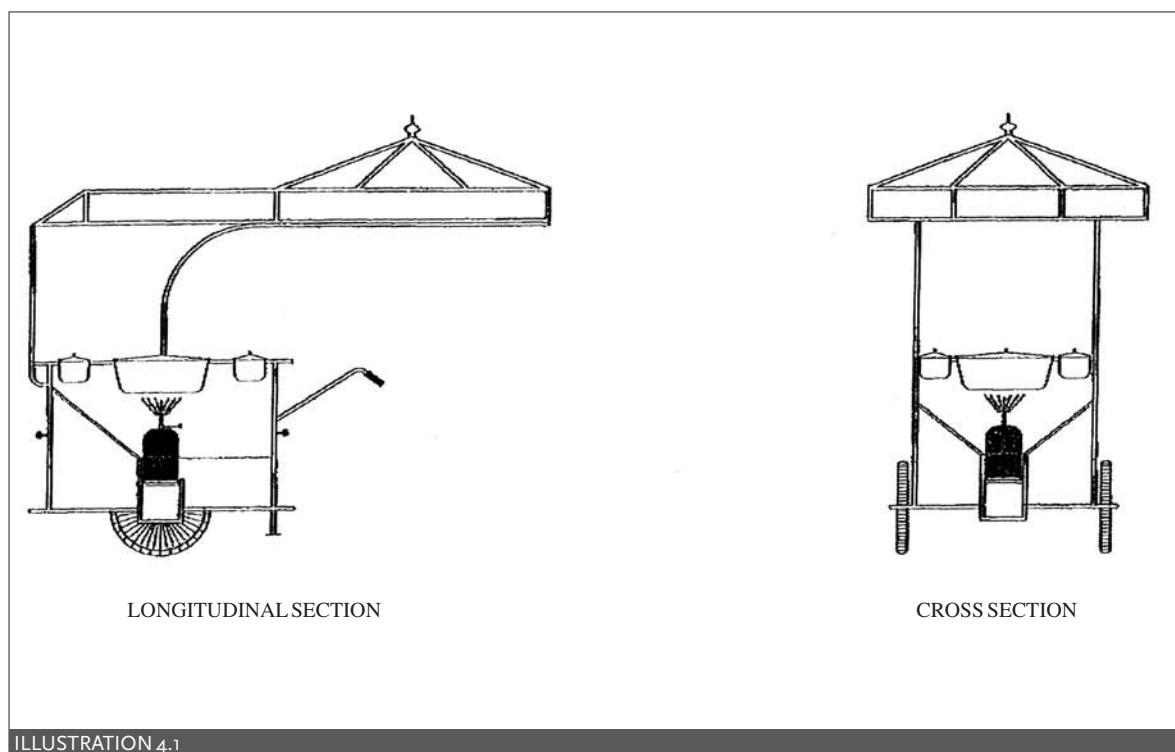


ILLUSTRATION 4.1

SOURCE: project TCP/SEN/8822 (A)

FOOD CART WITH COVER AND COUNTERTOP WITH CENTRAL STOVE



SOURCE: project TCP/SEN/8822 (A)

FOOD CART WITH COVER AND GLASS PANELLED CABINET FOR FOOD PROTECTION

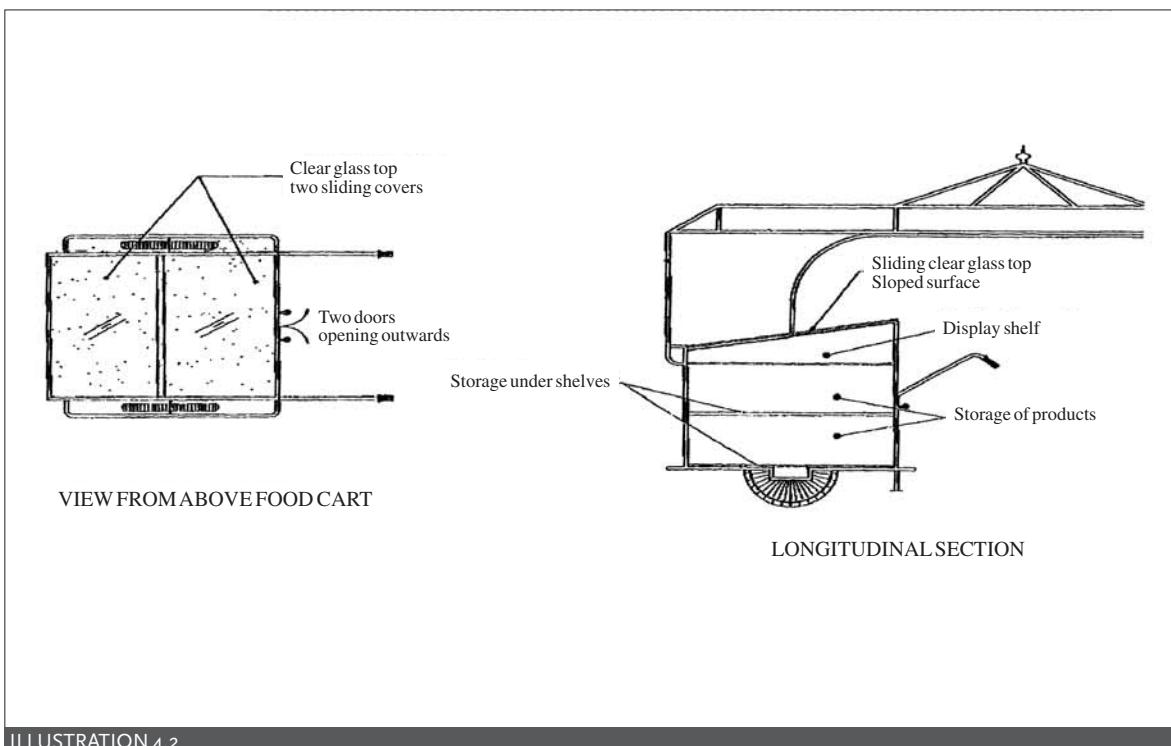


ILLUSTRATION 4.2

SOURCE: project TCP/SEN/8822 (A)

**FOOD CART WITH COVER
AND GLASS PANELLED CABINET FOR FOOD PROTECTION**

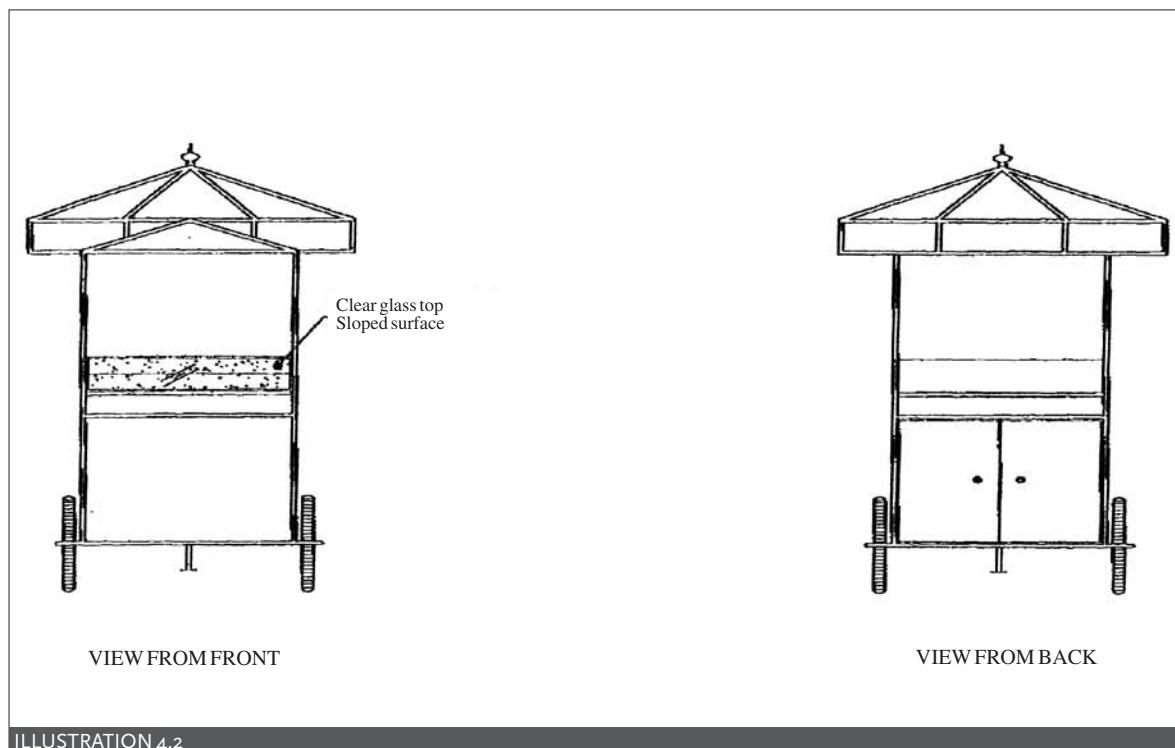


ILLUSTRATION 4.2

SOURCE: project TCP/SEN/8822 (A)

FOOD CART WITH COVER AND CLOSED CONTAINER FOR BEVERAGES

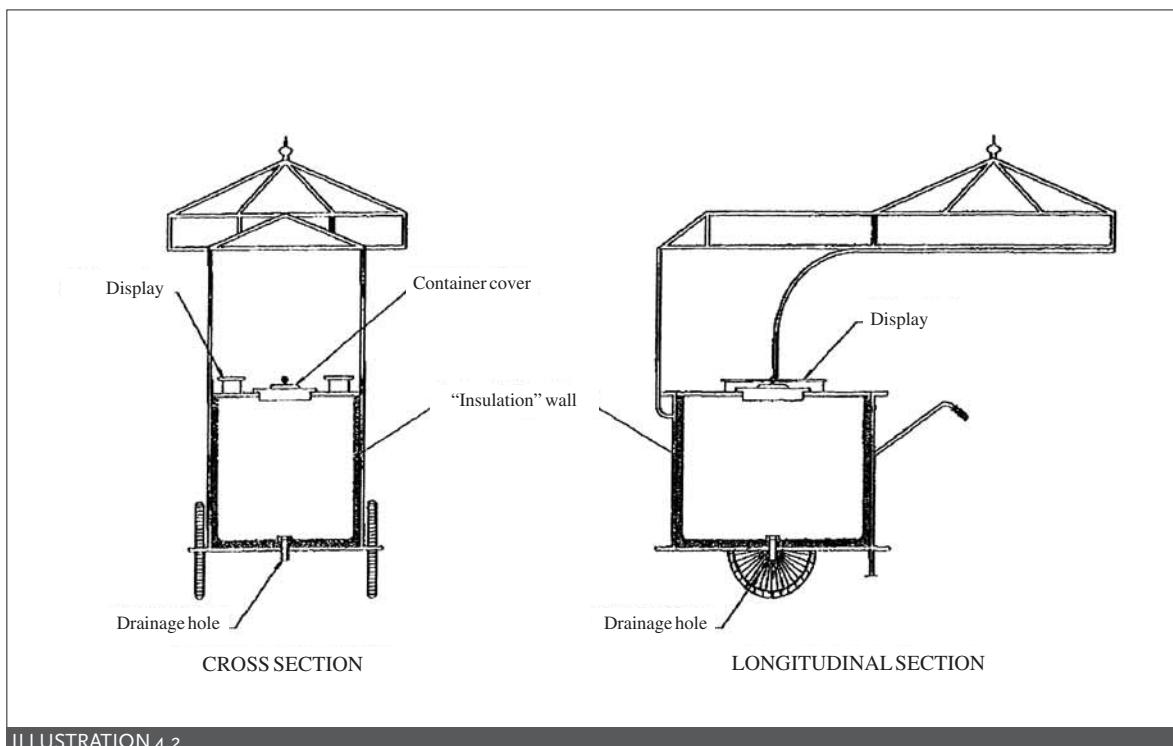


ILLUSTRATION 4.2

SOURCE: project TCP/SEN/8822 (A)

Annex 4

CLEANING AND DISINFECTING FOOD PREMISES

RISKS OF CONTAMINATION OF FOOD PREMISES

Quality of hygiene in the cooking area requires spotlessly clean surfaces. As no food is sterile, the entire area and equipment can be contaminated by inoffensive or dangerous germs during the work period. It is therefore essential to clean and disinfect the cooking premises to prevent microbe breeding grounds.

To be effective, disinfection of premises and frequency of cleaning need to be carefully planned, using appropriate products and materials.

FREQUENCY OF CLEANING

(As example, but reference should be made to national regulations, where applicable)

- Ceilings: once every month
- Walls: once or twice a day around the work area; once a week elsewhere
- Work areas, tables: after each use

SHEET N°1: CLEANING GLASS PANES

1. Materials

- Dust cloth
- Cotton cloth
- Chamois leather
- Woollen cloth
- Protection of ground with floor cloth
- Newspaper
- Stepladder
- Newspaper for wiping
- Small brush

2. Products

- Vinegar or product for glass panes
- Alcohol at 90° or for burning

3. Instructions

3.1. Preparation

- Get the materials and products ready
- Ensure safety by closing shutters

3.2. Execution

- Dust the window frame and pane starting from the top
- Clean each pane with a clean cloth, with sufficient cleaning product. Start at the centre of the pane and pay special attention to the corners
- Clean and polish first with a clean cloth, then with chamois leather.

3.3. After

- The dust cloth is thoroughly shaken and washed
- The cleaning cloth is washed and cleaning products are carefully closed.

SHEET N°2: CLEANING PLASTIC CHAIR

1. Every day cleaning

- Dust with cloth or tightly wrung sponge
- Dry
- Remove any dirty mark with sponge, soapy warm water and scouring powder, rinse and dry.

2. Thorough cleaning

2.1. Materials

- Two protective floor cloths
- One brush
- One sponge
- Cleaning cloths

2.2. Products

- Hot water, detergent for plastic, alcohol, wood varnish or wax, liquid soap

3. Instructions

- Wash in a large recipient or with wet cloth or sponge
- Let the detergent react for at least 10 mins.
Soak small objects in solution for 10 mins
- Brush above and below
- Remove difficult marks with scouring powder
- Rinse with hot water and sponge
- Drain on floor cloths
- Dry with clean cloth
- Shine with alcohol on cotton cloth

SHEET N°3: CLEANING WASHROOM: DESCALING AND DISINFECTING

1. Materials

- Bucket, sponge, small brush, jug, rubber gloves, clean cloth

2. Products

- Descaler, chlorine bleach

3. Instructions

- Pour water over stained parts and sprinkle them with descaler
- Leave to react according to descaler instructions
- Rinse, wipe, making sure to wear rubber gloves
- Disinfect by pouring pure chlorine bleach at 9 or 120 Chl
- Leave to react

SHEET N°4: EVERY DAY CLEANING OF TOILET

1. Materials

These materials should be used exclusively for cleaning the toilet and toilet tiles. They comprise:

- Bowl brush, jug, sponge, rubber gloves, clean cloths

2. Products

- Scouring powder
- Hot water
- Deodorizer/disinfectant

3. Instructions

- Air the toilet leaving the door and windows open
- Brush
- Fill a jug with water and deodorizer/disinfectant
- Clean (see below)

3.1. For a squat toilet:

- Wet the bowl and sides using the jug
- Sprinkle scouring powder without exaggerating
- Brush with a small toilet brush
- Rinse with the jug
- Flush

3.2. For a seated toilet:

- Flush
- Sprinkle scouring powder without exaggerating
- Brush with bowl brush
- Wash seat, outside and column with sponge
- Leave to dry
- Leave toilet paper if needed and deodorizing block
- Wash tiles
- Leave to dry
- Close windows
- Put everything away clean

SHEET N°5: SWEEPING A ROOM

1. Materials

- Broom
- Shovel
- Small brush
- Dusting cloth

- Bucket or bowl
- Dustbin

2. Products

- Water

3. Instructions

3.1. Preparation

- Open windows
- Have materials handy
- Remove light furniture

3.2. Execution

- Sweep from the corner opposite the door
- First sweep part of the room to the door, then other part keeping to the right of the clean part, sweeping large areas
- Collect dust with shovel and brush and empty into dustbin.

3.3. Ordering

- Replace the furniture
- Wipe dust from the furniture
- Check the work
- Put everything away clean
- Close windows

SHEET N°6: THOROUGH CLEANING OF CEMENT FLOORS

1. Materials

- Broom
- Scrub brush
- Bucket
- Dustbin

2. Products

- Hot water
- Detergent
- White spirit
- Chlorine bleach
- Deodorizer

3. Instructions

- Sweep the wetted floor
- Remove dirt with concentrated hot detergent and use white spirit for oil and fat stains

- Wash thoroughly with soapy hot water and scrub brush
- Rinse with hose or bucket
- Use deodorizer or chlorine bleach for last rinse
- Remove all water with broom and squeegee
- Leave to dry with windows open.

SHEET N°7: EVERY DAY CLEANING OF FLOOR TILES

1. Materials

- Brushes
- Two buckets
- Two floor cloths
- Scrub brush

2. Products

- Water
- Floor detergent
- Chlorine bleach

3. Instructions

3.1. Preparation

- Open windows
- Have materials and products handy

3.2. Execution

- Brush (following above instructions)
- Clean floor tiles by rubbing small surface areas with floor cloth soaked in water with detergent, then rinse with clear water and chlorine bleach as you go along
- Wipe the furniture

3.3. Ordering

- Check the finished work
- Put the material and products away clean
- Rearrange room
- Close windows

SHEET N°8: THOROUGH CLEANING OF FLOOR TILES

1. Materials

- Brushes
- Two floor cloths
- Two recipients
- One scrub brush

2. Products

- Hot water
- Soft soap (one soup spoon/litre)
- Abrasives

3. Instructions

3.1. Preparation

- Remove light movable furniture
- Sweep and gather dust
- Have materials and products handy

3.2. Execution

- Brush floor tiles, beginning with corner opposite door
- Work on small surface areas, gradually moving back into the dry dirty part. For more difficult marks, brush after using abrasive powder
- Soak up dirty water by hand with dry floor cloth as you go along
- Rinse every now and then, and a second time when all brushing is finished. Do this with scrub brush and floor cloth soaked in clear water
- Dry by leaving a draught from the window to the door

3.3. Ordering

- Replace furniture and materials

SHEET N°9: CLEANING PAINTED SURFACES

1. Non-washable surfaces

Remove the dust with a non-fleecy cloth placed on brush or a duster brush (wall, ceiling). Some marks can be removed by rubbing with a binding agent like bread dough.

2. Surfaces with oil paint

Oil paint is waterproof and can therefore be washed. But it will eventually be damaged by the carbonic acid and salts in the water and cleaning products used.

2.1. For painted surfaces slightly dirty

- Dust
- Remove marks with a binding agent

2.2. For painted surfaces moderately dirty

- Prepare sponge, bucket, clear water and light clean non-fleecy cloth
- Softly rub wetted and wrung sponge in the direction of the paint
- Do one small area at a time, beginning from the bottom as water trickling into a wet area spreads without leaving a mark
- Wipe by dabbing and leave to dry.

2.3. For dirty painting

- Prepare slightly soapy water, bucket of clear water and clean non-fleecy cloth

- Work as above, wash, rinse and wipe from the bottom

2.4. For very dirty painting

- Use slightly more detergent in the water or even washing powder
- Rub very dirty areas with a little scouring powder

But thorough cleaning wears the paint away. It is therefore important to act promptly and regularly. The paint should be renewed after two or three washes.

BIBLIOGRAPHY

CHETEL J-F. CHEFTEL H (1977). *Introduction à la biochimie et à la technologie des aliments. Volume 1, Technique et Documentation* – Lavoisier. Paris, France.

DIOUF F. (1992). *Contribution à l'étude de la qualité hygiénique des aliments vendus sur la voie publique (AVP) dans la région de Dakar*. Thèse de Doctorat d'Etat.

DUPIN H., CUQ J-L., MALEWIAK M-I., LEYNAUD-ROUAUD C. BERTHIER A. M. (1992). *Alimentation et nutrition humaines*. Edit. ESF, Paris, France.

FAO (1992). *Guide des bonnes pratiques de fabrication dans les industries agro-alimentaires*. Antananarivo, Madagascar.

FAO (1989). *Street foods. A summary of FAO studies and other activities relating to street foods*. Rome, Italy.

FAO (1988). *Street foods. Report of an FAO Consultation, 5-9 December, Jogjakarta, Indonesia*.

FAO (1994). *Application du système des points de contrôle critique pour l'analyse des dangers (HACCP) aux aliments vendus sur la voie publique*. Rome, Italy.

FAO (1995). *Guide de bonnes pratiques hygiéniques dans le secteur informel de l'alimentation*, Rome, Italy.

FAO (2001). *Système de qualité et de sécurité sanitaire des aliments: manuel de formation sur l'hygiène alimentaire et le système d'analyse des risques points critiques pour leur maîtrise (HACCP)*. Rome, Italy.

FAO (1995). *Code d'usages en matière d'hygiène pour la préparation et la vente des aliments sur la voie publique (Norme régionale – Amérique latine et Caraïbes)*. Codex Alimentarius Commission. Rome, Italy.

FAO-WHO (1994). *Fruits et légumes frais tropicaux*. Codex Alimentarius, volume 5B. Rome, Italy.

FAO-WHO (1994). *Viandes et produits à base de viande y compris les bouillons et consommés*. Codex Alimentarius, volume 5B. Rome, Italy.

FELLOWS P. and HIDELLA V., (1993). *Hygiène et production alimentaire. Manuel destiné aux petits producteurs, sur les règles d'hygiène pour la production et l'emballage des produits alimentaires*. Coédition CTA/IF, 45 p, CTA n° 2551.

KOUADIO L. (1994). *Promotion et contrôle du secteur informel de l'alimentation à Abidjan, Abidjan, Côte d'Ivoire*.

Ministry of Public Health in collaboration with FAO (1995). *Manuel d'hygiène alimentaire dans le secteur de informel de l'alimentation*. Technical Paper TPC/ZAI/2355 (A), Kinshasa, Zaire.

NAGO (1992). *Street foods in West Africa*. FAO, Rome, Italy.

FAO (1994). *L'alimentation de rue en Afrique de l'ouest. Rapport final sur le secteur informel de l'alimentation, 21/25 November 1994*. Cotonou, Benin.

WHO (1980). *Directives pour l'établissement ou le renforcement de programmes nationaux de surveillance de la contamination des produits alimentaires*. Geneva, Switzerland.

WHO (1992). *Principales normes de salubrité applicables aux aliments vendus sur la voie publique*. Geneva, Switzerland.

WHO (1990). *Guide pour la formation en nutrition des agents de santé communautaire*. Geneva, Switzerland.

WONE D.H., NDIAYE S. (2000). *Formation sur l'hygiène et la qualité des aliments. Formation faite à l'intention des restauratrices, restaurateurs et étalagistes à l'ENFEFS 27 March – 12 May 2000, Dakar, Senegal.*

FAO-FBFI (1990). *Training programme for women on the safe production and sale of street foods. From 11 to 26th February, 1989. Ibadan, Nigeria.*

FAO (1994). *Microbiologie et Hygiène Alimentaire. Numéro spécial, Actes du Séminaire FAO/AAMHA/FMS sur le thème Recherche des germes pathogènes dans les aliments. Rome, Italy.*

FAO (1999). *Food, Nutrition and Development. Field Programme Management, Rome, Italy.*

This training manual on good hygienic practices in the preparation and sale of street food is aimed at trainers working with informal street food operators in Africa, whether in support services or as food safety inspectors. It describes good hygienic practices in a context that sorely lacks the resources and infrastructure required of operators in the formal agri-food sector. The manual therefore strives to be pragmatic. It has four parts: an introduction defining the very specific context of its utilization; a second part identifying major sources of food contamination and practices with risk; a third part providing a glossary, practical exercises, illustrations and posters as key training aids; and a final section with technical fact sheets intended to modify and enrich the basic training modules with detailed practical information and concrete examples from FAO projects in the sector.

ISBN 978-92-5-105583-0



9 789251 055830

A0740E/1/06.09/1000