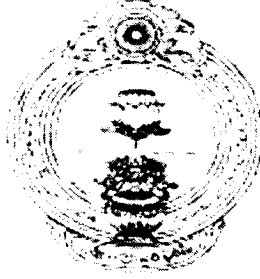


# **INSTITUTIONAL FOOD SERVICE MANAGEMENT**

**M.Sc., FOODS AND NUTRITIONAL SCIENCE,  
First Year, Paper - IV**

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## FOREWORD

Acharya Nagarjuna University, since its establishment in 1976, has been moving ahead in the path of academic excellence, offering a variety of courses and research contributions. The University achieved recognition as one of the eminent universities in the country by gaining A grade from the NAAC 2016. At present Acharya Nagarjuna University is offering educational opportunities at the UG, PG levels to students of 447 affiliated colleges spread over the two districts of Guntur and Prakasam.

The University had started the Centre for Distance Education in 2003-04 with the aim to bring Higher education within the reach of all. The Centre has been extending services to those who cannot join in colleges, cannot afford the exorbitant fees as regular students, and to housewives desirous of pursuing higher studies to study B.A., B.Com, and B.Sc., Courses at the Degree level and M.A., M.Com., M.Sc, M.B.A. and LL.M. courses at the PG level.

For better understanding by students, self-instruction materials have been prepared by eminent and experienced teachers. The lessons have been prepared with care and expertise. However constructive ideas and scholarly suggestions are welcome from students and teachers. Such ideas will be incorporated for the greater efficacy of the distance mode of education. For clarification of doubts and feedback, Weekly classes and contact classes are arranged at UG and PG levels respectively.

I wish the students who pursue higher education through Centre for Distance Education will not only be personally benefited by improving their qualifications but also strive for nation's growth by being a member in Knowledge society. I hope that in the years to come, the Centre for Distance Education will grow in strength by introducing new courses, catering to the needs of people. I congratulate all the Directors, Academic coordinators, Editors, Lesson - Writers, and Academic Counsellors and Non-teaching staff of the Centre who have been extending their services in these endeavours.

**Prof. KOONA RAMJI**  
Vice-Chancellor I/C  
Acharya Nagarjuna University

## **M.Sc., FOOD AND NUTRITIONAL SCIENCE (Course Code-139)**

### **Paper – IV: INSTITUTIONAL FOOD SERVICE MANAGEMENT**

#### **SYLLABUS**

##### **UNIT I**

- Introduction to food service Industry: Principles and functions of food service management, Need and importance, Tools of management, Management of resources
- Types-Hotels and Restaurants: Hotels / Motels, Restaurants, Cafes, Clubs, Wine bars, specialty restaurants, fast foods, street foods, take-away etc.,
- Welfare and Industrial: Residential establishments-Schools, Colleges, Hostels, Old people house, hospitals, nursing homes, Industrial canteens temple feeding and manage.
- Transport: Railway, Airlines and Sea.

##### **UNIT II**

- Infrastructure and equipment: Building plans cum out lays of work places, kitchen spaces, storage spaces, and service area.
- Equipment: Classification of equipment, selection of equipment, Design, Installation, operation and maintenance.
- Food service operations and types of food services: Systems of services, mechanics of waiter services, self services, Vending and mobile catering.

##### **UNIT III**

- Food safety in public catering: Health and hygiene of personnel, Food borne diseases and importance of surveillance, Laws governing food service in public catering, Sanitation of food service in public catering
- Food safety in hotels, restaurants, street foods industry and canteens, hospitals, hostels, airlines railways, temple and mass feeding programmes.
- Food safety awareness programmes to food handlers and consumers.

##### **UNIT IV**

- Financial and personnel Management: Definition and scope of financial management.
- Cost concept, cost control and pricing, Book keeping and accounting
- Personnel Management: Recruitment, selection and induction, job analysis. description – Monitoring work employee facilities and benefits, in service training skills required to operate and manage food service system.



## **CONTENTS .**

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III. Food Safety	112-223
IV. Financial and Personnel Management	224-273

# UNIT—I

*Introduction to Food  
Service Industry*

## INTRODUCTION TO FOOD SERVICE INDUSTRY

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### Objectives

After going through this unit, students will be able to:

- state the principles and functions of food service management;
- discuss the importance and tools of management;
- explain the concept of resource management;
- understand the functioning of various types of food service establishments such as hotel, restaurants, clubs, bars etc.;
- state the functioning of welfare and industrial food service establishments such as hospitals, schools, nursing home, old people house etc;
- explain the food services in railway and airlines.

### STRUCTURE

#### 1.1 Introduction

#### 1.2 Principles and Functions of Food Service Management

#### 1.3 Needs and Importance of Food Service Industry

#### 1.4 Tools of Food Service Management

- Tangible Tools
  - Organisation Chart
  - Job Description and Job Analysis
- Intangible Tools
  - Communication Skills
  - Leadership Quality

#### 1.5 Management of Resources

#### 1.6 Types of Hotels and Restaurants

#### 1.7 Food Service in Welfare and industrial Establishments

- Schools
- Hospitals
- Old People House

#### 1.8 Transport

- Summary
- Glossary
- Review Questions
- Further Readings

## **1.1 INTRODUCTION**

### **NOTES**

The food service industry encompasses those places, institutions, and companies responsible for any meal prepared outside the home. This industry includes restaurants, school and hospital cafeterias, catering operations, and many other formats.

The companies that supply foodservice operators are called foodservice distributors. Foodservice distributors sell goods like small wares (kitchen utensils) and bulk foods.

Some companies manufacture products in both consumer and foodservice versions. The consumer version usually comes in individual sized packages with elaborate label design for retail sale. The foodservice version is packaged in a much larger industrial size and often lacks the colorful label designs of the consumer version.

Foodservice sales to restaurants and institutions are estimated to be approximately \$400 Billion, about equal with consumer sales of foods through grocery outlets. The foodservice industry is one of the largest employers in the United States.

Foodservice is defined as the sale of food and drinks for immediate consumption either on the premises from which they were bought, or in designated eating areas shared with other foodservice operators, or in the case of takeaways transactions, freshly prepared food for immediate consumption. The definition excludes sales through vending machines and is restricted to sales in specific foodservice channels (please see channel definitions below).

All market values are given in Operator Buying Prices, that is the amount spent by foodservice operators on the food and drink that they serve and not the amount the consumers spend on food and drinks (Operator Selling Prices - OSPs) in these channels. The difference is the mark up the foodservice operator adds in order to cover their other costs and generate a profit. This therefore values the market in terms of the amount of money for which food and drinks manufacturers are competing.

The market is broken down in to four segments: Cafes & Restaurants, Fastfood, Cost and Other. Cafes & Restaurants includes Cafes, Pubs & Bars, Full Service Restaurants, Hotels and Retail locations; Fastfood includes Quick Service Restaurants, Takeaways, Street Vendors and Leisure Locations (cinemas, theatres etc.); Other includes Nightclubs and sales on-board boats, planes, trains or coaches; the cost segment is characterised by the fact that a subsidy is paid (either directly or indirectly) to one of the actors involved in the transaction, or where the final consumer pays for the food at its actual cost (as opposed to a price that adds some margin to its basic cost). The cost sector includes the following channels— workplace locations, education locations, hospitals and welfare & services locations.

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India is the world's second largest producer of food next to China, and has the potential of being the biggest with the food and agricultural sector. The total food production in India is likely to double in the next ten years and there is an opportunity for large investments in food and food processing technologies, skills and equipment, especially in areas of Canning, Dairy and Food Processing, Specialty Processing, Packaging, Frozen Food/Refrigeration and Thermo Processing. Fruits & Vegetables, Fisheries, Milk & Milk Products, Meat & Poultry, Packaged/Convenience Foods, Alcoholic Beverages & Soft Drinks and Grains are important sub-sectors of the food processing industry. Health food and health food supplements is another rapidly rising segment of this industry which is gaining vast popularity amongst the health conscious. India is one of the world's major food producers but accounts for less than 1.5 per cent of international food trade.

India's food processing sector covers fruit and vegetables; meat and poultry; milk and milk products, alcoholic beverages, fisheries, plantation, grain processing and other consumer product groups like confectionery, chocolates and cocoa products, Soya-based products, mineral water, high protein foods etc. It covers an exhaustive database of an array of suppliers, manufacturers, exporters and importers widely dealing in sectors like the Food Industry, Dairy processing, Indian beverage industry etc. It also covers sectors like dairy plants, canning, bottling plants, packaging industries, process machinery etc.

The most promising sub-sectors includes Soft-drink bottling, Confectionery manufacture, Fishing, aquaculture, Grain-milling and grain-based products, Meat and poultry processing, Alcoholic beverages, Milk processing, Tomato paste, Fast-food, Ready-to-eat breakfast cereals, Food additives, flavors etc.

The Indian food service industry, which refers to as the sales of food and drinks bought for immediate consumption on the premises, reached to nearly US\$ 6 Billion in 2007. With an extremely large and young population in excess of 1.1 Billion people, growing income level, busier lifestyle, and changing consumer eating habits largely influenced by western cuisine, food service industry in India is projected to experience one of the fastest rates of growth in the Asia-Pacific region in near term, says recent research report.

The study anticipates the growth to be driven by both foreign and domestic companies, who are pouring substantial investment in Indian food service industry, mainly to put the infrastructure in place so as to capitalize on this large and rapidly growing market.

While new domestic players are expected to debut in the market, a number of international players are also anticipated to enter India. Some of the major brands that are expected to foray include Burger King, Church's Chicken, and Starbucks. The existing brands, like McDonald's, Café Coffee Day and KFC have also outlined their expansion strategies to move beyond the metros. As the industry players continue to create strong regional brands, outlet franchising is likely to become more common over the next few period, reveals our report.

## 1.2 PRINCIPLES AND FUNCTIONS OF FOOD SERVICE MANAGEMENT

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The Principles of Food Service Management are the essential, underlying factors that form the foundations of successful management. According to Henri Fayol (1841-1925) in his book *General and Industrial Management* (1916), there are fourteen 'principles of management' which can be applied to any field.

Management principles are statements of fundamental truth. These principles serve as guidelines for decisions and actions of managers. They are derived through observation and analysis of events which managers have to face in practice.

#### *1. Division of Work*

The specialization of the workforce, creating specific personal and professional development within the labour force and therefore increasing productivity; leads to specialization which increases the efficiency of labour. By separating a small part of work, the workers speed and accuracy in its performance increases. This principle is applicable to both technical as well as managerial work in food service industry.

#### *2. Authority and Responsibility*

The issue of commands followed by responsibility for their consequences. Authority means the right of a superior to give order to his subordinates; responsibility means obligation for performance. This principle suggests that there must be parity between authority and responsibility. They are co-existent and go together, and are two sides of the same coin.

#### *3. Discipline*

Discipline refers to obedience, proper conduct in relation to others, respect of authority, etc. It is essential for the smooth functioning of the food service industry.

#### *4. Unity of Command*

This principle states that every subordinate should receive orders and be accountable to one and only one superior. If an employee receives orders from more than one superior, it is likely to create confusion and conflict.

Unity of Command also makes it easier to fix responsibility for mistakes.

#### *5. Unity of Direction*

All those working in the same line of activity must understand and pursue the same objectives. All related activities should be put under one group, there should be one plan of action for them, and they should be under the control of one manager.

It seeks to ensure unity of action, focusing of efforts and coordination of strength.

### **6. Subordination of Individual Interest**

The management must put aside personal considerations and put company objectives first. Therefore the interests of goals of the organization must prevail over the personal interests of individuals.

### **7. Remuneration**

Workers must be paid sufficiently as this is a chief motivation of employees and therefore greatly influences productivity. The quantum and methods of remuneration payable should be fair, reasonable and rewarding of effort.

### **8. The Degree of Centralization**

The amount of power wielded with the central management depends on company size. Centralization implies the concentration of decision making authority at the top management. Sharing of authority with lower levels is called decentralization. The organization should strive to achieve a proper balance.

### **9. Scalar Chain**

Scalar Chain refers to the chain of superiors ranging from top management to the lowest rank. The principle suggests that there should be a clear line of authority from top to bottom linking all managers at all levels. It is considered a chain of command. It involves a concept called a "gang plank" using which a subordinate may contact a superior or his superior in case of an emergency, defying the hierarchy of control. However the immediate superiors must be informed about the matter

### **10. Order**

Social order ensures the fluid operation of a company through authoritative procedure. Material order ensures safety and efficiency in the workplace.

### **11. Equity**

Employees must be treated kindly, and justice must be enacted to ensure a just workplace. Managers should be fair and impartial when dealing with employees.

### **12. Stability of Tenure of Personnel**

The period of service should not be too short and employees should not be moved from positions frequently. An employee cannot render useful service if he is removed before he becomes accustomed to the work assigned to him.

### **13. Initiative**

Using the initiative of employees can add strength and new ideas to an organization. Initiative on the part of employees is a source of strength for the organization because it provides new and better ideas. Employees are likely to take greater interest in the functioning of the organization.

#### **14. Team Spirit**

This refers to the need of managers to ensure and develop morale in the workplace; individually and communally. Team spirit helps develop an atmosphere of mutual trust and understanding.

These can be used to initiate and aid the processes of change, organization, decision making, skill management and the overall view of the management function.

Fayol also divided the management function into five key roles:

- To organise
- To plan and forecast
- To command
- To control
- To coordinate

Performance of food service management is necessarily a subject to its functions. Earlier management was segregated into five functions which were-

- Planning
- Organizing
- Staffing
- Directing and
- Controlling.

With changing times and increasing business complexities, the functions of management also increased and functions like reporting, co-ordinating, budgeting etc. was identified. Primarily, this step was taken to ensure departmentalization of management functions so that effectiveness and efficiency could be enhanced. However, different management thinkers differ on the numbers of functions. Essentially a creative problem solving methodology, the purpose of management is achieved through these functions. The basic objective of these functions is maximum utilization of resources available at company's disposal so that organization's mission and policies could be achieved in the best possible way.

As every function analysed, it is found that planning is the first function which is basically a logical thinking process that decides what needs to be done in order to achieve organization's goals and objectives. It focuses on the broader perspective of the business as well as taking into consideration, the tactical methods to get the desired results.

Organizing is about setting up and maintaining the internal organizational structure in accordance with objectives mentioned in planning stage. It also

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involves assigning tasks to various individuals for the larger goal of organization's missions and objectives.

Staffing is the process of choosing right people for organization. It can be associated with human resource management and involves recruitment, hiring, training and compensating the workforce.

Directing is guiding people in the organization through the means of counselling, instructing, motivating and various other modes of communication. It helps in channelizing the activities and conduct of employees so that organizational goals can be accomplished.

Controlling is the sum total of process which ensures all the plans are executed and implemented in the desired way. It also decides about whether some corrective and preventive methods need to be taken. It is meant to ascertain problem areas and remedial measures.

Apart from these, minor functions include reporting, budgeting and co-ordinating which are designed to perform specific functions.

### ***Food Manager***

Food Management is a general term for a number of career paths in food preparation and food service management. It encompasses restaurant operation and institutional food services. Food managers plan meals, control budgets and costs and are responsible for new product development and quality assurance.

#### **What is a Food Manager?**

A food manager usually works for a restaurant, catering business, food service commissary or institutional food service. The food manager is responsible for setting up and following systems to ensure food quality from a taste, nutrition and food safety viewpoint. He may be responsible for any aspect of the food delivery including budgeting and cost controls, menu planning and food preparation.

#### **Skills Needed**

The food manager should be skilled in food preparation techniques. A basic background in accounting and marketing are helpful, as well as communication and management skills. Stamina is required because food managers often work long hours on their feet, under the pressure of deadlines. The ability to communicate and work well with a team are essential.

#### **Nature of Work**

Food service managers are responsible for the daily operations of restaurants and other food service establishments that prepare and serve meals and beverages to customers. Besides coordinating activities among various departments, such as kitchen, dining room, and banquet operations, food service managers ensure that customers are satisfied with their dining experience. In addition, they oversee

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the inventory and ordering of food, equipment, and supplies and arrange for the routine maintenance and upkeep of the restaurant's equipment and facilities. Managers generally are responsible for all of the administrative and human-resource functions of running the business, including recruiting new employees and monitoring employee performance and training.

Managers interview, hire, train, and when necessary, fire employees. Retaining good employees is a major challenge facing food service managers. Managers recruit employees at career fairs, contact schools that offer academic programs in hospitality or culinary arts, and arrange for newspaper advertising to attract additional applicants. Managers oversee the training of new employees and explain the establishment's policies and practices. They schedule work hours, making sure that enough workers are present to cover each shift. If employees are unable to work, managers may have to call in alternates to cover for them or fill in themselves when needed. Some managers may help with cooking, clearing tables, or other tasks when the restaurant becomes extremely busy.

Food service managers ensure that diners are served properly and in a timely manner. They investigate and resolve customers' complaints about food quality or service. They monitor orders in the kitchen to determine where backups may occur, and they work with the chef to remedy any delays in service. Managers direct the cleaning of the dining areas and the washing of tableware, kitchen utensils, and equipment to comply with company and government sanitation standards. Managers also monitor the actions of their employees and patrons on a continual basis to ensure the personal safety of everyone. They make sure that health and safety standards and local liquor regulations are obeyed.

In addition to their regular duties, food service managers perform a variety of administrative assignments, such as keeping employee work records, preparing the payroll, and completing paperwork to comply with licensing laws and tax, wage and hour, unemployment compensation, and Social Security laws. Some of this work may be delegated to an assistant manager or bookkeeper, or it may be contracted out, but most general managers retain responsibility for the accuracy of business records. Managers also maintain records of supply and equipment purchases and ensure that accounts with suppliers are paid.

Managers tally the cash and charge receipts received and balance them against the record of sales. They are responsible for depositing the day's receipts at the bank or securing them in a safe place. Finally, managers are responsible for locking up the establishment, checking that ovens, grills, and lights are off, and switching on alarm systems.

Technology influences the jobs of food service managers in many ways, enhancing efficiency and productivity. Many restaurants use computers to track orders, inventory, and the seating of patrons. Point-of-service (POS) systems allow servers to key in a customer's order, either at the table using a hand-held device,

or from a computer terminal in the dining room, and send the order to the kitchen instantaneously so preparation can begin. The same system totals and prints checks, functions like a cash register, connects to credit card authorizers, and tracks sales. To minimize food costs and spoilage, many managers use inventory-tracking software to compare sales records with a record of the current inventory. Some establishments enter an inventory of standard ingredients and suppliers into their POS system. When supplies of particular ingredients run low, they can be ordered directly from the supplier using preprogrammed information. Computers also allow restaurant and food service managers to keep track of employee schedules and paychecks more efficiently.

Food service managers use the Internet to track industry news, find recipes, conduct market research, purchase supplies or equipment, recruit employees, and train staff. Internet access also makes service to customers more efficient. Many restaurants maintain Web sites that include menus and online promotions, provide information about the restaurant's location, and offer patrons the option of making a reservation.

In most full-service restaurants and institutional food service facilities, the management team consists of a general manager, one or more assistant managers, and an executive chef. The executive chef is responsible for all food preparation activities, including running kitchen operations, planning menus, and maintaining quality standards for food service. In limited-service eating places, such as sandwich shops, coffee bars, or fast-food establishments, managers, not executive chefs, are responsible for supervising routine food preparation operations. Assistant managers in full-service facilities generally oversee service in the dining rooms and banquet areas. In larger restaurants and fast-food or other food service facilities that serve meals daily and maintain longer business hours, individual assistant managers may supervise different shifts of workers. In smaller restaurants, formal titles may be less important, and one person may undertake the work of one or more food service positions. For example, the executive chef also may be the general manager or even sometimes an owner.

In restaurants where there are both food service managers and executive chefs, the managers often help the chefs select successful menu items. This task varies by establishment depending on the seasonality of menu items, the frequency with which restaurants change their menus, and the introduction of daily, weekly, or seasonal specials. Many restaurants rarely change their menus while others make frequent alterations. Managers or executive chefs select menu items, taking into account the likely number of customers and the past popularity of dishes. Other issues considered when planning a menu include whether there was any food left over from prior meals that should not be wasted, the need for variety, and the seasonal availability of foods. Managers or executive chefs analyze the recipes of the dishes to determine food, labor, and overhead costs, work out the

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portion size and nutritional content of each plate, and assign prices to various menu items. Menus must be developed far enough in advance that supplies can be ordered and received in time.

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Managers or executive chefs estimate food needs, place orders with distributors, and schedule the delivery of fresh food and supplies. They plan for routine services or deliveries, such as linen services or the heavy cleaning of dining rooms or kitchen equipment, to occur during slow times or when the dining room is closed. Managers also arrange for equipment maintenance and repairs, and coordinate a variety of services such as waste removal and pest control. Managers or executive chefs receive deliveries and check the contents against order records. They inspect the quality of fresh meats, poultry, fish, fruits, vegetables, and baked goods to ensure that expectations are met. They meet with representatives from restaurant supply companies and place orders to replenish stocks of tableware, linens, paper products, cleaning supplies, cooking utensils, and furniture and fixtures.

### **1.3 NEEDS AND IMPORTANCE OF FOOD SERVICE INDUSTRY**

As a key link in the food chain, the foodservice industry takes seriously its role to safeguard the health of consumers and ensure that comprehensive controls are in place throughout the food supply system. Food safety is a top priority for the foodservice industry and the vast majority of foodservice establishments are safe and clean. The industry's commitment to protect the health of consumers is evident in the investments by operators to ensure their processes are safe and their employees trained. More and more effort is being directed at food safety – from better screening of suppliers to adopting more effective risk management strategies and procedures. It is of paramount importance for foodservice companies to protect their brand names and their establishment's reputation. A foodborne illness incident in a restaurant could irrevocably tarnish an establishment's or company's image and the industry as a whole.

Food service management is the science of selecting and preparing food items and the presenting of that product to the consumer. Most frequently, the term is applied to the restaurant industry rather than the grocery or agricultural industry. The food service manager is responsible for overseeing not only the preparation of the product, he also manages the dining area, guest relations, and cash flow. He decides the menu within certain guidelines, makes sure the chef is informed of the choices, insures cleanliness of the establishment, and knows his wait staff. He is responsible for the smooth flow of the dining room and the satisfaction of the customer. He is an expert in time management and waste control.

- Food services and drinking places provide many young people with their first jobs; more than 1 in 5 workers were aged 16 to 19 in 2006, about 5 times the proportion for all industries.

- Cooks, waiters and waitresses, and combined food-preparation and serving workers comprised nearly 3 out of 5 workers in this industry.
- About 2 out of 5 employees work part time, more than twice the proportion for all industries.
- Job opportunities will be plentiful because large numbers of young and part-time workers will leave their jobs in the industry, creating substantial replacement needs.

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Typical establishments have well-designed kitchens with state-of-the-art cooking and refrigeration equipment and proper electrical, lighting, and ventilation systems to keep everything functioning. However, kitchens usually are noisy, and may be very hot near stoves, grills, ovens, or steam tables. Chefs, cooks, food preparation workers, dishwashers, and other kitchen staff may suffer minor cuts or burns, be subject to scalding or steaming liquids, and spend most of their time standing in a relatively confined area. Chefs and cooks are under extreme pressure to work quickly to stay on top of orders in a busy restaurant. The fast pace requires employees to be alert and quick-thinking, but also may result in muscle strains from trying to move heavy pots or force pressurized containers open without taking the proper safety precautions.

Dining areas also may be well-designed, but can become crowded and noisy when busy. Servers, attendants, and other dining-room staff, such as bartenders and hosts or hostesses, need to protect against falls, spills, or burns while serving diners and keeping service areas stocked.

Most food services and drinking places workers spend most of their time on their feet—preparing meals, serving diners, or transporting dishes and supplies throughout the establishment. Upper body strength often is needed to lift heavy items, such as trays of dishes, platters of food, or cooking pots. Work during peak dining hours can be very hectic and stressful.

Employees who have direct contact with customers, such as waiters and waitresses or hosts and hostesses, should have a neat appearance and maintain a professional and pleasant manner. Professional hospitality is required from the moment guests enter the restaurant until the time they leave. Sustaining a proper demeanor during busy times or over the course of a long shift may be difficult.

### **1.4 TOOLS OF FOOD SERVICE MANAGEMENT**

As the term indicates, Tools of Management refers to materials which have been developed by managers in the past and used as an aid to effective management. These vary with the level of management and therefore each level uses different aids. Tools of management can be distinctly classified into two categories namely, tangible and intangible tools. These are therefore as diverse in form and application as the number and type of establishments and the creative

ability of their managers to adapt the available tools or develop new ones to suit their particular management situations.

**Tangible Tools**

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The word tangible indicates that these tools are in forms that can act as reference points for future decision making by managers who can retrieve them for use in particular situations for making their own decisions by adopting or adapting them as considered appropriate. Tangible tools are those aids to management that have been developed by experience of managers in different work situations and organisations and represent a collection of those tools that resulted in successful decisions in the past. These are usually available in organisations in the form of organisation charts, job descriptions and specifications, inventory records, standard costing sheets, staff appraisal forms, budget statements, price lists, work schedules, staff appraisal forms, menu plans, contracts of employment, medical forms and the like. Some of these have been indicated in Fig. 1. and briefly discussed with examples.

Figure 1 indicates a few tangible tools prepared and used by managers to perform their functions efficiently. Every situation demands the use of different tools which are devised by managers or modified to suit various conditions for decision making.

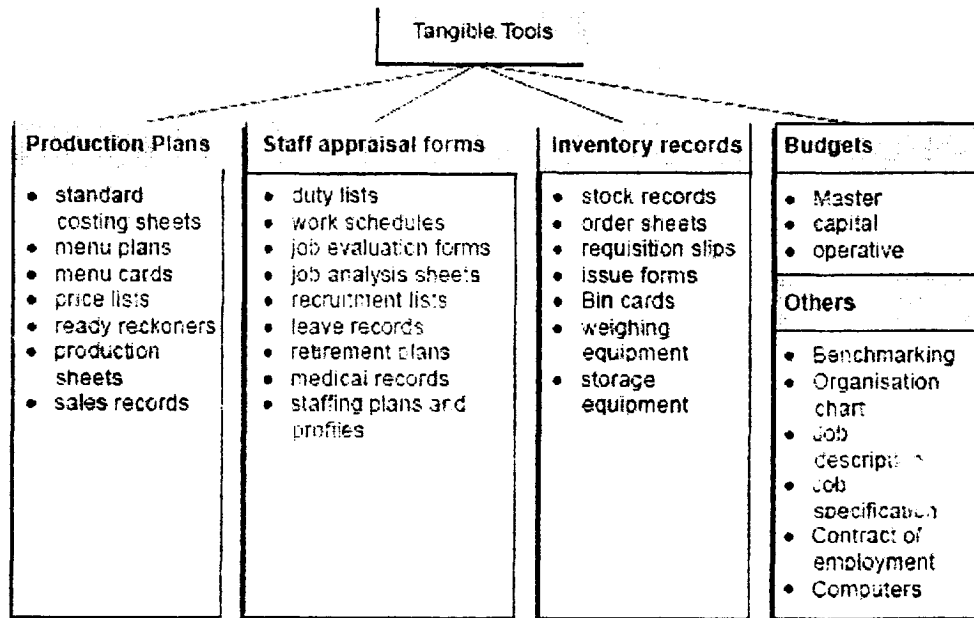


Fig. 1 Tangible tools of management

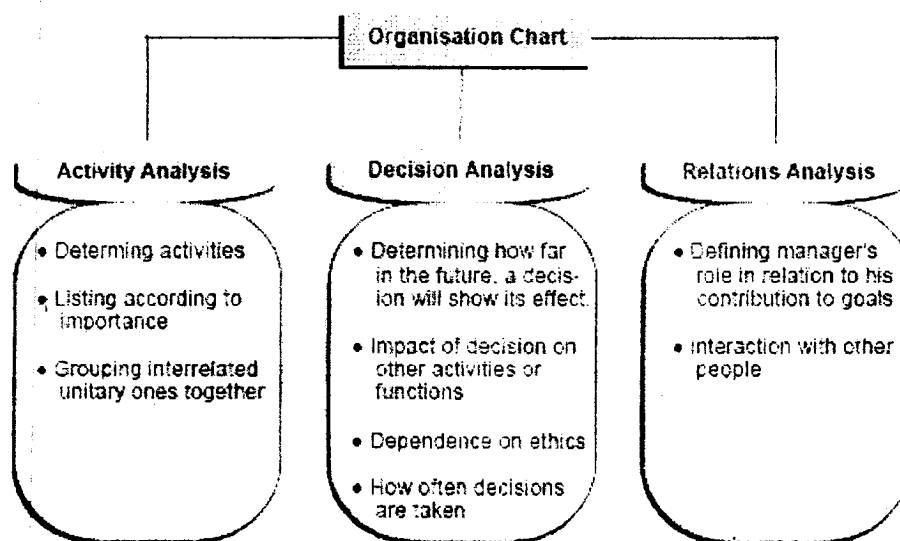
**Organisation Chart**

The basic tool for any establishment is the organisation chart, which shows the structure of an organisation in terms of how the various units or departments are linked together.

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The organisation structure is the outcome of putting people and jobs together and therefore represents the entire team involved in the running of the establishment at both operational and management levels. The chart indicates activity-authority relationships which exist in the establishment. According to Drucker, an organisational structure can be charted out by using three types of analysis. These have been represented in Fig. 2.

An organisation chart tells us about the subordinate-superior relationships and the lines of decision making authority that exist in an establishment, in other words who reports to whom. It also establishes the existence of unitary or dual command as the case may be, helping to correct any inconsistencies that may show up on the chart. Any organisation that has a detailed organisation chart can be associated with a well set structure, having functions logically arranged to achieve maximum efficiency. These formal arrangements are based on formal leadership patterns and methods of communication, with the hope of achieving proper coordination, because people tend to accept their positions in the organisation as charted out.



*Fig. 2 Factors for preparation of organisation charts*

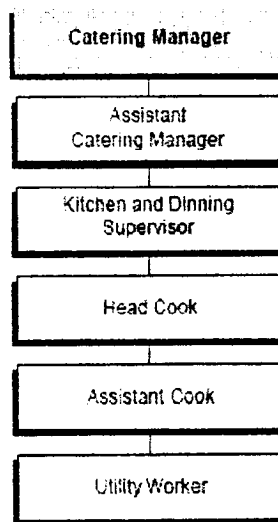
The two types of authority relationships that most often exist in food services are line and line-staff relationships. In the former, each individual is responsible to the person ranking above him on the organisational chart. Thus, authority and responsibility are passed downward. In the latter, that is line and staff pattern, specialists are positioned at various levels to advise those along the line structure because the activities of the establishment become too diversified for proper functioning and control. The expertise of staff is utilised to maximise the efficiency of line personnel to the utmost. However, a number of problems can arise if the

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information channels in an establishment strictly follow the lines of authority. In catering particularly, where staff are expected to fill in for others at short notice, specialist departments can prove futile if informal channels of communication do not develop.

Organisation structures can grow in two directions. Vertically and horizontally. In vertical structured organisations the person above assigns the work to his immediate subordinates down the line. Figure 3 indicates vertically structured food service establishment.

As the length of the structure increases, coordinating the activities of the establishment become difficult, so the duties get divided separately for each unit. This results in a horizontally spread structure, as shown in Fig. 4.



*Fig. 3 A vertically structured food service organisation*

An organisation chart thus indicates functional units as well. Functions and positions are represented graphically by blocks. The solid lines indicate formal authority relationships while dotted ones represent informal relationships.

Organisation structures may also indicate whether authority is centralised or decentralised. For example, if the control and decision-making function lies solely at the top level it is completely centralised. Which means all decisions must come from the highest level. Structures may also be flat or tall which indicate the span of control at each level of the establishment. Tall structures have a shorter span of control, that is, each supervisor or manager has fewer number of people under his authority than in a flat structure. In flat structures therefore it is more difficult to supervise closely.

While an organisation chart can be used as a tool for managing it also has some limitations, which are enumerated below:

NOTES

- (a) The charting only shows formal authority relationships, omitting the many informal ones which develop at work and become a powerful means of communication between people. This is because these develop spontaneously between people and emerge within groups not because of their positions but because they possess some personal qualities like age, competence, charisma and behavioural patterns that command respect.
- (b) The chart also does not indicate how much authority is vested in each position.
- (c) Many charts indicate structures as they are expected to be, even though they may not be so in reality. A chart therefore, does not necessarily indicate an efficient organisation of work in an establishment.
- (d) The structure does not indicate the nature of management activity taking place at each level, whether operational, creative or administrative.
- (e) The major disadvantage is that people begin to interpret authority relationships as differences in status. Sometimes lines of authority are drawn at a lower level on the chart in some units than in others, or because a particular person reports to someone higher up in the organisation, his status may be confused.

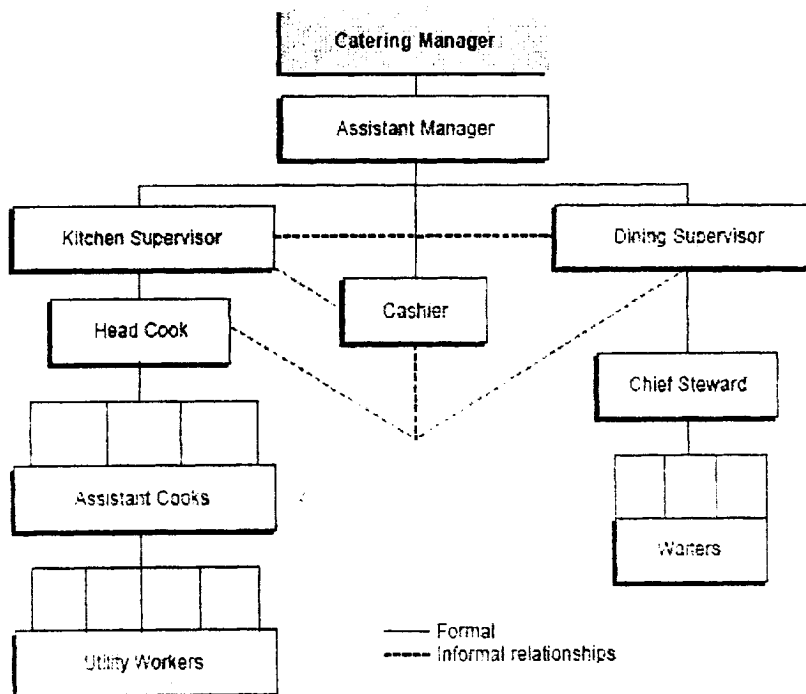


Fig. 4 Horizontal organisation structure

Some organisational charts for catering establishments of different sized establishments are indicated in Figs. 5 to 9.



NOTES

It will be noticed that in a dhaba, the relationships between manager and other staff are flexible, being both formal and informal, as is expected where staff numbers are limited and all jobs are tackled by everyone on a personal level. It is worth mentioning here that the dhaba or roadside café in India is a very popular eating place and traditionally prepares food from raw ingredients and serves them to travellers piping hot, giving at the same time a very personalised service, by preparing chappatis in forms requested by customers.

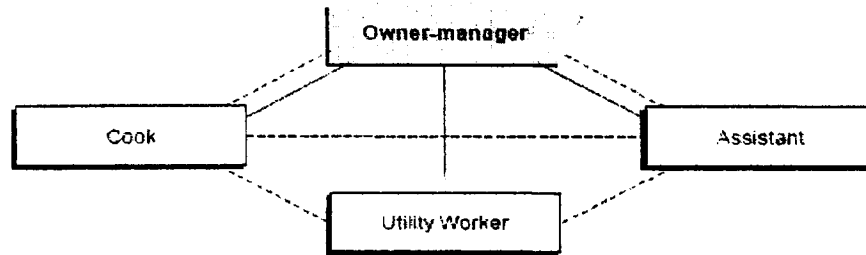


Fig. 5 Organisation chart of a Dhaba

The number of personnel at operative levels increase according to the size of the establishment as illustrated through Figs. 6 to 9. It will be noticed that while formal relationships do not exist between the service staff and kitchen personnel, informal relationships get established if pleasant relations are harboured by managers who can then use these channels to advantage for greater efficiency.

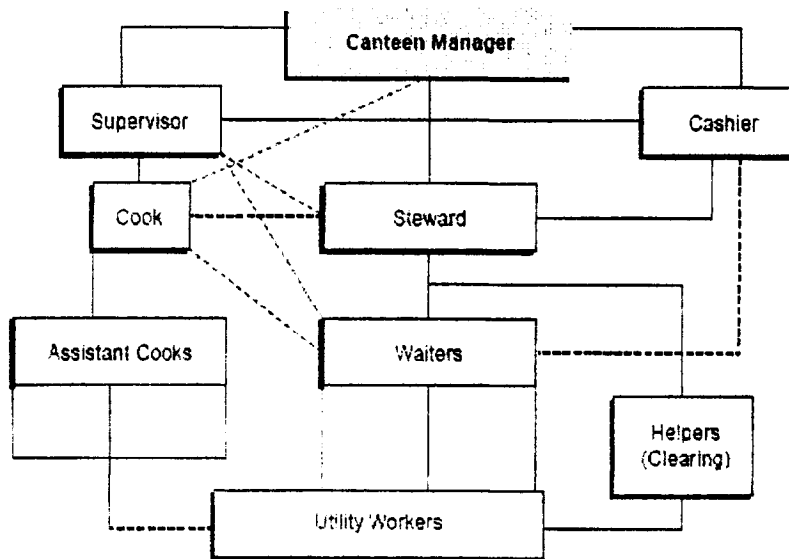


Fig. 6 Organisation structure of a canteen

The position description however, provides a standard against which to judge if a position is at all necessary, and what its organisational level and location in the structure should be. Figure 9 shows that additional staff are required to

place or load meals on board aircraft, apart from extra workers needed for the special packing and portioning of food which is done at ground level. As the organisation grows larger more and more levels of authority are formed and work gets decentralised, as also its control. The Unit General Manager in Fig. 9 represents the manager of a flight catering unit in a capital city.

NOTES

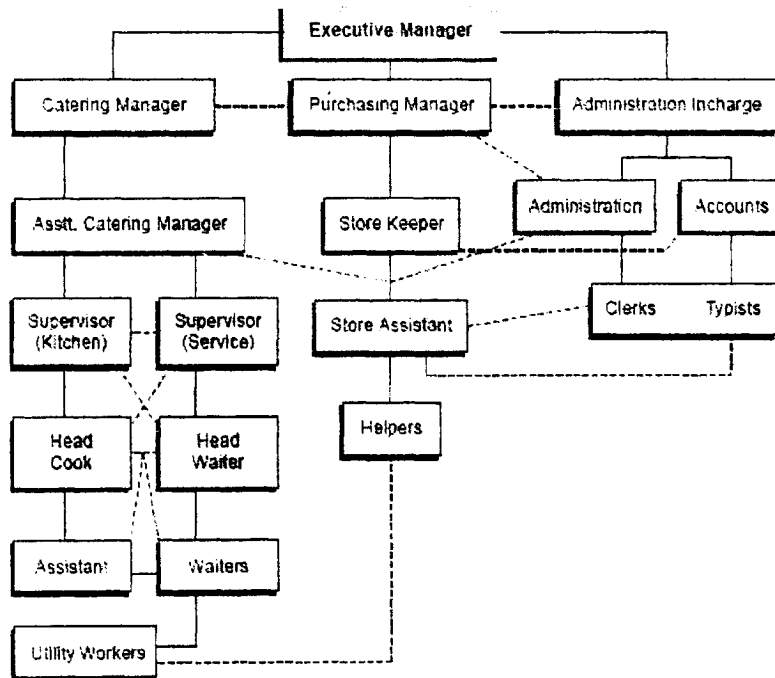


Fig. 7 Structure of a large restaurant

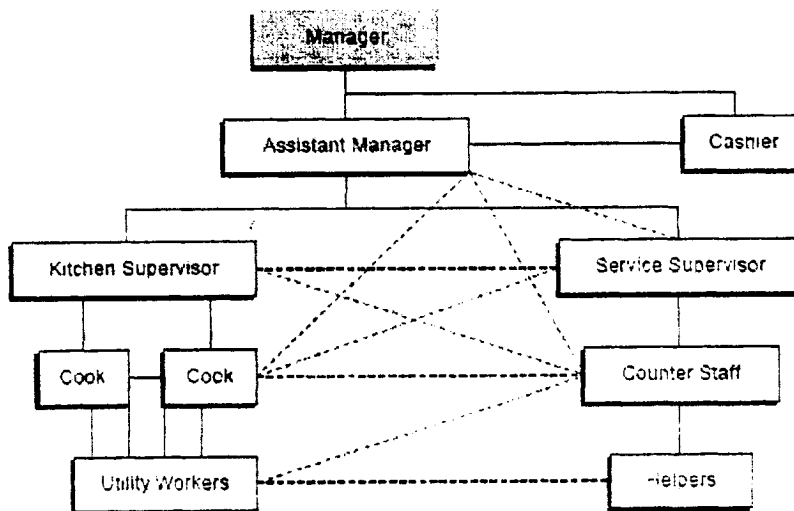


Fig. 8 Organisation structure of a snack bar

Thus, the organisation chart is a useful but limited model. It identifies tasks, titles and the planned relationships between these tasks. But does not show informal communication channels, cliques and actual activities performed in the organisation.

## NOTES

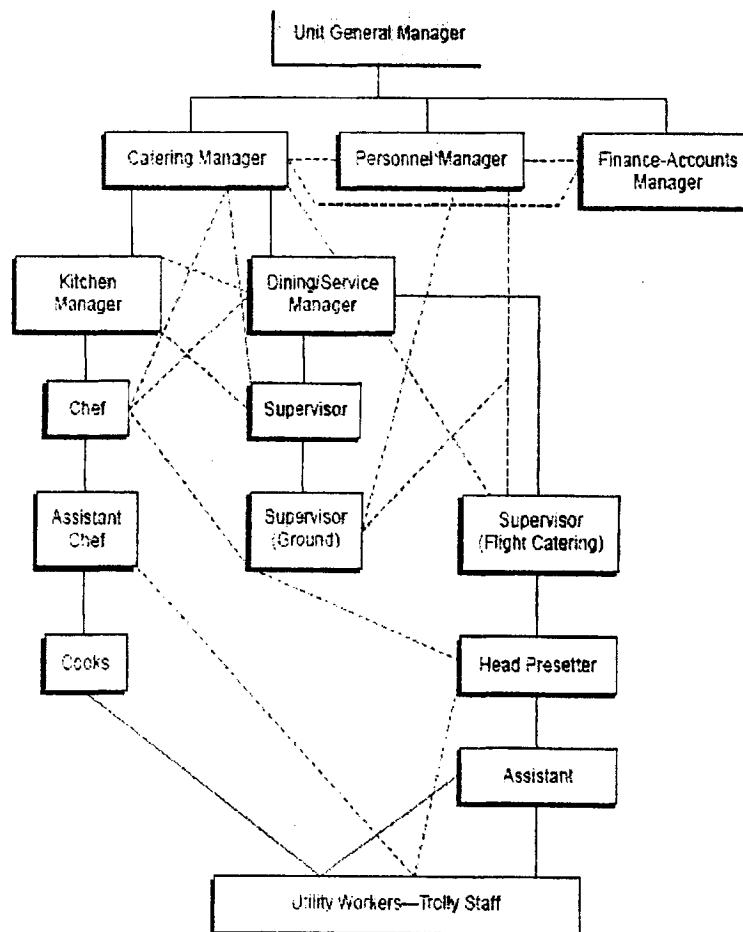


Fig. 4.9 Organisation chart of a flight catering establishment

Within the structures of different organisations illustrated, other tools required by a food service manager for efficient management are job description, job specification, work and time schedule, job analysis, production and service analysis statements and budgets as indicated in Fig. 1 according to the various levels in an establishment. Some of these tools are discussed in details below.

### Job Description

Job description refers to the definition of a job in a precise manner indicating exactly what is to be done by people who are occupying or would be occupying a job position in an establishment. A well defined job brings about greater certainty of what is expected in terms of the performance, and when actual results match expected ones, both morale and efficiency are raised. However, a job should not

be too narrowly defined as it leaves no scope for using creativity. On the other hand, too vague a description makes it difficult to understand and handle the job, leading to frustration and loss of control.

Job descriptions are therefore effective tools for managing at every level of the organisation structure. As one proceeds along the chain of command towards the operative level in the organisation, job descriptions need to be more detailed, clear-cut and expressed in a language and form which can be understood by less educated workers. At higher levels people have a better knowledge of the work for which they are appointed and are expected to have a higher mental calibre. Besides, the results of their work are not immediately seen as in the case of operative staff. As the proportion of mental work increases, they have greater flexibility in timing their work, and can adjust their schedules so long as they go on feeding the information required by operating staff at the right time.

This can be seen when we look at the job of the head cook vis-à-vis that of a catering manager's. While a chef has to report on duty at 8 a.m. to complete his various jobs and supervise those of his team in the kitchen for lunch service, the manager can work on a more flexible schedule so long as the menus are planned in advance, food materials ordered in time and meals checked for quality before they are served to customers.

**Table 1 Tools of management used at different levels of a catering establishment**

<i>Organisation Level</i>	<i>Tools Used</i>	<i>Responsibility</i>
Kitchen production and service	Job description, job specification, time and work schedules. Staff duty lists/rotas, menus	Responsible for actually producing and serving food and meals.
Line management	Job analysis sheets, production plans, staff rotas, sales analysis records, cyclic menus, leadership style.	Overall supervision of kitchen and service points, requisitioning of ingredients and issue from stores, directing coordinating,
Middle management	Plans for staffing, menus, absenteeism records, price lists, inventory records, order sheets, standard costing sheets, budget statement, etc.	controlling, preparing staff duty lists, staff requirements, ordering food and materials, planning profitable menus, arranging for parties preparing operating budgets

**NOTES**

Top management

Plans for sales,  
purchases, recruitment,  
expansion, etc., decision-  
making, communication,  
leadership

Setting goals, policy-  
making for manpower  
planning introducing  
technology, planning  
for profits,  
diversification,  
networking

**NOTES**

It is also important to note that better communication through job descriptions is necessary whenever one is dealing with a group of people having diverse capabilities. As one goes up the organisational ladder job descriptions become more broad-based, stating only the functional aspect of the job. It need not necessarily spell out the manner (through clear-cut steps) in which the function is to be performed or goal achieved because the communication is a one to one communication with the superior, and the worker can always clarify any point verbally with his superior. Examples of job descriptions for two levels appear in Figs. 10 and 11.

It will be noticed that the job description of a cook is more comprehensive. It also acts as a check-list for staff who may forget to do a job till it becomes routine for them. On the other hand, the job description of the catering manager is more general, expecting him to work to an efficiency guided by his experience. He is, however, given an idea of what is expected of him in terms of arranging functions, bar service and meals for staff.

It can therefore be generalised, that job descriptions are not only important aids to job performance at all levels of an organisation but they help to draw up recruitment, set up salary levels commensurate with work involved, provide the guidelines for training and aid in controlling activities within the establishment. Job descriptions also remove conflicts between people in terms of specifying each person's job responsibilities.

**Title** *Catering Supervisor*

**Code No.**

**Establishment**

**Job Summary**

The job carries with it the responsibilities for:

- (a) Efficient operation of catering facilities for management, staff and employees.
- (b) Arrangement of functions as required.
- (c) Administration of bar facilities.

<p>(d) Liaising with related departments.</p> <p>(e) Holding additional charge in the absence of the superior.</p> <p><b>Performance Requirement</b></p> <p>(a) Responsibilities as above.</p> <p>(b) Using initiative in development of menus and methods of work.</p> <p>(c) Developing good working relations with staff, guests, suppliers and visitors.</p> <p>(d) Evaluating work and staff performance, and ensuring maximum utilisation of resources.</p> <p>(e) Ensuring optimum equipment use and maintenance.</p> <p><b>Supervision</b></p> <p>(a) Supervision of all production and service area work.</p> <p>(b) Checking for quality.</p> <p>(c) Close check on service at peak hours to look for problems such as queueing, delay in service.</p> <p>(d) Getting feedback from customers.</p> <p>(e) Sorting out customer grievances on the spot.</p>
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Fig. 10 Job description of a catering supervisor

### Job Specification

A job specification is a statement indicating standards to be achieved for a particular job. It also covers duties expected to be performed, working conditions in which the job would be carried out, and the qualifications required. A job specification is generally used as a tool for selection of the right employee for a particular job. Small establishments may use the job description instead of the job specification for the purpose, because closer supervision is possible at work, to check if expected standards of performance are achieved at every stage of production and service. A sample job specification is given in Fig. 12.

<p><b>Title</b> Head Chef</p> <p><b>Code Number</b></p> <p><b>Establishment</b></p> <p><b>Job Summary</b></p> <p>The job involves:</p> <p>(a) Planning menus with catering supervisor.</p> <p>(b) Requisitioning ingredients for food preparation.</p> <p>(c) Checking deliveries with requisition slips.</p>
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**NOTES**

- (d) Checking quality of food received and getting it issued for use or storage in kitchen as required.
- (e) Alloting work to assistant cooks.
- (f) Guiding them in preparation and processing techniques.
- (g) Preparing main dishes.
- (h) Finishing all food.
- (i) Testing for acceptability.
- (j) Dishing out, portioning and holding food at the right temperatures till required for service.
- (k) Getting next day's menus checked, requisitioning ingredients and sending requests to stores for issue.
- (l) Getting Preparations done and refrigerated for use next morning.
- (m) Getting kitchen cleared up at the end of each day, switching off gas, electricity and water points.
- (n) Locking up, or handing over work to the person taking over for the next shift as the case may be.

*Fig. 11 Job description of a head chef*

<b>Job Title:</b>	Cook
<b>Department:</b>	Kitchen
<b>Supervisor:</b>	Catering Manager
<b>Job summary:</b>	As under job description
<b>Education:</b>	Craft course in catering
<b>Experience required:</b>	At least two years experience in an institutional kitchen
<b>Knowledge and skills:</b>	Knowledge of Indian and continental cooking
<b>Personal standards:</b>	Clean appearance and habits
<b>References required:</b>	One at work and one personal
<b>Hours of work:</b>	40 hours a week
<b>Promotional opportunities:</b>	To head cook, and with extra qualification to kitchen supervisor.
<b>Ability tests:</b>	Actual performance tests to be passed to expected standards.

*Fig. 12 Sample job specification*

**Work Schedule**

This represents an outline of the work to be done by an employee. When this is to be completed within a time schedule as well, then it is referred to as a time and activity plan.

## NOTES

For proper scheduling it is important to analyse tasks which are to be performed on a particular day. In catering, the production day can be divided into low and high production periods, and an understanding of these is important in scheduling tasks. As a rule tasks requiring minimum effort, time and attention, should be scheduled or planned for performance during periods of low production, as these follow high pressure work periods of peak-hour production and service. Besides providing the necessary relaxation, such scheduling gives a sense of achievement and motivates staff to cope with the pressures of peak hours. On the other hand, if complicated tasks are fixed for a low production period, they appear to get more complicated. The best time to schedule such tasks is first thing in the morning when workers are fresh and rested. However, sometimes catering staff are required to work late hours, and perhaps continue in the morning because of the high rate of staff absenteeism or turnover. In such cases people who have worked more than eight hours a day should be given simple jobs, which do not require a lot of care and attention, because mental and physical fatigue sets in.

A job considered disagreeable by a worker should only be scheduled during peak hours when it gets done in the stride because people do not have the time to think of it in particular. If all jobs are considered in the light of their physical, psychological, social and environmental effects on the performers, work has number of advantages:

- More work can be done in a day, imparting a sense of achievement.
- Resources are better utilised, making work more productive.
- A busy schedule leaves very little idle time, gives greater satisfaction, and raises staff morale.
- The involvement is greater and staff perform their best.

Apart from work and time scheduling, productive work depends a lot on people's attitudes to their work, the nature of the job, the time and concentration required to perform it and the amount of satisfaction derived from it. Analysing tasks and scheduling work can therefore help to identify materials, equipment, time and skills, required for doing particular jobs. It is an effective tool for efficient working, as it helps to establish a sequence in which jobs are to be done within a time frame. This sequence is readily available before the work is started, so it helps each worker to know what he has to do, without waiting for verbal instructions and wasting time. Fig. 13 is a sample of time schedule for staff. It will be noticed that at the peak hours of production and services, that is 10.00 a.m. to 2.00 p.m. all the staff are present. The peak period lies between 10.30 a.m. and 12.00 noon for production and 12.30 p.m. and 1.30 p.m. for services. The timings for staff are therefore staggered before and after the peak hours.



NOTES

Work and time schedules not only chalk out the work plan for staff, but at a glance help to identify tasks which may be combined, eliminated, or modified for greater efficiency. For effective scheduling a food service manager must have data on the time required for performing a particular job.

Schedules are important tools for demarcating the responsibilities of each worker and giving them a sense of achievement at the end of a task. A schedule may also indicate changes or additions to normal duties on a particular day, and helps to check any claims for overtime work performed. Often greater use of convenience foods on the menu or introduction of time and labour saving equipment may require time and task adjustments on the schedule. Flexibility should always be built into schedules, to enable food services to adjust their work in response to technological and other environmental changes.

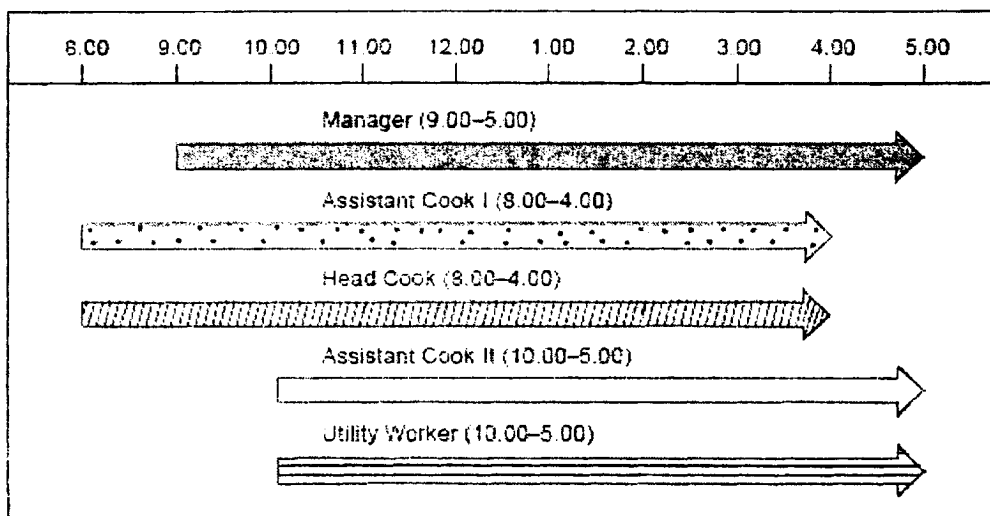


Fig. 13 Staff time schedule

At a glance it is apparent that all the staff are present during peak hours, and two are present to attend to tea time service, pre-preparation for next day and cleaning activities.

The food industry is unique in the sense that there is a constant need to increase or decrease staff strength at the production and service levels, depending on the number of customers and their requirements. It is also a common feature of the industry to employ low paid workers and therefore, on a particular day, there may be even 10 to 20 per cent absenteeism. To guard against such circumstances, the work force consists of casual workers on hourly or daily wage basis, temporary employees, as hoc appointees, those on training and so on. This enables a manager to use scheduling as a tool to cover peak hour work adequately by the required number of people, without resistance from staff. In catering,

split shift schedules are rarely followed, though staff may be asked to perform day or night duties through alternate weeks if an establishment does operate round the clock. This, however, is not normally done in any food service, because people do not generally eat round the clock. Besides, laws governing food service establishments spell out the desired hours of work in accordance with minimum wage agreements for various types of work.

## NOTES

Work and staff need to be scheduled properly for two main reasons:

- (a) **To have the right type of skills available when required:** For instance, there is need to have more service staff available at lunch time in a food service establishment, rather than kitchen staff. Once the food is ready only one or two back-up staff in the kitchen are necessary for ensuring a constant flow of food from kitchen to service counter. The number will of course depend on the type of the service and the customer.
- (b) **For maximum efficiency:** This is possible only if production and service areas are not overcrowded, or else the work environment will not only cause fatigue but also become prone to accidents.

Successful scheduling in terms of man hours and skills can only be done if jobs are analysed properly along with working conditions, menu patterns, purchasing methods, quantities handled and equipment required.

### Job Analysis

The term clearly means analysing jobs to know precisely what they involve. The purpose of breaking up jobs into their respective components is to take an objective look at a job at frequent intervals. This helps to bring into focus any overlapping, neglected or problem areas, which can then be remedied by conscious effort, to increase efficiency. Job analysis is also sometimes referred to as task analysis and is a way of looking at jobs and situations in which a number of variables are involved.

Food Service Institutions are made up of a number of interdependent parts of variables, and job analysis helps to simplify them and reveal possibilities for improvement. This is more so in the changing technological environment of today, in which the possibilities of making labour intensive jobs easier and less time-consuming are enormous.

Jobs may be analysed by many methods, such as charting out the steps or a performer and preparing travel patterns for a job. These records are known as pathway charts and help to analyse areas where unnecessary time and energy is being used. The data can then be used to develop procedures and aids for better resource use.

Task analysis also helps in scheduling work, by examining it closely for process, materials, equipment and skills needed to complete a job. Figure 16 shows the steps or activities involved in preparing a sandwich.

NOTES

An examination of the steps in Fig. 14 will indicate whether

- (a) some of them can be combined into a single step;
- (b) the sequence is interrupted or logical for a smooth work; and
- (c) time and energy spent can be reduced through scheduling.

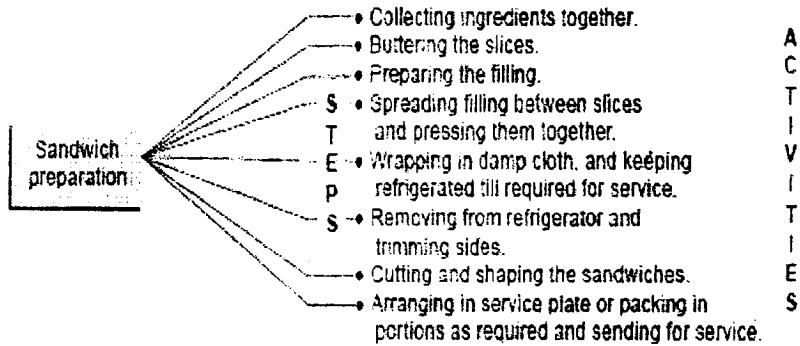


Fig. 14 Task analysis for sandwich preparation

Some tasks may be coupled or performed simultaneously. For instance, activity (2) and (3) may be combined to eliminate the step of buttering the slices. This can be done by mixing the butter and the ingredients of the filling and making a spread.

Job analysis is therefore a very good tool for increasing efficiency both in terms of speed as well as resource utilisation and can be used at all levels of activity, more so at the operational level.

Job analysis sheets help to assess the skills required for each task and formulate job descriptions, which usually define duties, tasks and responsibilities of the performer.

**Production, Service and Staff Analysis Statements**

Statements indicating the quantities or portions of food produced, served and left over each day act as tools for forecasting customer demand patterns over a particular period of time. The type of records are production records, sales charts, records of stocks and leftovers over a specified period, menu records and standard costing sheets. Any number of tools can be developed by a food service manager according to the specific requirements of the establishment. Standard costing sheets, for instance, help in substituting equally costed dishes when some ingredients for a planned dish on the menu are not available or have become too costly for the dish to be profitably produced and offered to the customer.

Each establishment can thus devise certain records which are suitable for controlling and managing its operation. Another aid is a record of staff absenteeism. This can help to analyse which workers are constantly absenting themselves

from work. The reason could well be traced to routineness of the job, insecurity at work or ill health. The reasons if identified can lead management to take corrective action. Records of sickness and absenteeism also indicate productive hours lost, leading to increasing labour costs which establishments can least afford.

## NOTES

### Budget

A budget is a projected plan for the operation of a business. It is sometimes expressed in terms of money, but at other times may also be expressed in units or percentages. It is an important tool for managing an operation as it establishes targets for future production, sales staff numbers, purchases and so on. Budgets are of different kinds and are classified and designed according to the use for which they are intended in various establishments. Figure 15 shows the kinds of budgets that may be formulated by catering establishments depending on their size.

Budgets may also be referred to as fixed or flexible with respect to the levels of sales assumed. In fixed budgets, the amount to be spent on certain items is fixed at the beginning of a budget period. In flexible ones, a judgement of costs is made from previous years experiences in relation to the possible volume of sales. Food services which are subject to seasonal sales like canteens and cafeterias situated in hill resorts or at sea sides also prepare flexible budgets for labour costs.

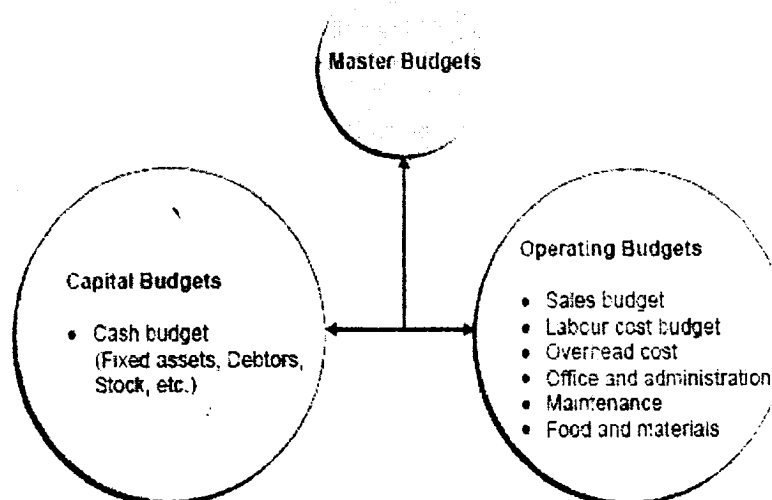


Fig. 15 Budgets in food services

Budgets are prepared on basis of forecasts of sales volume, which in turn help to determine:

- The proportion of variable and semi-variable costs;
- The cash position of the establishment; and

- The amount of expenditure to be made on equipment, furniture and overheads.

## NOTES

In every establishment, however, there are certain key factors which govern the volume of sales achieved, and these need to be considered while forecasting and budgeting. These factors prevent sales from increasing and are therefore sometimes known as limiting factors. Some of these factors are:

- (i) **Capital at hand:** It is not possible to invest more than a certain amount, and this factor limits the extent to which an establishment can grow.
- (ii) **Size of spaces:** This affects the seating capacity. It is obvious that more customers cannot be served at a time than the space available permits.
- (iii) **Staff at hand:** Shortage of staff limits the production and sale of food and services to the capacity of existing staff. Being short staffed therefore is a limiting factor for sales volume of an establishment.
- (iv) **Poor management:** In spite of having enough resources their poor management can become a serious limitation to achieving profits. Standards deteriorate through poorly planned menus, improper work distribution, inefficient kitchen arrangements, poor supervision, inaccurate costing and pricing.
- (v) **Demand of the customer:** The demand for food may decrease because of high prices, greater competition or an epidemic because of which people abstain from eating out.

It is therefore important to identify which factor is limiting the sales in a particular situation and then try to remove its effect on the establishment.

The managers of small establishments are particularly concerned with operating budgets, such as sales, labour, overhead, maintenance and administrative budgets. In larger establishments at higher levels in an organisation the cash and capital budgets become important tools for setting goals, controlling and monitoring performance and quality of food and service. Along with budgets accounting information through balance sheets, profit and loss accounts and break-even charts, all act as tools for effective management or operations.

While all tangible tools developed by managers in India were manually prepared and filed for use, today the computer acts as a very powerful tool for not only storage and retrieval of information when required but also speedy networking between units which may be located at distant places not easily connected by conventional means. Newer management tools have thus developed which can be used to improve efficiency of production and service.

## Benchmarking

Subramaniam (1977) has defined benchmarking as a structural method of learning better processes or techniques from other similar establishments and implementing them in ones own system. Today, benchmarking has developed into the third most widely used management tool in the world. In India however, this is still a very new concept but with time is expected to pick up and show results. Managers are gradually realising that it is important to identify key processes in order to satisfy the needs of customers, which today is gaining priority over immediate profits in any industry, more so in the food production and service sector.

Some of the tools of management discussed so far were all concrete and expressible in black and white. Those that follow are more subtle in nature, but are nevertheless indispensable for managing people and making them contribute their best for the organisation.

## Intangible Tools

Intangible tools are the qualities with which people are naturally endowed or to some extent acquired through training and conditioning. They are abstract in nature and make their impact on efficiency of management without being seen or handled. These tools being innate are reflected through a person's personality and charisma and therefore act in very subtle ways through leadership or interpersonal qualities and communication skills of people. This is the reason why leaders emerge even in small groups although their role at work may not be defined as managerial in nature. It would be an understatement however, to say that intangible tools cannot be acquired, they can, but only to an extent by training, conditioning or development. Intangible tools help to motivate and carry a work force from diverse backgrounds towards preset goals of an organisation, by utilising them in decision making processes. They are used for solving problems of staff and other resources, motivating people towards better productivity, all in a climate of harmony and mutual respect. Some important intangible tools are enumerated in Fig. 16. and discussed briefly below.

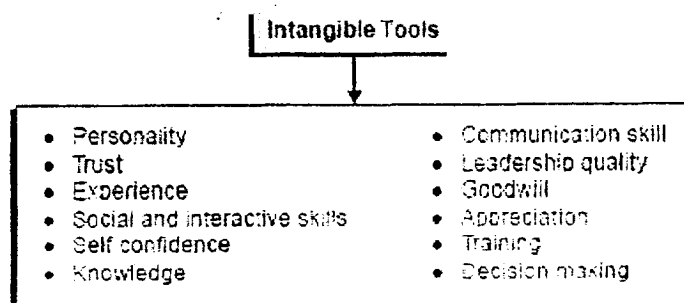


Fig. 16 Intangible tools of management

## NOTES

**NOTES**

**Personality**

This is the sum total of a manager's physical stature, mental and emotional status, social habits, outlook or vision with respect to his total work and the environment.

**Trust**

Trust is an important tool used effectively in situations when work along with authority and responsibility needs to be transferred to colleagues or subordinates in order to get work done efficiently and on time.

**Experience**

There is no doubt that when any organisation thinks of appointing new employees experience counts, as evidenced through any qualification request seen in employment advertisements of various job positions. This is because experience though not measurable in tangible terms, is a useful tool for making decisions, for the future, in organisations having similar work requirements. Although the number of working years can be tangibly stated every individual develops different types and magnitudes of experience even in the same organisation, according to their management abilities and opportunities for decision making and problem solving.

**Social and Interactive Skills**

People vary in the ways in which they interact with others at work depending on their inherent nature in terms of being extrovert or introvert, the former being more easily able to approach people irrespective of their position in the hierarchy, than the latter. Social skills may be used effectively as a tool by managers in the form of getting together informally with their employees over tea. This helps the staff to be at ease with their superiors who through casual conversation many become acquainted with the problems of their staff or their talents which can then be used to effect in management.

**Self Confidence**

Self confidence is the ability to express oneself without hesitation because one is sure of one's own capabilities. This trait shows in a manager's personality, posture, voice and conviction in what is said or done in different circumstances. This tool helps managers to avoid confusion which only results if he himself is not sure of what he wants done. A confident manager commands the respect of his team and does not have to demand it, has no problems of instructions not being followed and the work goes on efficiently without close supervision. This is because instructions are clear and easy to interpret and follow even in the absence of the manager.

## NOTES

### **Knowledge**

Knowledge is acquired generally by interest and interaction with ones environment through informal and formal training. The degree of knowledge gained however, does not equip a manager with managing ability unless it is applied to the practical field. When knowledge gained is applied to the solution of problems in the work environment through use of a person's own judgement of the situation at hand, management results. The more decisions made successfully or otherwise the more experience is gained and the success rate is increased. Thus, knowledge is a very important tool of management because degrees alone do not impart decision making abilities, and people with more book knowledge do not necessarily become good managers.

### **Communication Skills**

A manager may be able to make good decisions at work but his or her ability to communicate them to others for implementation may be inadequate. Those with good interactive skills should therefore be delegated the responsibility to implement decisions. Communication skills are inherent to some extent but can also be acquired through training and development of individuals. This tool is vital for managerial success.

All plans chalked out for the success of an establishment will come to naught, if they cannot be interpreted and understood by the people who have to carry them out. The ability to convey information or messages to others so that they can understand and interpret them in the same light as the sender of the message is known as communication.

Communication is therefore the most important tool of management when dealing with people, yet it is the most difficult to achieve effectively, because it involves much more than just sending and receiving messages. Interpretation of what is said is affected by a number of factors such as:

- (i) Personality characteristics.
- (ii) Sense of security or fear in the work environment.
- (iii) Nationality and cultural background.
- (iv) Sex, education and occupation.

These are some of the reasons why no two people interpret a message or a situation in the same way. Apart from the above, people have certain mental images of other people because of their position, status, dress, colour and therefore associate certain personality traits with them. Another aspect of communication in a work environment is the halo effect which affects the ability of people to evaluate any situation or message accurately. This effect is seen at every level in the form of impressions which superiors form about people and which act as



NOTES

barriers to the process of communication, because the impressions influence their perception. It is common for people working together in a group, to feel victimised at times, when credit for group effort is given to one or two people repeatedly. This happens when managers form good or bad impressions about some people. Those who feel victimised will never be able to interpret a message from the manager favourably even when he wishes to convey his appreciation for their work, because they carry an impression of the manager as being unjust and unappreciative of them.

Extensive studies of people's behaviour at work have established that social and psychological factors have a pronounced effect on communication between people. Among the most significant of the studies are those of Leavitt (1951) who studied the effectiveness of various communication networks or channels. He concluded that in every network there are two indices, one is the index of centrality which indicates the ability of an individual to interact in a group and establish smooth flow of communication with other members. The other is the index of peripherality, referring to people who remain on the periphery of a network and generally occupy positions of low interaction. The higher the index of centrality the better are the liaison qualities of that position. The higher the index of peripherality the lower the level of interaction, and therefore people at these positions in the network tend to be less well informed.

*The Communication Process*

The process basically involves a 'source' from which the message or information starts and a 'receptor (s)' for whom the information is meant. The information may be a statement of fact, an opinion, a suggestion, request or order. As already mentioned, communication is only complete if there is a reaction or feedback from the receptor(s) to suggest that the information has been correctly interpreted and understood.

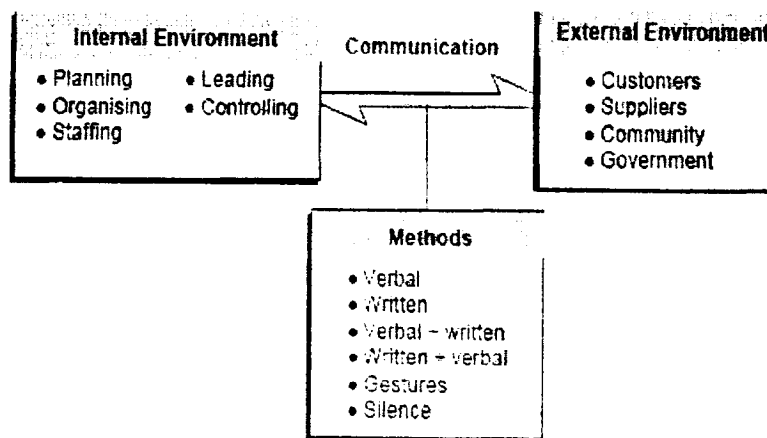


Fig. 17 Communication as the core of management activity

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It does not, however, imply that the receiver must agree with the contents of the message. It is the psychological and behavioural aspects of people which make the seemingly simple process of communication complex in practice. In the catering environment, communication is central to unifying all the different activities which interplay in the achievement of goals. Figure 17 illustrates this clearly.

### **Communication Methods**

The methods used to pass on information or messages and initiate action in the food service environment are briefly outlined and discussed.

- (i) **Verbal**—this literally means by word of mouth but with technological advances recorded voice or verbal messages can be conveyed by people even from long distances, or in a large organisation through the telecommunications in the form of intercoms, mobile phone, voicemail and so on.
- (ii) **Written**—through letters, memos, notes, or SMS messages.
- (iii) **Verbal followed by written**—Instructions given and followed up by a detailed plan of action helps it to be used as a reference at work.
- (iv) **Written followed by verbal**—Such communication methods are seen in the form of an order handed over to an employee, and the intricacies explained verbally just to make sure they are understood.
- (v) **Gestures and facial expressions**—These can be very effectively used to communicate feelings of joy, anger, frustration or friendship.
- (vi) **Silence**—This also communicates feelings of disagreement, disinterestedness, anger, shock, worry or even concentrated mental activity.

Whatever be the method of communication used by people, its effectiveness depends a lot on the sensitivity of people to interpret the words (written or oral), gestures, expressions or silence correctly. In other words, the receivers have got to be at the same mental wavelength as the sender of the information. In any situation, however, no one method of communication is used in isolation, and it has been found that an oral message followed by a written one is very effective at levels where immediate action is required. The written form helps to follow up the activity and to record the results for future reference. It has also been noticed that a message or information gets communicated much better when the receiver needs that particular information for getting his work done. The most effective communication is established where authority and responsibility are completely delegated and clearly defined. Very often, a worker who becomes disinterested in his work has become so because he does not know exactly what to do. Therefore, the success of any operation involving a number of people depends on the channels and methods by which information concerning their work is passed on.

Communication is thus the essence of coordination of all work in an establishment, and therefore follows patterns depending on the organisation structure of the establishment. These patterns are known as channels or networks of communication.

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A number of networks can be formulated, formal and informal according to the various organisation structures and social groupings which people make at work. Formally, information flows in an establishment from superiors to subordinates in a downward direction, or between colleagues in a horizontal manner or in the form of reports, queries and grievances, upwards. These three directions of information flow, move automatically along the formal structure of the establishment. The information which gets passed on by people through their social groups in casual conversation irrespective of their formal positions in relation to each other is known as grapevine communication, because it travels very fast and at times bears no semblance to the original message. Information thus transmitted gets distorted by being differently interpreted by people according to their varying experiences, perceptions and personalities. This method can, however, be a very useful tool for managing work effectively, if managers make an effort to understand how the grapevine works.

In grapevine communication, information may be passed on from one person to another in a very casual manner, but it reaches people so distantly placed at work that it is impossible to locate its source. At times one person may say something he overheard, to friends during tea break. This casual statement may become the gossip of many different groups, who begin to believe it is true. If the information concerns proposed bonus payments to employees, overheard and passed on before the decision was made, it can cause problems for management, because an adverse decision can create a lot of unrest.

What is interesting however is, that information travels unbelievably fast by the grapevine, in contrast to the same message through formal channels. Enterprising managers could use the grapevine as an effective tool for passing accurate information to people instead of the usual rumours. This is possible if they can identify those persons who are looked up to and trusted by the group and have liaison and leadership qualities. This cannot however, be largely depended upon as a regular means of communication, and any barriers in the way of people's understanding should be identified and removed.

### *Barriers to Communication*

A number of factors may become barriers to effective communication and make conversation, negotiation and training impossible, because people become alienated and indifferent to others and their work. These factors need to be identified constantly and guarded against to prevent communication from

breaking down. Managers have therefore got to be vigilant and maintain good human relations at all costs if an organisation is to survive.

A breakdown in communication is symptomatic of the existence of problems in the management of the organisation. For example, communications can break-down if the work force is uncertain about who is the boss, how, what and when a job has to be done, or when there are no clear cut standards for staff to work towards. The uncertainty builds into confusion and frustration leading to less and less interaction between people at work. The result is inefficiency because of a demotivated workforce who does not know the goals of the establishment. If these gaps are allowed to widen communication breaks down completely. Besides the structural and organisational problems mentioned above, the reasons for communication gaps may be connected with the manner in which messages are transmitted to the people at work. Fig. 18 represents ten factors responsible for communication breakdown.

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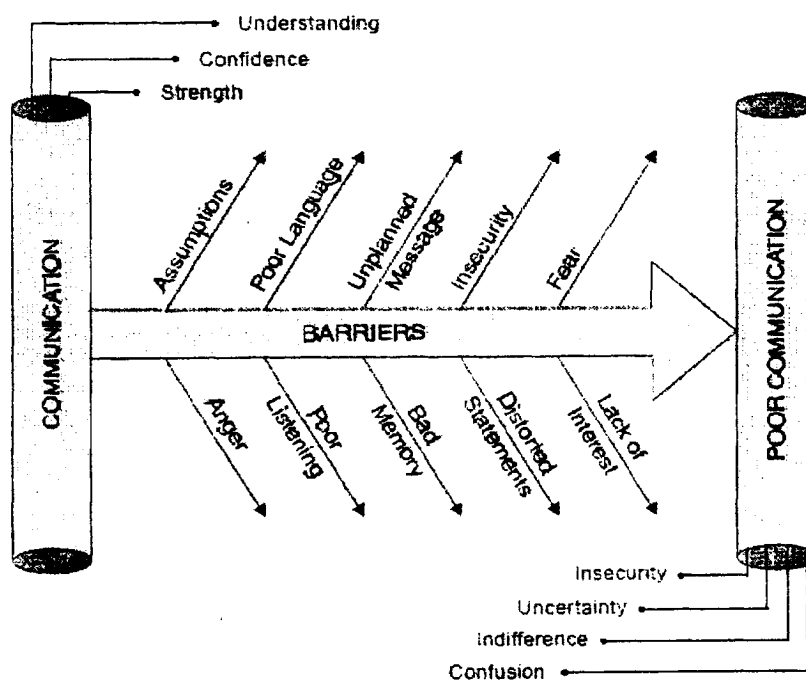


Fig. 18 Barriers to Communication

The establishment of an effective communication system in many organisations is thus the solution to a lot of deep-rooted problems, which can be brought to the surface and tackled successfully by every enterprising manager. Every manager should endeavour to identify the existing barriers to communication in the establishment, and make a conscious effort to demolish them, replacing the barriers with strings of understanding, confidence and strength.

## **Leadership Quality**

### **NOTES**

Leaders are born is a statement often heard, and time has shown that every manager cannot be J. R. D. Tata or M. S. Oberoi yet many successful managers have emerged and developed under the guidance of great leaders and through their own hard work. Leadership quality makes people look up to a manager for advice, feel motivated to work for him and respect, loyalty and love are generated in the work environment. Managers vary in the extent of leadership quality they possess because of their personal traits and individuality and the degree to which they themselves are committed to the goals of the establishment.

Leadership represents the set of skills and characteristics which differentiate the people who make an impact on other employees of an establishment. It is for this reason that they are loved and respected by other employees, customers and all those who deal with them. Charisma distinguishes a leader from a manager but charismatic leaders can be brusque, arrogant and are generally poor team players, although they exhibit a sense of vision and can give direction by creating an image of an expansive future for an organisation. People see this vision and feel motivated to achieve. A leader who can mobilise the trust and support of staff achieves greater heights than his contemporaries in the competitive management environment. This is because people need to share in a vision and want some understanding of the bigger picture and how their work contributes to it.

The self confident leader produces simple plans, speaks plainly, proposes clear-cut targets and stimulates staff to achieve them speedily thus building up a momentum to achieve. Leaders talk less but set an example for others to follow showing enthusiasm to achieve in their own behaviour at work. Dr. Rob Yeung suggests 10 ways of using charisma to advantage in goal achievement namely:

- Draft a compelling vision
- Communicate passionately
- Get cooperation from others
- Inspire and pull people towards goals
- Provide direction and momentum
- Assert if necessary
- Learn from others leaders
- Make decisions in line with vision
- Get feed back
- Command and not demand respect and loyalty

While it is the general belief that charismatic leaders are born, Yeung believes that they can be developed by good training. In today's competitive environment

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offering free preferences, management requires not only coordination of skills and leadership qualities but also creativity and innovative ideas to gain competitive advantage. In fact leadership and creativity together translate into entrepreneurial skills which are an asset to organisations, small or large. However, they are gradually acquired through experience on the job and cannot be taught through a classroom. In fact autonomy, early responsibility and opportunities to learn and grow in the work environment are the key to encouraging leadership and creativity in managers. Unless managers are allowed to exercise their creative skills the organisation will stagnate. Peter Drucker has so aptly said ... production is not the application of tools to materials but logic to work. Hence, if innovation and application are absent, productivity gradually falls and the enterprise cannot sustain itself.

Some guidelines for effective leadership are:

- Avoid nagging to get cooperation
- Be direct about what you want people to do.
- Don't blame as this can hinder problem solving.
- Stay focused on current faults and don't generalise.
- Negotiate and don't demand.
- Realign priorities to suit the way staff want to work.
- Speak less and listen more.
- Be subtle in the way you want work done instead of ordering.
- Recognise the efforts of others and reward them with praise where due.
- Do some self-evaluation also.

A good leader starts by asking:

- What has to be done? And not What do I need?
- What do I have to do to make a real contribution? The answer best suits the leader's strengths and the needs of the project.
- What are my organisation's goals?
- What qualifies as acceptable performance?
- Do I tolerate poor performance?
- Do I like or dislike an employee?

Leaders are not threatened by others who have strengths they lack. The qualities of an effective leader have been summed up by Lord Moran of Britain, a medical professional during world war I as:

*Leadership is the capacity to frame plans that will succeed and the faculty to persuade others to carry them out in the face of difficulties.*

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The definition implies knowledge, realism, ability to implement in the form of capability coupled with effectiveness, all within a frame work of selflessness, courage to decide, will power to achieve, ability to deal with people and make an impact on them by setting an example. With all these qualities a leader is good only when his thoughts, words and deeds are in harmony. However all managers are not leaders and it would be appropriate to quote here that ... *leaders are like lions, they don't flock together, you find them one at a time.*

Leadership quality is the tool used for deciding the style a leader adopts at work, which varies with the situation and its demands from both the internal and external environment of the organisation, as it affects goals.

Leadership is the quality in a manager, irrespective of his craft skills, education or position, that directly influences people's behaviour towards his and their work. In other words, it is the quality by which people can be motivated to move enthusiastically and with confidence towards established goals. Leadership qualities are inborn to a certain extent, but can also be acquired by training, and experience.

The leadership style of a manager determines how good his relationships are with his subordinates, and how easily he can communicate with them. Leadership styles adopted in the management of group work are closely related to the personality of individual managers and their social skills. It is debatable, how far social skills can be taught, because extrovert personalities develop easy relations with other people while introverts find it more difficult.

The different leadership styles that are used in the catering field can be easily classified. Some, distinctly make people work by order or force, others join the group and initiate activity, still others use persuasion while some, by their pleasant and endearing manner generate the enthusiasm for work and achieve goals in the best possible manner. Thus, through a manager's personality, referred to by Doswell and Gamble as the manager factor, a manager can build an image for himself in his work environment. For the establishment, he is responsible for how customers view the food service.

*Katz and Kahn (1966) define leadership as the influential increment over and above mechanical compliance with the routine directives of the organisation.* It is the willingness of people to follow a leader, and this happens when people can see the manager or leader as one who is providing their own wants and needs.

Leadership style is used as an effective tool of management both in formal as well as informal structures. This is evident from the fact the even when placed formally in positions of power, managers can exercise authority over people only if they will accept it. Some managers who are good planners and organisers fail to achieve results because they are not good leaders. Reference has already been

made to the development of informal organisation patterns within the formal frame work. In catering situations one often sees the emergence of a leader within a group, that is, a person who will be followed in whatever he says or does, even though he may not have been placed in a position of authority through the formal structure.

Experiences of managers have shown that the contribution of leadership ability towards goal achievement may extend up to 40 per cent while 60 per cent is attributed to the need for the job and the authority exercised by superiors. Lal (1983) has reported that managers tend to behave in characteristic ways while making decisions. Table 2 summarises the style of leadership reasearched and the percentage of wage among managers.

**Table 23 Styles of leadership among managers**

Description	Style	Style Usage (%)
(i) Own decision without explanation to subordinate	Autocratic or centralised	Varied, depending on nature and type of estt
(ii) Own decision with explanation to subordinate	Same as I.	
(iii) Prior consulation with subordinate	Participative or decentralised	35.2
(iv) Joint decision	Democratic	29.5
(v) Delegation	Laissez faire	3.5

It may be noted that all the styles are used to different extents by managers according to the nature of the decision to be made. For example, for decisions regarding salary, styles (i) and (ii) were used 98.44 per cent of the time. For hiring staff these were used only 14 per cent of the time. The observations from this study were averages to show the percentage of time which managers spent using the different styles of leadership.

Thus a manager does not and cannot use any one leadership style in isolation at all times. He may be autocratic in an emergency like when an accident takes place or a fire breaks out in the kitchen. Also, in situations where only he has the answer, such as deciding on the number of customers to be catered for.

According to Likert, (1967) effective managers use the participative style and depend more on communication, while at the same time adopting a supportive attitude, sharing needs, values, goals and expectations with their staff. Various traits related to leadership ability have been identified in the literature ranging from physical traits to those of intelligence, ability, personality, social and task related ones.

Leadership style is thus a powerful tool of management, especially in people oriented spheres such as food service management, in which the degree of concern



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managers have for people (reflected in their style) can create a comfortable working environment harbouring trust and respect for each other. This of course is based entirely on the personality and other traits of the manager and his ability to inspire confidence in people, who then get committed to the goals of the establishment.

### **Goodwill**

Goodwill is the feeling of oneness with people whether colleagues at work or customers who visit an establishment. It is an important tool for harmony at work as it inhibits ill feelings or jealousy in an otherwise competitive environment. It is that quality which makes customers come back to an establishment repeatedly because they feel at home, being served with quality food in an atmosphere infused with love and consideration, exhibiting good manners in a happy comfortable environment.

### **Appreciation**

All managers are quick to criticise even if a small mistake is detected, but the tendency to praise employees for work well done and appreciate their talents is generally absent or very infrequent. The only time appreciation or praise is showered on people is when they retire or die, why not when they are alive and actively involved at work. According to Parkinson and Rustomji (1993) praise is the finest, cheapest and possibly the best-tool of management, as it spurs people on to work better.

### **Training**

With catering becoming more and more competitive, professional training of employees at all levels is becoming an indispensable tool for the management of operations. This is because training imparts knowledge of the various aspects of the operation, and skills to deal with the influences of the ever-changing environment. Besides ensuring efficiency, training also develops the right attitudes to work. With increasing number of unemployed graduates in the market, caterers would do well to pick up raw hands and spend less on interviews, references and selection, and subject them to on-the-job training, using training as the tool for developing their best potential. They could be subjected to on-the-job training for 70 per cent of the time, with the remaining 30 per cent utilised for academic work.

*Sensitivity* training should form part of the programme in which people are brought together in groups and allowed to discuss their feelings and frustrations, freely among themselves. These are referred to as T groups. Through such exposure individuals develop trust in themselves and in others, become fearless and self-confident and learn to work effectively with others.

When people are trained in groups, they get better stimulated to learn because of group participation, and this group spirit is later maintained at work.

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Training programmes conducted by well-trained teachers should impart knowledge of the history and objectives of the establishment, relationship with other departments, the key persons to contact in each department, budget estimates as they affect the workers, preparation and service of food, sanitation and safety, and the existence of work improvement programmes. In addition, knowledge about laws governing food service organisations and their implications at work are a vital aspect of any training in food service institutions.

The organisation gains from a well-trained work force through reduction of staff turnover and absenteeism, fewer accidents at work, better resource utilisation, decreased costs, higher production, higher levels of morale and job satisfaction. Training makes its contribution to the goals of the establishment as well as to the development of the individuals.

### **Decision-Making**

Decision-making (DM) is the ability to forecast changes in the organisation and its external environment and react in advance or be prepared to react in any eventuality. No work at any level can be performed without making decisions. The difference lies only in the nature of the decision. At production and service levels the decisions made concern materials, methods of work, quantities and quality. Higher up in the organisation decisions change to those of planning menus, selecting equipment and suppliers, making purchases, costing and pricing. Still further up the management hierarchy decisions regarding staffing, grievance procedures, trade union negotiations, establishment policies and investments have to be taken. Besides these, strategies for reacting to environmental changes have to be drawn out.

The process of decision-making involves three basic steps:

- (a) making a mental effort,
- (b) listing out alternative courses of action within the structure of a situation,
- (c) choosing a single course of action from among many alternatives.

In practice, people are making decisions all the time, without thinking about the process which the mind is going through, to decide what is to be done. For example, a cook decides to garnish a dish of tandoori chicken with onions, lemon slices and chopped coriander for one set of customers, to others he sends it accompanied by roast potatoes garnished with coriander sauce. He may have decided to do the latter because these were some boiled potatoes left over from the earlier meal or the coriander was not looking too fresh to be used as such for the last lot of customers. In both cases however, he has acted on a single course of action without as much as sitting down to list the alternatives. Similarly, the catering manager decides to change the menu because the price of a food item has suddenly gone up or down, or because he envisages a drop in the number of

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customers on a particular day. In this way there are so many decisions, all of different types that are being made and acted upon at all levels of management, almost continuously, depending on the roles that people are performing at work. The more complicated the decision situation, the more time is spent on decision-making.

Three pre-requisites are therefore essential for any decision to be made:

- (i) There has to be a reason for making a decision,
- (ii) The courses of action that are open need to satisfy the reason, and
- (iii) Choice has to be made from among these alternatives.

The proportion of time spent on each of the phases of decision-making vary from one level in the organisation to another, and from one person to another. But, in general, at top management levels more time is spent on studying the effects of environmental changes on the establishment and developing courses of action to react to them favourably. The middle level managers spend more time selecting the best courses of action open to them.

There are two main types of decisions taken in catering establishments. Some are routine and repetitive which do not require fresh thinking each time the need arises. An example of this type is, the decision to place a pan on the cooking range when any food is to be cooked, or switching on the oven, when a cake mixture is being prepared. Such decisions are said to be programmed. The second type are decisions include those required to be taken if an accident takes place in the kitchen, or when some incident of misbehaviour has to be tackled, or a piece of equipment breaks down in the middle of food being cooked in it, or 25 per cent staff do not turn up for work one morning. These type of decisions are called unprogrammed decisions and require the use of judgement, creativity, presence of mind and initiative.

The routine type of decisions act as a tool for managing time well, because they become quite automatic and require practically no mental effort, time or advice from superiors. The unprogrammed decisions are important for managing emergency or pressure situations, which are a characteristic feature of catering establishments. At higher levels managers also need to know the possible effects of their decisions, because of the fact that operations consist of highly cohesive groups at the operational levels, and can collectively demonstrate group feelings bringing great pressure on management. This is expected to increase as catering workers get more and more unionised. Decision-making therefore, although an important tool of management needs to be used with great care, because the results of a decision are known only after a period of time. Managers would do well to cash in on their knowledge of the people who work with them and utilise their cohesiveness to achieve group and organisational goals.

The importance of decisions vary with the degrees of responsibility entrusted to a manager. Where a decision has a greater effect on people, its importance is greater than a decision which affects a piece of equipment, or a procedure.

Decision-making is vital to all functions of management as it forms the core of planning and all good decisions are cost effective, and satisfying to people and the establishment. Therefore its usefulness need not be overemphasised.

While some important tools have been outlined and discussed briefly, tools of management are as varied as the types of managers who develop them. Tools thus evolve and get adapted to the needs of particular situations. Some conceptual tools which have been used for analysis of organisations are abstraction and models.

*Abstraction* is the process of selecting certain facts about a situation and a searching for possibilities that could prove important for deciding a course of action, whereas preparation of models involves connecting the abstracted elements into a pattern weaving them to form a model of the situation by which problems can be better understood and solutions arrived at.

All tools of management whether tangible or intangible used or developed by managers are used in combination to extents dictated by each situation. Abstractions and models are mechanisms used for economy of time and effort but need to be used within their limits.

In conclusion, tools to a manager are as useful as he can make them. If he has initiative, and the will to succeed, he can create new tools or shape old ones to suit his particular needs.

## 1.5 MANAGEMENT OF RESOURCES

Resource management is the efficient and effective deployment for an organization's resources when they are needed. Such resources may include financial resources, inventory, human skills, production resources, or information technology (IT). In the realm of food service management, processes, techniques and philosophies as to the best approach for allocating resources have been developed. Resource management is a key element to activity resource estimating and human resource management.

Both are essential components of a comprehensive management plan to execute and monitor a the food service business successfully. As is the case with the larger discipline of business management, there are resource management software tools available that automate and assist the process of resource allocation to business and portfolio resource visibility including supply and demand of resources.

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## **HR (Human Resource) Management**

### **NOTES**

This is the science of allocating human resources among various works or business units, maximizing the utilization of available personnel resources to achieve business goals; and performing the activities that are necessary in the maintenance of that workforce through identification of staffing requirements, planning and oversight of payroll and benefits, education and professional development, and administering their work-life needs. The efficient and effective deployment of an organization's personnel resources where and when they are needed, and in possession of the tools, training and skills required by the work.

### **Techniques**

One resource management technique is resource leveling. It aims at smoothing the stock of resources on hand, reducing both excess inventories and shortages.

The required data are: the demands for various resources, forecast by time period into the future as far as is reasonable, as well as the resources' configurations required in those demands, and the supply of the resources, again forecast by time period into the future as far as is reasonable.

The goal is to achieve 100% utilization but that is very unlikely, when weighted by important metrics and subject to constraints, for example: meeting a minimum service level, but otherwise minimizing cost. The principle is to invest in resources as stored capabilities, then unleash the capabilities as demanded.

A dimension of resource development is included in resource management by which investment in resources can be retained by a smaller additional investment to develop a new capability that is demanded, at a lower investment than disposing of the current resource and replacing it with another that has the demanded capability.

## **1.6 TYPES OF HOTELS AND RESTAURANTS**

A hotel is an establishment that provides paid lodging on a short-term basis. The provision of basic accommodation, in times past, consisting only of a room with a bed, a cupboard, a small table and a washstand has largely been replaced by rooms with modern facilities, including en-suite bathrooms and air conditioning or climate control. Additional common features found in hotel rooms are a telephone, an alarm clock, a television, and Internet connectivity; snack foods and drinks may be supplied in a mini-bar, and facilities for making hot drinks. Larger hotels may provide a number of additional guest facilities such as a restaurant, a swimming pool or childcare, and have conference and social function services.

Some hotels offer meals as part of a room and board arrangement. In the United Kingdom, a hotel is required by law to serve food and drinks to all guests within certain stated hours; to avoid this requirement it is not uncommon to

come across private hotels which are not subject to this requirement. In Japan, capsule hotels provide a minimized amount of room space and shared facilities.

The cost and quality of hotels are usually indicative of the range and type of services available. Due to the enormous increase in tourism worldwide during the last decades of the 20th century, standards, especially those of smaller establishments, have improved considerably. For the sake of greater comparability, rating systems have been introduced, with the one to five stars classification being most common and with higher star ratings indicating more luxury. Hotels are independently assessed in traditional systems and these rely heavily on the facilities provided. Some consider this disadvantageous to smaller hotels whose quality of accommodation could fall into one class but the lack of an item such as an elevator would prevent it from reaching a higher categorization. In some countries, there is an official body with standard criteria for classifying hotels, but in many others there is none. There have been attempts at unifying the classification system so that it becomes an internationally recognized and reliable standard but large differences exist in the quality of the accommodation and the food within one category of hotel, sometimes even in the same country.

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### ***Classification of Hotels***

Hotel classification is based on many criteria and classifying hotels into different types is not an easy task. The hotel industry is so vast that many hotels do not fit into single well defined category. Industry can be classified in various ways, based on location, size of property etc. The main hotel chains of India are: The Taj Group of Hotels, the Oberoi Group and ITC Welcome group.

Some of the international chains are Hyatt, Marriott, and Le Meridien etc. these properties have also come up in India now.

#### **1. Based on location**

- **City center:** Generally located in the heart of city within a short distance from business center, shopping arcade. Rates are normally high due to their location advantages. They have high traffic on weekdays and the occupancy is generally high. Example: Taj Mahal, Mumbai
- **Motels:** They are located primarily on highways, they provide lodging to highway travelers and also provide ample parking space. The length of stay is usually overnight.
- **Suburban hotels:** They are located in suburban areas, it generally have high traffic on weekend. It is ideal for budget travelers. In this type of hotel rates are moderately low.
- **Airport hotels:** These hotels are set up near by the airport. They have transit guest who stay over between flights.
- **Resort hotels:** They are also termed as health resort or beach hill resort and so depending on their position and location. They cater a person who

wants to relax, enjoy themselves at hill station. Most resort work to full capacity during peak season. Sales and revenue fluctuate from season to season.

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- **Floating hotels:** As name implies these hotels are established on luxury liners or ship. It is located on river, sea or big lakes. In cruise ships, rooms are generally small and all furniture is fixed down. It has long stay guest.
- **Boatels:** A house boat hotels is referred as boatels. The shikaras of Kashmir and kettuvallam of kerala are houseboats in India which offers luxurious accommodation to travelers.
- **Rotels:** These novel variants are hotel on wheel. Our very own "palace on wheels" and "Deccan Odessey" are trains providing a luxurious hotel atmosphere. Their interior is done like hotel room. They are normally used by small group of travelers.

### **2. Based on Size of Property**

The main yardstick for the categorization of hotel is by size the number of rooms available in the hotel.

- **Small hotel:** hotel with 100 rooms and less may be termed as small hotels.
- **Medium sized hotel:** hotel which has 100-300 rooms is known as medium sized hotel.
- **Large hotels:** hotel which have more than 300 rooms are termed as large hotels.
- **Mega hotels:** are those hotels with more than 1000 rooms.
- **Chain hotels:** these are the group that have hotels in many number of location in India and international venues.

### **3. Based on the Level of Service Hotels may be classified into economy, and luxury hotels on the basis of the level of service they offer.**

- **Economy/ Budget hotels:** These hotels meet the basic need of the guest by providing comfortable and clean room for a comfortable stay.
- **Mid market hotels:** It is suite hotel that offers small living room with appropriate furniture and small bed room with king sized bed.
- **Luxury hotels:** These offer world class service providing restaurant and lounges, concierge service, meeting rooms, dining facilities. Bath linen is provided to the guest and is replaced accordingly. These guest rooms contains furnishing, artwork etc. prime market for these hotels are celebrities, business executives and high ranking political figures. Example: Hyatt Regency, New Delhi.

### **4. Based on the Length of Stay**

Hotel can be classified into transient, residential and semi residential hotels depending on the stay of a guest.

- **Transient Hotel:** These are the hotel where guest stays for a day or even less, they are usually five star hotels. The occupancy rate is usually very high. These hotels are situated near airport.
- **Residential hotels:** These are the hotel where guest can stay for a minimum period of one month and up to a year. The rent can be paid on monthly or quarterly basis. They provide sitting room, bed room and kitchenette.
- **Semi residential hotels:** These hotels incorporate features of both transient and residential hotel.

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### 5. Based on Theme Depending on theme hotel may be classified into Heritage hotels, Ecotels, Boutique hotels and Spas.

- **Heritage hotel:** In this hotel a guest is graciously welcomed, offered room that have their own history, serve traditional cuisine and are entertained by folk artist. These hotels put their best efforts to give the glimpse of their region. Example: Jai Mahal palace in Jaipur.
- **Ecotels :** these are environment friendly hotels these hotel use eco friendly items in the room. Example: Orchid Mumbai is Asia first and most popular five star ecotel.
- **Boutique hotels:** This hotel provides exceptional accommodation, furniture in a themed and stylish manner and caters to corporate travelers. Example: In India the park Bangalore is a boutique hotel.
- **Spas:** is a resort which provide therapeutic bath and massage along with other features of luxury hotels in India Ananda spa in Himalaya are the most popular Spa.

### 6. Based on Target Market

- **Commercial hotel:** They are situated in the heart of the city in busy commercial areas so as to get good and high business. They cater mostly businessmen.
- **Convention hotels:** These hotels have large convention complex and cater to people attending a convention, conference Example: Le meridien, Cochin, is a hotel with largest convention center in south India.
- **Resort hotels:** These leisure hotels are mainly for vacationers who want to relax and enjoy with their family. The occupancy varies as per season. The atmosphere is more relaxed. These are spread out in vast areas so many resorts have solar powered carts for the transport of guest.
- **Suite hotels:** These hotel offer rooms that may include compact kitchenette. They cater to people who are relocating act as like lawyers, executives who are away from home for a long business stay.
- **Casino hotels:** Hotel with predominantly gambling facilities comes under



this category, they have guest room and food and operation too. These hotels tend to cater leisure and vacation travelers. Gambling activities at some casino hotels operate 24 hours a day and 365 days a year.

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### ***Restaurants***

A restaurant prepares and serves food and drink to customers. Meals are generally served and eaten on premises, but many restaurants also offer take-out and food delivery services. Restaurants vary greatly in appearance and offerings, including a wide variety of cuisines and service models.

A restaurant owner is called a restaurateur; both words derive from the French verb *restaurer*, meaning "to restore". Professional artisans of cooking are called chefs, while prep staff and line cooks prepare food items in a more systematic and less artistic fashion.

Today there are many different types of restaurants, from fast food to family casual. Here is a brief overview of some of the more popular restaurant concepts.

#### **Fast Food Restaurant**

Fast food is the most familiar restaurant to most people. Chains like McDonalds and Burger King became popular in the 1950s, and helped spawn countless other concepts like Taco Bell, KFC and In&Out Burger. Fast food service attracted customers for its speed and convenience. Fast food restaurants are typically chains. If you are thinking of opening a fast food franchise, keep in mind that the initial costs of franchising are more expensive than opening an independent restaurant.

#### **Fast Casual Dining**

This is one of the biggest trends right now. Fast casual is slightly more upscale than fast food. Fast casual restaurants offer disposable dishes and flatware, but their food tends to be presented as more upscale, such as gourmet breads and organic ingredients. Open kitchens are popular with fast casual chains, where customers can see their food being prepared. Boston Market is classified as fast casual.

#### ***Café***

A café is a restaurant that does not offer table service. Customers order their food from a counter and serve themselves. A café menu traditionally offers things such as coffee, espresso, pastries and sandwiches. Cafes originated in Europe and are strongly associated with France. They are known for their casual, unhurried atmosphere. Outdoor seating is another trademark of a café. Panera Bread is an example of a popular bakery-café chain. The term bistro is sometimes interchanged with café. A bistro is actually a café that offers full meals (albeit, cheaper than a full fledged sit down restaurant).

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### **Pub**

Short for Public House, pubs date back hundred of years to Europe, especially Great Britain. Pubs have a timeless appeal, for their laid back atmosphere. Brewpubs offer beer made in house, as well as a wide selection of other beers and ales. Pubs can offer full menus, as well as appetizers. Many casual style restaurants have a separate pub side to their establishment.

### **Casual Style Dining**

Also known as family style dining in the United States. Casual style restaurants offer moderately priced entrees. This is one of the largest markets in the US right now. Casual style dining can be any number of themes, from Italian (Olive Garden) to seafood (Red Lobster) to Mexican (Chilis). Casual style restaurants offer table side service, non-disposable dishes, while still keeping the menu moderately priced.

### **Fine Dining**

Just as the name implies, fine dining is used to describe a much more upscale restaurant, one that offers diners an elegant atmosphere with high quality service. The chefs in fine dining restaurants are usually professionally trained, and the food is fairly expensive, but worth it.

### **Clubs**

A club is an association of two or more people united by a common interest or goal. A service club, for example, exists for voluntary or charitable activities; there are clubs devoted to hobbies and sports, social activities clubs, political and religious clubs, and so forth.

Historically, clubs occurred in all ancient states of which we have detailed knowledge. Once people started living together in larger groups, there was need for people with a common interest to be able to associate despite having no ties of kinship. Organizations of the sort have existed for many years, as evidenced by Ancient Greek clubs and associations in Ancient Ruji.

### **Universal clubs**

These are loose but well-known varieties of clubs or associations which are known for a variety of endeavors. A Global understanding and a loose restrictions allow certain clubs to be known as "Universal" meaning anyone is allowed. The Brotherhood of Man, the GX association, and the Freemasons are some that meet these criterion.

### **School clubs**

These are activities performed by students that fall outside the realm of classes. Such clubs may fall outside the normal curriculum of school or university education or, as in the case of subject matter clubs (e.g. student chapters of professional societies), may supplement the curriculum through informal meetings and professional mentoring.

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**Professional societies**

These organizations are partly social, partly professional in nature and provide professionals with opportunities for advanced education, presentations on current research, business contacts, public advocacy for the profession and other advantages. Examples of these groups include medical associations, scientific societies, autograph club and bar associations. Professional societies frequently have layers of organization, with regional, national and international levels. The local chapters generally meet more often and often include advanced students unable to attend national meetings.

**Service clubs**

A service club is a type of voluntary organization where members meet regularly for social outings and to perform charitable works either by direct hands-on efforts or by raising money for other organizations.

**Social clubs**

The modern gentlemen's club, sometimes proprietary, i.e. owned by an individual or private syndicate, but more frequently owned by the members who delegate to a committee the management of its affairs, first reached its highest development in London, where the district of St. James's has long been known as "Clubland".

**Social activities clubs**

Social activities clubs are a modern combination of several other types of clubs and reflect today's more eclectic and varied society. These clubs are centered around the activities available to the club members in the city or area in which the club is located. Because the purpose of these clubs is split between general social interaction and taking part in the events themselves, clubs tend to have more single members than married ones.

**Country clubs, athletic clubs, and sports clubs**

There are two types of athletic and sports clubs, those organized for sporting participants (which include athletic clubs and country clubs), and those primarily for spectator fans of a team.

Athletic and country clubs offer one or more recreational sports facilities to their members. Such clubs may also offer social activities and facilities, and some members may join primarily to take advantage of the social opportunities. Country clubs offer a variety of recreational sports facilities to its members and are usually located in suburban or rural areas. Most country clubs have golf. Swimming pools, tennis courts, polo grounds and exercise facilities are also common. Country clubs usually provide dining facilities to their members and guests, and frequently host catered events like weddings. Similar clubs in urban areas are often called athletic clubs. These clubs often feature indoor sports, such as indoor tennis, squash, basketball, boxing, and exercise facilities.

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Members of sports clubs that support a team can be sports amateurs — groups who meet to practice a sport, as for example in most cycling clubs — or professionals — football clubs consist of well-paid team members and thousands of supporters. A sports club can thus comprise participants (not necessarily competitors) or spectator fans, or both. Sports club should not be confused with gyms and health clubs, which also can be for members only.

### **Hobby clubs**

Hobbies are practiced for interest and enjoyment, rather than financial reward. Examples include ham radio, Model Railroading, collecting, creative and artistic pursuits, making, tinkering, sports and adult education. Engaging in a hobby can lead to acquiring substantial skill, knowledge, and experience. However, personal fulfillment is the aim.

### **Personal Clubs**

Personal Clubs are similar to Hobby Clubs. These clubs are run by a few close friends. These friends or family members do things they like to do together. They might even make a personal website for their club.

### **Wine Bars**

A bar is an establishment that serves drinks, especially alcoholic beverages such as beer, liquor, and cocktails, for consumption on the premises.

Bars provide stools or chairs for their patrons along tables or raised counters. Some bars have entertainment on a stage, such as a live band, comedians, go-go dancers, a floor show or strippers. Bars that are part of hotels are sometimes called long bars or hotel lounges.

The term "bar" is derived from the specialized counter on which drinks are served and is a synecdoche applied to the whole of the drinking establishment. The "back bar" or "gantry" is a set of shelves of glasses and bottles behind that counter. In some bars, the gantry is elaborately decorated with woodwork, etched glass, mirrors, and lights. When food is served elsewhere in the establishment, it may also be ordered and eaten at the bar.

Wine bars put a new spin on wine tasting. They seek to remove the association of wine with upscale clientele and overwhelming wine lists and replace it with a more casual and relaxing atmosphere. Many of these bars are furnished with nooks and booths encased in rich colors and plush surroundings in hopes their guests will linger. Wine bars look to embrace the intellectual stimulation linked to wine and offer an alternative to the bar scene. The laid-back environment lends itself to a good socializing setting with a less crowded feel and more intimate appeal.

Modern wine bars have begun to incorporate a larger variety of food choices. Traditionally associated with cheeses and desserts, wine bars are looking

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to combine wine with appetizer-sized gourmet selections to enhance the palate. The concept brings the tastes of fancy restaurants to a dressed-down setting. Restaurant owners and chefs take the opposite approach and use wine bars as an opportunity for expansion.

Bars in India are mainly clustered in metro cities, like Delhi, Mumbai, Bangalore, etc. The rest of the country has very few bar formats. Mostly, drinks are served in establishments such as restaurants. Many consumers prefer to purchase liquor at "wine shops" (locally known as Thekas—shops that, until recently, stocked only beer and liquor) and consume it at home.

More recently, bars are showing up in smaller cities; but, these establishments cater to a mostly male clientele and are unlike the social hubs of the west.

Since last few years, many international brand have entered the market, like 'Hard Rock Cafe', 'TGI Friday's', Ruby Tuesday's', Pop Tate's, 'Ministry of Sound(MOS)', etc. Similar chains of bars are now starting to emerge from within the country. Shalom, Laidbackwaters, Geoffrey's Dhadkkan at Solan Himachal Pradesh and All Sports Bar are among the few popular ones.

### ***Fast Food***

Fast food is the term given to food that can be prepared and served very quickly. While any meal with low preparation time can be considered to be fast food, typically the term refers to food sold in a restaurant or store with low quality preparation and served to the customer in a packaged form for take-out/take-away.

Outlets may be stands or kiosks, which may provide no shelter or seating, or fast food restaurants (also known as quick service restaurants). Franchise operations which are part of restaurant chains have standardized foodstuffs shipped to each restaurant from central locations.

The capital requirements involved in opening up a fast food restaurant are relatively low. Restaurants with much higher sit-in ratios, where customers tend to sit and have their orders brought to them in a seemingly more upscale atmosphere, may be known in some areas as fast casual restaurants.

The concept of ready-cooked food for sale is closely connected with urban development. In Ancient Rome cities had street stands that sold bread and wine. A fixture of East Asian cities is the noodle shop. Flatbread and falafel are today ubiquitous in the Middle East. Popular Indian fast food dishes include vada pav, panipuri and dahi vada. In the French-speaking nations of West Africa, roadside stands in and around the larger cities continue to sell—as they have done for generations—a range of ready-to-eat, char-grilled meat sticks known locally as brochettes (not to be confused with the bread snack of the same name found in Europe).

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Modern commercial fast food is often highly processed and prepared in an industrial fashion, i.e., on a large scale with standard ingredients and standardized cooking and production methods. It is usually rapidly served in cartons or bags or in a plastic wrapping, in a fashion which minimizes cost. In most fast food operations, menu items are generally made from processed ingredients prepared at a central supply facility and then shipped to individual outlets where they are reheated, cooked (usually by microwave or deep frying) or assembled in a short amount of time. This process ensures a consistent level of product quality, and is key to being able to deliver the order quickly to the customer and eliminate labor and equipment costs in the individual stores.

Because of commercial emphasis on speed, uniformity and low cost, fast food products are often made with ingredients formulated to achieve a certain flavor or consistency and to preserve freshness.

### Variants

Although fast food often brings to mind traditional American fast food such as hamburgers and fries, there are many other forms of fast food that enjoy widespread popularity in the West.

Chinese takeaways/takeout restaurants are particularly popular. They normally offer a wide variety of Asian food (not always Chinese), which has normally been fried. Most options are some form of noodles, rice, or meat. In some cases, the food is presented as a smörgåsbord, sometimes self service. The customer chooses the size of the container they wish to buy, and then is free to fill it with their choice of food. It is common to combine several options in one container, and some outlets charge by weight rather than by item. Many of these restaurants offer free delivery for purchases over a minimum amount.

Sushi has seen rapidly rising popularity in recent times. A form of fast food created in Japan (where bentô is the Japanese equivalent of fast food), sushi is normally cold sticky rice served with raw fish. The most popular kind in the West is rolls of rice in nori (dried laver), with filling. The filling often includes fish, chicken or cucumber.

Pizza is a common fast food category in the United States, with chains such as Domino's Pizza, Sbarro and Pizza Hut. Menus are more limited and standardized than in traditional pizzerias, and pizza delivery, often with a time commitment, is offered.

Kebab houses are a form of fast food restaurant from the Middle East, especially Turkey and Lebanon. Meat is shaven from a rotisserie, and is served on a warmed flatbread with salad and a choice of sauce and dressing. These doner kebabs are distinct from shish kebabs served on sticks. Kebab shops are also found throughout the world, especially Europe, New Zealand and Australia but they generally are less common in the US.

Fish and chip shops are a form of fast food popular in the United Kingdom, Australia and New Zealand. Fish is battered and then deep fried.

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The Dutch have their own types of fast food. A Dutch fast food meal often consists of a portion of French fries (called *friet* or *patat*) with a sauce and a meat product. The most common sauce to accompany French fries is mayonnaise, while others can be ketchup or spiced ketchup, peanut sauce or piccalilli. Sometimes the fries are served with combinations of sauces, most famously *speciaal* (special): mayonnaise, with (spiced) ketchup and chopped onions; and *oorlog* (literally "war"): mayonnaise and peanut sauce (sometimes also with ketchup and chopped onions).

### ***Street Food***

Street food is food obtainable from a streetside vendor, often from a makeshift or portable stall. While some street foods are regional, many are not, having spread beyond their region of origin. The food and green groceries sold in farmers' markets may also fall into this category, including the food exhibited and sold in gathering fairs, such as agricultural show and state fair. Most street food is both finger and fast food. Food and green groceries are available on the street for a fraction of the cost of a restaurant meal and a supermarket. According to the Food and Agriculture Organization, 2.5 billion people eat street food every day.

Concerns of cleanliness and freshness often discourage people from eating street food. Lack of refrigeration is often construed as a lack of cleanliness or hygiene; on the other hand, street food often uses particularly fresh ingredients for this very reason.

Street food is intimately connected with take-out, junk food, snacks, and fast food; it is distinguished by its local flavor and by being purchased on the sidewalk, without entering any building. Both take-out and fast food are often sold from counters inside buildings. Increasingly the line is blurred, as restaurants such as McDonald's begin to offer window counters.

With the increasing pace of globalization and tourism, the safety of street food has become one of the major concerns of public health, and a focus for governments and scientists to raise public awarenesses. FSA hence provides comprehensive guidances of food safety for the vendors, traders and retailers of the street food sector in the United Kingdom. Other effective ways of curbing the safety of street foods are through mystery shopping programs, through training and rewarding programs to market stallers, through regulatory governing and membership management programs, or through technical testing programs.

The quintessential North Indian street food is *Chaat*—a generic name for a tangy and spicy mix, whose ingredients can be quite varied. The tangy flavor is usually imparted by the use of lemon, pomegranate seeds, *Kala Namak* (black salt), tamarind, and various chutneys. *Chaat* can be prepared with fruit, with

popular ones including guava, banana, apple, melon, etc. It could instead be made using small crisp pancakes made from fried flour, called "paapri", along with yogurt. Potatoes sauteed with black cumin powder constitute another variant. In Indian cities, street vendors also sell drinks including Lassi (yogurt drink sold plain/salty, sweet, or fruit flavored), Sherbet and Jaljeera. Additionally, hole-in-the-wall kebab shops can be found in major cities.

Other items are:

- Pani Puri (also known as gol gappas or phuchkas) and Bhelpuri. Panipuri are hollow crisp balls made from dough, and filled as-you-eat with a spicy concoction of water and potatoes, topped by a choice of sweet or spicy chutney.
- Aaloo Tikki These are patties made up of mashed potatoes and masala deep fried in oil. They are served typically with a curry called Chholey (chick peas). They are popular in winter in North India.
- Chaap is a version of potato patties dipped in flour batter and deep fried. They are served along with onion and beet slices. They are referred to by this name in the Eastern part of the country. One can obtain chaap on local trains travelling to and from Kolkatta. The word "chaap" is probably a corruption of "chop".
- Poori-Subzie(or Bhaajee) This is available mostly in North India, especially in Uttar Pradesh. The curry (subzie) consists usually of potatoes in gravy. Sometimes, especially in the southern part of the country the potatoes do not have gravy and the poories are exclusively made up of refined flour (maida).
- Chai-faen This term refers to tea with a roasted biscuit called "faen", possibly a corruption of "fan" which the shape of the biscuit resembles. The biscuit is also called "khaaree biscuit" in other parts of the country. This is available in North India, especially in Uttar Pradesh in cities like Agra and Mathura.
- Vada pav is an example of West Indian street food. Masala chai, a spiced tea, is also for sale. A syrup-covered deep-fried sweet is sold in the North as jalebi and the South as jangiri. It is generally cheap and available throughout India.

## 1.7 FOOD SERVICE IN WELFARE AND INDUSTRIAL ESTABLISHMENTS

"Food service establishment" means any establishment, place or location, whether permanent, temporary, seasonal or itinerant, where food is prepared and the public is offered to be served or is served. The term includes any such places regardless of whether there is a charge for the food. The term does not include:

- (a) private homes where food is prepared or served and not offered for sale;
- (b) a retail food store operation other than a delicatessen;

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- (c) the location of vending machines; or
- (d) supply vehicles.

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Various establishments such as schools, colleges, hotels, hospitals etc. are considered as welfare food service establishments. These establishments provide food to their respective public on subsidised cost. These establishments have to take care of the welfare of public.

### **Schools**

It is important to recognize perceptions and importance of students, parents, and other people in the community about food produced in schools. School administration and many other government agencies work to establish a proper infrastructure to provide healthy and hygienic foods to the students. School cafeteria and canteen are built in school campuses of private and public schools both. Quality food on reduced price are provided to the students.

School foodservice department need to listen to concerns of students, parents, and others and respond to their concerns. Directors also need to be proactive in dealing with issues such as food quality and environmental impact. For example, if there are concerns about the environmental impact of the use of disposables and all of the styrofoam plates are recycled, let the public know.

Indian Government, at all levels, announces Welfare Schemes for a cross section of the society from time to time. These Schemes could be either Central, State specific or a Joint collaboration between the Centre and the States.

### **Innovative Practices**

- Kitchen Gardens in school is being encouraged.
- Use of Double Fortified Salt for cooking food.
- Semi Automated Kitchens to save nutritious value of the food, and to minimize time taken for cooking etc.
- Mother's involvement in checking the quantity and quality of food being served to children. They would be motivated to visit kitchens also to oversee cooking process and hygienic standards being maintained by the Service Provider.

The Mid-day Meal Scheme is the popular name for school meal programme in India. It involves provision of lunch free of cost to school-children on all working days. The key objectives of the programme are: protecting children from classroom hunger, increasing school enrolment and attendance, improved socialisation among children belonging to all castes, addressing malnutrition, and social empowerment through provision of employment to women. The scheme has a long history especially in Tamil Nadu and Gujarat, and has been expanded to all parts of India after a landmark direction by the Supreme Court of India on November 28, 2001. The success of this scheme is illustrated by the tremendous

increase in the school participation and completion rates in the state of Tamil Nadu.

12 crore (120 million) children are so far covered under the Mid-day Meal Scheme, which is the largest school lunch programme in the world. Allocation for this programme has been enhanced from Rs 3010 crore to Rs 4813 crore (Rs 48 billion 1.2 billion) in 2006-2007.

One of the pioneers of the scheme is the Madras Presidency that started providing cooked meals to children in corporation schools in the Madras city in 1923. The programme was introduced in a large scale in 1960s under the Chief Ministership of K. Kamaraj. However, the first major thrust came in 1982 when the then Chief Minister of Tamil Nadu, Dr. M. G. Ramachandran, decided to universalise the scheme for all children in government schools in primary classes. Later the programme was expanded to cover all children up to class 10. Tamil Nadu's mid-day meal programme is among the best known in the country.

Kerala has computerized the Mid-day Meal Scheme in schools. All the dealings are made online and the accounting become accurate. Several other states of India also have had mid-day meal programmes. The most notable among them is Gujarat that has had it since the late 1980s. Kerala started providing cooked meals in schools since 1995 and so did Madhya Pradesh and Orissa in small pockets. On November 28, 2001 the Supreme Court of India gave a landmark direction, which made it obligatory for the government to provide cooked meals to all children in all government and government assisted primary schools. The direction was resisted vigorously by State governments initially, but the programme has become almost universal by 2005.

### **Private Sector Participation in Mid-Day Meals**

The State of Karnataka introduced the provision of cooked meals in June 2002. Since then it has successfully involved private sector participation in the programme. One of the successful of the ventures is Akshaya Patra, which started with leadership from both ISKCON and secular leaders in the Bangalore community. The programme, now 100% secular, is an independent organization that cooks and distributes lunch to children in Bangalore Municipal Corporation schools. The Foundation gets a corpus from the State government but meets a major share of its costs with donations from private corporations and individuals in the city.

The programme is managed with an ultra modern centralised kitchen that is run through a public/private partnership. Food is delivered to schools in sealed and heat retaining containers just before the lunch break every day. The programme contains one of the best menus in school meal programmes in India with tasty sambar, rice, vegetables and some curd on most days.

Since the success of this programme private sector participation in mid-day meals has increased considerably. Software corporations such as Infosys, Bharti

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and Jindal are major donors to the programme. This model has been successfully replicated in rural Karnataka, Delhi, Hyderabad and other cities. The foundation is now serving mid-day meals to almost a million children every day and hopes to feed over 20 million children by 2020.

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### **Free School Meal**

The term free school meal refers to a meal that is provided to a child or young person during a school break that is paid for out of Government funding. For a child to qualify for a Free School Meal, their parent or carer must be receiving particular eligible benefits as stated by Government. Free School Meal applications are dealt with in different ways according to the Local Authority where you live. Some Local Authorities provide a centralised application process, whilst in other areas, individual schools deal with their parents/carers application. Usually the school caterer is informed of a pupils eligibility, it is unusual for pupils or their parents to be given physical cash for a meal.

Traditionally, when applying for a Free School Meal, parents would need to present evidence of their eligible benefit, usually in the form of a letter from the Department for Work and Pensions, Tax Credits (HMRC) or the Home Office. In October 2007, the Department for Children, Schools and Families introduced an 'Online Hub' pilot which allowed invited Local Authorities to check applicants eligibility without the need for claimants to submit evidence. The Hub communicates with HMRC, DWP and Home Office systems to upload information in order for Local Authorities to verify a claimants eligibility. The Hub gives Local Authorities no particular information about a claimant, it simply states whether or not a claimant is eligible. It gives no information regarding the particular type of benefit the claimant is receiving.

The Hub was rolled out for all Local Authorities to use in January 2008 and has helped Local Authorities to streamline application processes and more importantly has helped a lot more people access the benefit in a fast and efficient way.

### **History**

The 1944 Education Act made it an entitlement for pupils to receive a free school meal. This entitlement was scaled back in 1949 when a flat charge of 2.5 pence was introduced. Over the next thirty years this flat fee was gradually increased, until in 1980, legislation was introduced to remove the requirement for Local Education Authorities to provide a meal for every pupil. Since that date, authorities have been obliged only to provide a meal to those pupils who are eligible for a free meal. Before this, the Liberal Government of Britain introduced measures which gave power for local councils to give free meals for children from poor families in 1906. By 1914, over 158,000 children were fed free meals once every day. However, the number was low in comparison with all the other

poor children who needed free meals. In 2004 14.3% of pupils in English schools were eligible for Free School Meals.

### **Colleges**

From time immemorial, India has been a centre for learning. Thousands of years ago, great scholars used to teach through the scriptures. A variety of subjects such as philosophy, religion, medicine, literature, drama and arts, astrology, mathematics and sociology were taught and masterpieces on these subjects were written. Under the Buddhist influence, education was available to virtually everyone who wanted it and some world famous institutions arose out of the monasteries, such as Nalanda, Vikramshila and Takshashila. Nalanda, which flourished from the 5th to 13th century AD, was especially noteworthy. It had at one time about 10,000 resident students and teachers on its roll, including Chinese, Sri Lankan, Korean and other international scholars.

During the 11th century, the Muslims established elementary and secondary schools, "Madrasas" or colleges, and even universities at cities like Delhi, Lucknow and Allahabad, mostly using Arabic as the medium of instruction. During the medieval period, there was excellent interaction between Indian and Islamic traditions in all fields of knowledge like indology, religion, philosophy, fine arts, painting, architecture, mathematics, medicine and astronomy.

With the arrival of the British, English education came into being with the help of the European missionaries. In 1817, Hindu College was established in Kolkata. The Elphinstone Institution was set up in 1834 in Mumbai. In 1857 three universities were set up at Kolkata, Chennai and Mumbai. Since then, Western education has made steady advances in the country. With 354 universities and thousands of colleges affiliated to them, 428 engineering colleges and technological institutes, more than a 100 medical colleges, scores of agricultural institutes and many other specialised centres of learning and research in every subject and discipline, India can claim its position as one of the leading countries providing quality higher education to its people as well as to students and scholars from countries all over the world.

Today Indian universities and institutes of higher education and research have made a significant contribution to transmission of knowledge and enquiry into frontiers of science and technology. In the field of traditional subjects such as arts and humanities as well as in pure sciences, applied physics and chemistry, mathematics and in areas of technology, the universities and higher institutes have been playing a leading role in transforming the country into a modern industrialised, technologically advanced state. The ushering of the Green Revolution and the tremendous progress in dairy development have made India a major food-producing country on one hand; on the other hand, its development of space technology, production and launching of indigenous satellites,

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development of peaceful nuclear energy have brought it into the forefront of technologically advanced nations to which a large number of developing countries look for training and guidance.

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Indian universities and institutes of higher learning have been playing their role to promote the needs and aspirations of higher education and research to Indian students and scholars. These centres have been extending their cooperation and friendship towards students of other developing countries also, where facilities for higher studies and research are not adequate. In addition, a number of overseas students are also drawn to Indian educational institutions providing high-quality education at very competitive prices. Food service in Indian Colleges and Universities are one of the most significant issue which need to be addressed.

College food service centre such as canteen facilitates a three-way partnership between students, educational institutions and enterprises. In essence, College Canteen is an idea that responds to the need to make social networking more meaningful and purposeful for its users. By providing a platform for regular interaction between students, universities and businesses, College Canteen opens up many avenues for communication. Almost every college provide food facilities to the students.

Healthy and hygienic food is essential for the students in the campus of colleges and universities. College/University authorities as well as government put emphasis on the proper infrastructure of food service facilities. Canteens of colleges should be provided every essential equipments and commodities to give healthy food to the students. Students are offered subsidised food in the college/University canteen.

Canteen is not just the place where you go to eat. Especially in colleges and institutes of education this place is an open arena for debate, argumentative sessions on different issues, passing of love-letters, cracking gossips, kidding and having loads of fun with foods. It also prevails an environmental feeling of food culture among students.

The basic purpose of food service in colleges is to create a feeling of well being and multi-dimensional welfare. Factors such as the following could be emphasized:

- The facility should be unique.
- The facility should be of very high technology.
- The variety of menu items served can be improved.
- Food provided in college/University canteen should be healthy and hygienic.
- Quality of food will be consistent.
- Food safety can be assured through the system.

## **Hospitals**

Fresh, healthy, nourishing and appetising food is an essential part of caring for hospital patients and aged care residents. In addition to quality, budget is an important consideration for managers of health and aged care services.

Food services are often part of the hospital ancillary and food services division. Food and hospitality services in many country's health and aged care facilities can be managed in-house, contracted out to organisations that specialise delivering these services to health care operators or provided as a shared service.

Sustainable food procurement is attracting more attention with a growing concern for the environment and the increasing cost of transport and packaging factored into the price. Sustainable food procurement takes into consideration real and environmental costs such as transport pollution and food preparation waste.

Hospital food service management is a specialty. The goal should be to create a superior, delicious, nutritious hospital dining experience, in cafeteria and for patients, that drives up overall food quality and satisfaction-all while staying within budget. Hospitals should elevate cafeteria dining and patient dining services into a potent marketing advantage that will increase revenue, employee retention, and overall nutrition and health

Hospital food is an essential part of patient care. Good food can encourage patients to eat well, giving them the nutrients they need to recover from surgery or illness. The better hospital food programme aims to ensure the consistent delivery of high quality food and food services to patients

How much a real difference food service can make:

- Patients will eat better, and healthier
- Patient and guest satisfaction will soar
- Overall food quality will increase the faith of patients in hospital
- Food-related costs will decrease
- Catering will become a significant source of revenue and pride

## **Nursing Homes**

Quality food and food service are integral to quality of life for older adults in nursing homes. Meals help meet many needs for all persons, in and out of nursing homes. In nursing homes, meals and mealtimes are especially important. Many nursing home residents have special nutritional needs. Others may need food specially prepared due to digestive disorders. Mealtimes are one of the most important activities of each day and provide an important opportunity for social gathering and sharing. Due to their social and nutritional significance, meals are a major concern for most nursing home residents.

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All nursing homes must meet the following dietary requirements:

- Patients meals must meet recommended dietary allowances for persons of his/her age and sex;
- At least three meals shall be served daily, at a regular time, with not more than a 14-hour span between a substantial evening meal and breakfast;
- Menus for the current week shall be posted in the dining room or other public place;
- Hot foods shall be served hot and cold foods served cold;
- Meals shall be served in an appetizing and sanitary manner;
- Supplemental fluids and special nourishments should be provided if ordered by the physician;
- The facility must provide each resident with sufficient fluid intake to maintain proper hydration and health;
- Based upon a resident's comprehensive assessment, the facility must ensure that a resident maintains acceptable parameters of nutritional status, such as body weight and protein levels, unless the resident's clinical condition demonstrates that this is not possible; and receives a therapeutic diet where there is a nutritional problem;
- Nutritious snacks must be offered several times daily;
- Food should be served cut, ground, chopped, pureed, or in another manner which meets patient needs;
- Medicare and Medicaid certified nursing homes must consider patients personal preferences. If patient refuses food served, patient should be offered a substitute with similar nutritional value.

***Old People House***

Food services for elderly are provided by many different organisations. As there is a great variety of food and the elderly are usually more vulnerable to illnesses, food handlers should pay particular attention to the various risk factors when preparing the meal in order to protect the health of elderly.

**Understanding Food Poisoning**

Food poisoning is caused by consumption of foods or drinks contaminated with pathogens (including salmonella, norovirus and parasites), biochemical toxins or toxic chemicals.

Patients usually show gastrointestinal symptoms like nausea, abdominal pain, diarrhoea and vomiting. The incubation period usually varies from hours to days.

**Guidelines on Preparation of Meals for Elderly**

1. Facilities

- Ensure that adequate facilities, such as stove, refrigerator and heat holding equipment are available.
2. Purchase and Receipt of Ingredients
- Purchase ingredients from reliable and reputable suppliers.
  - Check the quality of ingredients upon receipt.
3. Storage Facilities and Temperature Control
- Stick to the "first-in-first-out" principle for food storage.
  - Check and record the temperature of refrigerators regularly. Keep chillers at 4°C or below and freezers at -18°C or below.
  - Keep raw and cooked foods in separate refrigerators. If they are stored in the same refrigerator, put cooked food above the raw ones to prevent cross contamination.
4. Food Handling and Cooking
- Defrost frozen food in chillers or under running water.
  - Cook food thoroughly. Use a thermometer to ensure that the centre of food reaches 75°C or above.
  - To cater for the special dietary needs of the elderly, we should:
    - adopt the "cook-serve system" to shorten the food preparation time as far as practicable;
    - carefully handle the cooked food that needs further processing (e.g. to blend food into a smooth puree); and
    - clean and sanitise all food contacting surfaces thoroughly before use (especially blenders for cooked food and feeding spoons). Sanitisation can be done by using approved bactericidal agents or immersing cleaned utensils in boiling water for atleast one minute.
5. Delivery and Consumption
- Advise the elderly to have the meals as soon as possible and finish them in one go.
  - Check the food temperature on random basis before distributing and delivering the food to ensure that the food is kept at 60°C or above.

## NOTES

### **Industrial Canteen**

The importance for a proper, adequate and balanced diet both in the context of general health and in relation to work would hardly need emphasis. Good nutrition not only contributes to improved health and greater welfare but also provides for improved work performance and productivity. The ILO has been concerned for well over a half century with the subject of nutrition of workers and its experience in this area is proven. In 1971 a joint FAO/ILO/WHO meeting recommended the need to intensify efforts and activities to increase awareness and to prepare a simple and practical manual covering the basic principles of



workers' feeding and methods for the establishment and operation of workers' feeding programmes.

## NOTES

Various industrial establishments provide subsidised food facilities to the employees. Considering the energy requirements of the employees, the industrial establishments offer healthy and hygienic food facilities to the workers/employees. The industrial canteen must possess the following features:

- Adequate counter space shall be provided for food preparation. All food preparation counters shall be constructed of food grade material.
- Food enclosures shall be vented to remove excess heat as necessary.
- Food enclosure ventilation shall be vermin proof.
- Food Storage Compartments:
  1. Food storage compartments shall be large enough to accommodate expected food volumes.
  2. Food storage compartments shall be closed when not in use.
  3. Food storage compartments for sodas and hot dogs shall be in separate ice bins.
  4. Food storage compartments for dry goods and foods shall be in separate compartments.
  5. Food storage compartments shall not contain plumbing of any kind.

## 1.8 TRANSPORT

### *Railway*

Railway authorities are in charge of catering services on trains and railway stations across the world. Depending on the distance covered by the train and average passenger load factor, the railways either equip trains with their own pantry cars or provide meals at select stations en route.

In India, Indian Railway Catering and Tourism Corporation (IRCTC) is a subsidiary of the Indian Railways that handles the catering, tourism and online ticketing operations of the railways.

### *Guidelines to Maintain Food*

1. *Keep all food items protected from contamination at all times of transportation, storage, display and service.*

Food items must be covered with plastic or foil wrap or lid placed on containers to prevent contamination from dust, insects, unclean surfaces, unnecessary handling, coughing or sneezing, toxic materials, etc.

Where possible, foods should be individually pre-portioned and placed in plastic wrap or sealable bags to eliminate handling at the service site.

If needed, multi-use (non-disposable) serving utensils for hot or cold items must be stored in the hot or cold food or in the temperature-holding unit between

servings to prevent inoculating the food with ambient temperature food residue from the serving utensil. Disposable plastic, paper, or aluminum utensils should be used whenever possible.

Ice, if it must be used as a food ingredient, is to be considered a food item, provided from an approved source, and protected from contamination.

2. *Keep all utensils, both single service or multi-use, protected from contamination at all times of transportation, storage, display, service.*

Single-service plasticware (forks, knives, spoons, straws, etc.) must be provided individually wrapped or from a dispensing device that prevents customer contamination. If dispensed unwrapped, forks, knives and spoons should be placed in an upright cylindrical container with only the handles available to the customer. Do not place these unwrapped utensils in a flat, open tray which can allow handling by patrons of the utensil's eating surfaces.

Other single service materials such as cups, plates, bowls, etc., must be dispensed from a clean dispenser or surface and protected from contamination by keeping the food contact surfaces inverted on a clean table, tray, or non-absorbent surface.

All food utensils must be stored off the ground or floor on clean surfaces. That means providing sufficient tables, counters, or cabinets to accommodate all such items to be maintained at the service location. Tables and counters must be kept clean by using disposable paper towels and a disinfectant sanitizer such as a bleach and water solution (1 tablespoon of bleach per gallon of water), or commercially packaged single-use disinfectant cloths. Tables must be smooth and non-absorbent or covered with clean table covers.

Any multi-use utensils that must be used are to be washed and sanitized in a licensed kitchen with an appropriate detergent, clean water rinse and immersion in a sanitizing solution for 1 minute; or washed mechanically in a dishwashing machine.

3. *Good personal hygiene must be followed by those handling or serving foods including clean hands; hair properly restrained; clean clothing; clean, well-groomed appearance; no use of tobacco or eating while handling or serving foods, and no wearing of jewelry which will contaminate food. Those handling foods must be free of infected cuts, sores, or communicable diseases which can allow transmission of illness through food.*

Hand washing capability must be provided and used by those preparing and handling food for any operations other than those where only commercially pre-packaged or wrapped food items are served. If permanent handwashing facilities supplied with soap and disposable towels are available nearby and convenient for use, such as in restroom facilities, this will be acceptable handwashing provision. An alternative for outside events is to have one or more

## NOTES

water containers (such as insulated beverage coolers) with dispensing valves that can remain open while allowing water to flow over hands being washed and rinsed.

## NOTES

These handwashing stations need to be set up at locations convenient to where food is handled and must include pump-dispensed hand soap, paper towel supply, and waste container to collect the wash water. Sufficient clean water must be on site to accommodate handwashing needs during the food service event. The person in charge at the event will need to demonstrate proper handwashing at the time of any regulatory inspection of the food service operation.

Disposable plastic gloves must be provided and worn when direct food handling is involved. Gloves will, however, become soiled and must be changed when contaminated, soiled, or torn.

Hair must be restrained or under control to prevent handling of hair or allowing it to fall into or contact food or utensils. This can be done by clean hats, headbands, hairnets, scarves, or appropriately tying the hair back.

4. Waste containers must be provided for both the use of the operation personnel and the patrons. Sufficient number of waste containers, lined with disposable plastic bags, must be provided for convenient access by those intended to use them and to accommodate the expected waste.

### *Airlines*

An airline meal or in-flight meal is a meal served to passengers on board a commercial airliner. These meals are prepared by airline catering services. The first kitchens preparing meals in-flight were established by United Airlines in 1936. These meals vary widely in quality and quantity across different airline companies and classes of travel. They range from a simple beverage in short-haul economy class to a seven-course gourmet meal in long-haul first class.

The type of food varies depending upon the airline company and class of travel. Meals may be served as "one tray" or in multiple courses with no tray and with a tablecloth, metal cutlery, and glassware (generally in first and business classes). The airline dinner typically includes meat (most commonly chicken or beef) or fish, a salad or vegetable, a small bread roll, and a dessert.

Caterers usually produce alternative meals for passengers with restrictive diets. These must usually be ordered in advance, sometimes when buying the ticket. Some of the more common examples include:

- Cultural diets, such as French, Italian, Chinese, Japanese or Indian style.
- Infant and baby meals. Some airlines also offer childrens' meals, containing foods that picky children will enjoy such as baked beans, mini-hamburgers and hot dogs.

- Medical diets, including low/high fiber, low fat/cholesterol, diabetic, peanut free, non-lactose, low salt/sodium, low-purine, low-calorie, low-protein, bland (non-spicy) and gluten-free meals.
- Religious diets, including Kosher, Halal and Hindu, Buddhist and Jain vegetarian (sometimes termed Asian vegetarian) meals.
- Vegetarian and vegan meals. Some airlines do not offer a specific meal for vegetarians; instead, they are given a vegan meal.

## NOTES

During morning flights a cooked breakfast or smaller continental-style may be served. On long haul flights and (short/medium haul flights within Asia) breakfast normally includes an entrée of pancakes or eggs, traditional fried breakfast foods such as sausages and grilled tomatoes, and often muffins or pastry, fruits and breakfast cereal on the side. On shorter flights a continental-style breakfast, generally including a miniature box of breakfast cereal, fruits and either a muffin, pastry, or bagel. Coffee and tea are offered as well, and sometimes hot chocolate.

### Quality

Prices charged to the passengers for food on board the flight ranges in price from free (many airlines, especially those in Asia and all airlines on long haul flights offer free meals) to as much as ten dollars (Midwest Airlines). Quality may also fluctuate due to shifts in the economics of the airline industry, with private jet passengers receiving the equivalent of five-star food service.

On the longest flights in first class and business class, most Asian and European airlines serve multicourse gourmet meals, while airlines based in the US tend to serve large, hearty, meals including a salad, steak or chicken, potatoes, and ice cream. Some long-haul flights in first class (from mostly Asian carriers) offer such delicacies as caviar, champagne, and sorbet. The cost and availability of meals on US airlines has changed considerably in recent years, as financial pressures have inspired some airlines to either begin charging for meals or abandon them altogether in favor of small snacks.

Food safety is paramount in the airline catering industry. A case of mass food poisoning amongst the passengers on an airliner could have disastrous consequences. For example, on February 20, 1992, shrimp tainted with cholera was served on Aerolíneas Argentinas Flight 386. An elderly passenger died and other passengers fell ill.

Food safety with technical crew meals (pilots and flight engineers) is sometimes even stricter than for passengers. Many foodstuffs are banned completely from crew meals, including all egg products and often any dairy that has not been ultra-heat treated. The meals supplied on some airlines are labeled with the

position of the crew member for whom they are intended, and no technical crew member eats any of the same products as his or her colleague. This ensures that each pilot eats a different meal to minimize the risk of all pilots on board being ill.

## NOTES

### *Navy or Sea*

Excellence in foodservice is essential to the health and morale of Navy members and to the overall readiness of the Operating Forces. Because food is a major item of expense, use of the best food management practices (conservation, preparation, and serving) is necessary. Navy food management teams use on-the-job training to provide foodservice personnel with skill in preparing and serving food. This significantly improves the overall Navy foodservice program.

Navy food service management team members are directly responsible to provide hygienic food for better performance on mission. The team members may be assigned for additional duty to the host command for military and administrative purposes. The mission of food management team is to aid ships and ashore activities in raising the quality and standards of foodservice. This assistance is provided in the following manner:

- Participating in an advisory capacity in managing the local foodservice program by working along with foodservice personnel.
- Demonstrating proper techniques in all phases of foodservice. This includes management, production and serving of food, sanitation, training, and accounting. Their training also motivates foodservice personnel toward increased efficiency and effectiveness.
- Providing on-the-job training to foodservice personnel through the "do as I do" method of instruction, employing advanced training aids and techniques.
- Instilling management awareness in responsible foodservice personnel. Placing special emphasis on high-quality food preparation, progressive cookery, proper serving techniques, foodservice safety precautions and operating procedures, fire prevention, sanitation, and personal hygiene.
- Inducing and stimulating professional pride in foodservice personnels. Reviewing the use of facilities, equipment, personnel, and other foodservice resources. Identifying limitations that hamper fulfillment of the foodservice goal.
- Reviewing manual and automated foodservice records, organization and operating manuals, and financial returns to determine compliance with

the Naval Supply Systems Command (NAVSUP) Manual and current foodservice directives.

- Evaluating and aiding in implementing foodservice policies and procedures established by the Department of Defense, the Department of the Navy, and commands. Aiding in developing patron foodservice education programs to make sure personnel understand the foodservice operation, especially conservation.
- Providing information on and demonstrating new developments in foodservice and food items.
- Evaluating the practical application of foodservice techniques. Imparting programs of instruction, curricula, and formal training through technical and on-the-job training, and thereby making necessary recommendations to navy personnels.
- Exchanging ideas on foodservice operations with activities visited. Sending new ideas for dissemination to other NFMTs and field activities.
- Recording observations to provide a basis for follow-up actions to aid in resolving problems beyond the control of the local foodservice management personnel through better use of material and financial resources.

Merchant ships often carry Catering Officers - especially ferries, cruise liners and large cargo ships. In fact, the term "catering" was in use in the world of the merchant marine long before it became established as a land-bound business. The "Careers Scotland" website gives the following definition of a Catering Officer's duties:

Merchant Navy catering officers oversee the purchase, preparation and serving of food and drink to crew members and passengers. They are also responsible for accommodation services, including the provision of linen, bedding and laundry. They may be in overall charge of administration, organising record keeping, wage payment, and the interpretation of customs and immigration records that apply while the ship is in port.

On larger ships, responsibilities may be shared with the purser, who looks after passengers' comfort and facilities such as banking and shopping, while the catering officer concentrates on organising stores, overseeing the preparation of menus and meals and generally managing dining rooms and services. On a cruise liner, catering officers may be known as 'hotel services managers'.

Merchant Navy officers sometimes work in difficult and uncomfortable conditions. They spend long periods of time away from family and friends.

## NOTES



## **SUMMARY**

1. The food service industry encompasses those places, institutions, and companies responsible for any meal prepared outside the home. This industry includes restaurants, school and hospital cafeterias, catering operations, and many other formats.
2. Management principles are statements of fundamental truth. These principles serve as guidelines for decisions and actions of managers. They are derived through observation and analysis of events which managers have to face in practice.
3. Food service managers are responsible for the daily operations of restaurants and other food service establishments that prepare and serve meals and beverages to customers.
4. The biggest factor in food service industry's success will be how well the expenses are controlled. This includes food, labor, advertising, equipment, management, rent, operating costs and the rest of your overhead costs.
5. Fresh, healthy, nourishing and appetising food is an essential part of caring for hospital patients and aged care residents. In addition to quality, budget is an important consideration for managers of health and aged care services.

## **NOTES**

## **GLOSSARY**

**Flaming:** to put light all around the hotel/restaurant for clear visibility.

**Carving:** simply changing the shape of a material usually using tools.

**Resource management:** the efficient and effective deployment for an organization's resources when they are needed.

**Human resource management:** this is the science of allocating human resources among various works or business units, maximizing the utilization of available personnel resources to achieve business goals.

**Hotel:** an establishment that provides paid lodging on a short-term basis.

**Restaurant:** an establishment that prepares and serves food and drink to customers.

**Café:** it is a restaurant that does not offer table service.

**Club:** an association of two or more people united by a common interest or goal.

**Fast food:** it is the term given to food that can be prepared and served very quickly.

**Street food:** the food obtainable from a streetside vendor, often from a makeshift or portable stall.



### **REVIEW QUESTIONS**

#### **NOTES**

1. What are the basic principles of food service management?
2. Why is the food service management important?
3. Discuss the role of food service manager in the management.
4. How is food service managed in a restaurant?
5. Outline the importance of food service management in hospitals.
6. What are the basic guidelines to manage food services in old people house?
7. Differentiate between the tangible and intangible tools of food service management.

### **FURTHER READINGS**

Ronald Kinton and victor cesarani (1992), "the theory of catering", Bulter and Tanner Ltd., France and London.

Mohini Sethi and Surjeet Mohan (1993), catering management— An integrated approach, second edition, wiley esteem limited, New Delhi.

Koogler, G.H., & Nicholanco, S. (1977). Analysis of a decision framework for prepared food systems. *Hospitals*, 50(4), 95-98..

Nettles, M.F., & Gregoire, M.B. (1996). Satisfaction of foodservice directors after implementation of a conventional or cook-chill foodservice system. *Journal of Foodservice Systems*, 9, 107-115.

Nettles, M.F., & Gregoire, M.B. (2000). Analysis of the process used to select a food production system for school foodservice. *The Journal of Child Nutrition & Management*, 84-91.

# UNIT – II

*Infrastructure and  
Equipment for Food  
Service Operations*

## INFRASTRUCTURE AND EQUIPMENT FOR FOOD SERVICE OPERATIONS

NOTES

### OBJECTIVES

After going through this unit, students will be able to:

- state the Infrastructure and equipments required for the food service operations;
- point out the features of outlay of the food service area;
- discuss the design, installation, operation and maintenance of the food service equipments;
- explain the systems of food service operation;
- understand the vending and mobile catering.

### STRUCTURE

#### 2.1 Introduction

#### 2.2 Design and Layout of Food Service Facilities

- Kitchen Planning and Layout
- Kitchen Equipment

#### 2.3 Equipments

- Special Food Service Equipments
- Equipments Maintenance and Safety

#### 2.4 Food Service Operations

#### 2.5 Types of Food Service Systems

- Conventional Foodservice System
- Centralized Foodservice System
- Ready-Prepared Foodservice System
- Assembly-Serve Foodservice System
- Waiter Services

- Summary
- Glossary
- Review Questions
- Further Readings

### 2.1 INTRODUCTION

Food service operation means a place, location, site, or separate area where food intended to be served in individual portions is prepared or served for a charge or required donation. As used in this division, "served" means a response

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made to an order for one or more individual portions of food in a form that is edible without washing, cooking, or additional preparation and "prepared" means any action that affects a food other than receiving or maintaining it at the temperature at which it was received.

Except when expressly provided otherwise, "food service operation" includes a catering food service operation, food delivery sales operation, mobile food service operation, seasonal food service operation, temporary food service operation, and vending machine location.

"Catering food service operation" means a food service operation where food is prepared for serving at a function or event held at an off-premises site, for a charge determined on a per-function or per-event basis.

"Food delivery sales operation" means a food service operation from which individual portions of food are ordered by a customer, prepared at another food service operation or a retail food establishment, and delivered to the customer by a person other than an employee of the food service operation or retail food establishment that prepared the food.

"Mobile food service operation" means a food service operation that is operated from a movable vehicle, portable structure, or watercraft and that routinely changes location, except that if the operation remains at any one location for more than forty consecutive days, the operation is no longer a mobile food service operation. "Mobile food service operation" includes a food service operation that does not remain at any one location for more than forty consecutive days and serves.

"Seasonal food service operation" means a food service operation, other than a mobile food service operation, that is operated for not more than six months in a licensing period.

"Vending machine location" means an area or room where one or more vending machines are installed and operated, except that if the machines within an area are separated by more than one hundred fifty feet, each area separated by that distance constitutes a separate vending machine location. As used in this division, "vending machine" means a self-service device that automatically dispenses on the insertion of currency, tokens, or similar means a predetermined unit serving of food, either in bulk or in package, without having to be replenished after each use.

## 2.2 DESIGN AND LAYOUT OF FOOD SERVICE FACILITIES

There are numerous elements that contribute to the success of a food service operation. We are going to focus on the layout and how it can increase profitability. Layout has a strong impact on the customer and your ability to service the customer.

Many new food service providers like to design their own layout in order to give the space their own personal touch. But without any clear idea of what you should include, you might feel more confused than inspired by this kind of plan. There is need of adequate knowledge of planing the layout of the work place.

## NOTES

When you are designing your work place for food services, keeping the following areas in mind will help you create a functional and beautiful space.

- **Kitchen** - If you're planning on cooking high quality meals, you will need to create a high quality kitchen. This kitchen should be spacious enough to accommodate any equipment that you will need to install as well as spacious enough to accommodate multiple chefs and cooks as you see fit. You will also need to have areas for food preparation, food storage, food handling, shipments, and dishwashing. This will help you have everything you need to run a food service centre all in one place. And leaving some room to expand is always a good idea if that's in your business marketing plan.
- **Cashier area** - If your customers are going to have to pay on their way out, you will need to include a cashier area in your work place layout. This can be a very simple area with one or two registers that is next to the door.
- **Bar** - If you plan to serve alcohol in your food service operation, you might want to create a separate bar area. This will serve as a holding area for customers that want to drink before they area seated, plus it gives single customers a chance to sit by themselves without having to wait for a table. If you plan on having a lot of weekend traffic, this area should be as spacious as the space allows it to be.
- **Service area** - In your workplace layout, the more space you have in your dining room, the more customers you can seat and serve. Try to create a dining room that is spacious to use, but also not too overwhelming to the customer when they walk in. You want it to be easy to move around in so that customers feel like they're getting their own dining experience and not just sitting far too close to others.
- **Staff space** - Your staff will also need space in your business layout. Just a simple room where they can put their coats and personal belongings as well as a time clock can be helpful.
- **Office** - The office needs to be a secure area in which you can store money and other important things for your service centre. It is generally situated in the back of the layout and surrounded by solid walls for security purposes.
- **Restrooms** - The public restrooms in the food service operation layout

**NOTES**

design should be spacious enough to accommodate multiple people, if at all possible.

- Employee restrooms - These restrooms need not be too complicated, but they should be a separate addition away from the public's restrooms.

***Kitchen Planning and Layout***

The heart of every food service centre is the kitchen. Here raw ingredients are prepared for cooking (washing, peeling, chopping etc) and cooked for service. The quality of food and speed of service depend on efficiency, hence planning, kitchen design and layout must be undertaken with due care and expert advice if necessary.

Errors committed in planning and purchasing specifications are extremely costly in the end. A poorly planned kitchen results in high payroll, slow production, unhappy kitchen staff, and dissatisfied guests.

Ideally, kitchens should be planned according to the menu envisaged. This will allow proper equipment selection, spacing, determination of capacity and purchase accordingly. Today's high rents and construction costs dictate wise use of every square inch of space. Food service providers should be knowledgeable about both cooking and space allocation. Consultants, if hired, should be interviewed in-depth before assignment.

The most qualified people in kitchen planning are experienced and successful chefs. They know from experience the best and most efficient equipment, layout and spacing.

The first decision involves selecting fuel. There are several from which to choose:

- Wood
- Natural gas
- Propane gas
- Electric
- Steam
- Heating oil

Wood and heating oil equipment are generally not used in North American kitchens except wood-fired pizza ovens since they require frequent cleaning and consume space.

The most frequently used fuels are natural gas, electricity, steam and propane.

The choice of fuel depends on location. In large cities, natural gas and electricity are widely available, and a combination of both is wise. In some regions, steam may be available and recommended for certain pieces of equipment. There

are also steam generating units ready to install. Propane is recommended where neither gas nor electricity is available i.e. wilderness camps or resorts.

Chinese chefs prefer propane for its extremely intense heat. If electricity and gas are available, equipment should be selected accordingly. This will allow production if one or the other fuel is temporarily unavailable.

In third world countries electricity supply may be disrupted frequently, and gas pressure inadequate for commercial use. In such regions, propane or butane cylinders are recommended. Once the fuels choices are made, utilities should be contacted to ensure for timely hook ups with main supply lines, and further planning can resume.

Back-of-the-house space including the kitchen varies with both the menu size and type of operation. There are no set rules or ratios for reference. However, in full-scale restaurants, five square feet per seat is a good guideline. If many convenience ingredients are used, kitchen space requirements will be less. For take out operations back-of-the-house requirements are considerably less than in standard restaurants.

The first step in kitchen planning is a flow chart, which allows to eliminate bottlenecks both for service and production.

During planning, the following criteria should be considered:

- Departmentalisation, to achieve division of labour
- Smooth traffic flow
- Increased efficiency
- Acceptable sanitary conditions

Once these are settled, the following points become important:—

- Lighting
- Ventilation
- Sprinkler system
- Floor covering
- Wall covering

Ideally, receiving, storage, preparation and cooking areas should be on the same floor as the restaurant. In downtowns of large cities, land costs are exorbitant, hence architects and kitchen planners build vertically to fully utilize every square inch of space. While it is true that some restaurateurs think it unnecessary to plan the kitchen with due care to detail, experienced operators are convinced that every hour spent on planning pays back handsomely. Hospital and school kitchens require a different approach and depend very much on the menu.

### **Lighting**

Every kitchen must be well illuminated to prevent accidents, increase efficiency, facilitate quality control and prevent waste. Fluorescent light fixtures are advisable for their efficiency and cool operating temperatures.

## **NOTES**

## **Ventilation**

Ventilation is of great importance in any kitchen. It prevents odours from penetrating the dining area and increase the well being of cooks. This in turn improves quality and efficiency. Some operators actually air condition their kitchen with laudable results. A ventilation system consists of:

- The collection device (canopy)
- Vehicle to move the air (motor)

Canopies are equipped with filters, of which there are three types:

- Wire mesh
- Baffle
- Liquid

(All filters must be thoroughly cleaned at regular intervals to reduce fire hazards, as they collect grease)

The size of the canopy and motor depend on the size of the kitchen. Canopies must overhang cooking equipment on both sides by at least 8" (20 cm) in most jurisdictions.

## **Sprinkler Systems**

All kitchens and restaurants must have an appropriate sprinkler system.

There are two types:

- Water releasing
- Carbon dioxide mixed with fire extinguishing chemicals
- Water releasing sprinkler systems are inappropriate for kitchens.

Carbon dioxide mixed with extinguishing chemicals type systems are recommended.

## **Floor Coverings**

Kitchen floors must be non-slip to prevent accidents. Tile coverings are prone to cracking and warping due to constant moisture present. If tiles are used, cover them with a non-slip coating. Continuous non-slip floor covering containing stone chips is the most suitable. It can be applied quickly and inexpensively. They are easy to clean and prevent insect infestation.

## **Wall Coverings**

Kitchen walls can be covered with tiles or durable high gloss finish paint. Tiles are initially expensive, but are durable and easy to clean. High gloss finish paint is more expensive in the long run and less sanitary.

After aforementioned decisions are made, the planner can proceed to selecting and specifying equipment:

## **NOTES**

- Cooking equipment, brands, capacity requirements, and sources
- Stationary equipment i.e. mixers, bank saws, food processors
- Work table sizes, heights, finishes and locations
- Widths of aisles for traffic between stationary equipment
- Refrigeration units and freezers, types and sizes
- Storage areas' size and shelving, for foodstuffs, china, cutlery and glassware
- Dishwashing area equipment, location capacity
- Receiving area, location, layout, size, equipment i.e scale, running water, lighting, security
- Garbage disposal area, location, size, and type

## NOTES

(N. B. In hot countries, consider refrigeration, and in cold proper insulation and security from scavenging animals)

### ***Kitchen Equipment***

Kitchen equipment can be conveniently grouped into five categories; storage-, preparation-, cooking-, accessory- and service equipment.

Food service centre planners are advised to study all equipment available, manufacturer, source, and compatibility with local standards in force.

Storage equipment consists of industrial food-grade shelving. It may be wire or solid. Wire shelving is appropriate for canned goods or boxes, solid shelving is required in refrigerators and freezers. They are easy to clean. All shelving must be arranged appropriately to facilitate adequate air circulation.

There are upright, chest, and walk-in freezers. Chest freezers preserve cold air but utilize more floor space, whereas upright freezers use less floor space but allow cold air to escape rapidly each time the door is opened.

Walk-in freezers are recommended for operations using considerable amounts of frozen foods. Freezers can be purchased pre-fabricated, modular, or be custom-made. In every walk-in installation, care should be taken to position the freezer to open into a refrigerator in order to preserve at least part of the cold air, which inevitably escapes each time the door is opened. (Cold air costs three times as much as warm air)

There are standard- or blast freezers for quick freezing of vegetables or plated food. Cryogenic freezers use liquid nitrogen or carbon dioxide and freeze fast. They are recommended for hospitals and institutions feeding large numbers of people at set times

### **Refrigerators**

Refrigerators prevent bacterial growth and prolong the shelf life of perishable foods. There are electricity or gas fuelled, reach-in, roll-in, drawer and walk-in



**NOTES**

refrigerators. Electricity powered refrigerators are the most common. Reach-in and walk-in refrigerators are readily available in a variety of sizes and configurations. Walk-in refrigerators can be specified modular or custom made. Drawer and roll-in refrigerators are practical and save labour but must be custom manufactured and expensive.

All commercial refrigerators must be equipped with thermostats both inside and out. Interiors of all must be easy to reach, clean, and well lit.. Walk-in refrigerators must have non-slip floors and equipped to open from inside and outside. All doors must be airtight and equipped with self-closing mechanisms to minimize cold air loss.

A well-designed compressor maintenance programme will help prolong usable life. Wooden storage shelving is not recommended. Tempering refrigerators to re-thermalize plated frozen food is practical in hospital and correctional institutions.

Preparation Equipments- constitute all equipment employed in food preparation (chopping, dicing, cubing, peeling, slicing, mixing, processing). They speed up all these functions, reduce labour, facilitate quality control and promote consistency.

Specify sturdy brands, backed up by a good supply of spare parts, warranties, guarantees and service. Foreign suppliers should be specified only if local manufacturers are inadequate or do not exist.

Cooking Equipments- All equipment used in cooking fall under this category, and may be fuelled by electricity, propane, natural gas, oil, wood, or steam.

The fuel must be selected with due care according to availability and style of cooking being envisaged. Steam generators are available, so are cooking equipment with self steam generating installations.

Always specify cooking equipment with the least number of moving parts. The following cooking equipments are standard:

- Ranges: -hot top
- open burners
- Deep fryers: electric or gas
- Broilers: ceramic bricks
- radiant
- infra red
- open
- Salamanders: (top heat)

- electric
- infrared
- gas
- Steam Fuelled Equipment

Steam jacketed kettles- Floor, counter top, tilting or non-tilting, with or without spout in various sizes are available.

Pressure steamers are suitable for quantity batch cooking. Combi-ovens combine steaming and roasting, and are popular due to their space saving features.

Ovens – a wide range of ovens is available. They can be under ranges, freestanding, electric or gas, steam injected or not. Convection ovens are practical for roasting and rotate hot air speeding up cooking time. Conveyor type ovens are appropriate in high volume pizza operations or in very busy bakeries. Micro wave ovens are used mostly for re-thermalizing.

Griddles– consist of a stainless steel non-stick surface fuelled either by gas or electricity, equipped with appropriate grooves and grease collectors. They are versatile and very much in demand in short order kitchens and cafeterias.

Tilting Frying Pans - may be gas or electric fuelled. They are practical in large banquet halls or hotel banquet kitchens catering to huge banquets. Cooking equipment is rated either in units per hour or BTU's (British Thermal Unit) One British Thermal Unit is the amount of energy required to raise the temperature of one pound of water by one degree Fahrenheit. The rating is important to calculate power requirements.

Accessories – Electronic thermostats, energy load levellers (reduce peak electricity demand) and automatic shut off switches fall under this category. Service equipment – helps keep prepared foods hot. Steam tables, flambé carts, gueridons, coffee machines, small wares (pots, pans, whips, scoops) self levelling plate dispensers, dishwashers, compactors, filtering devices fall into this category.

## **2.3 EQUIPMENTS**

To provide satisfactory service to the customers, most of the food service providers use high quality service equipments. Service equipments are essentially most important part of a food service centre to attract customers. Food service providers use high quality service equipments right from the table to the kitchen such as table, linen, chinaware etc.

Apart from the quality of food, the equipments used to prepare the food or the equipments used to offer the food have greater significance in a food service establishment from customer's satisfaction point of view. In the following paragraphs we will discuss some of the most important equipments elaborately.

## **NOTES**

## **Linen**

### **NOTES**

Linen is a textile made from the fibers of the flax plant, *Linum usitatissimum*. Linen is labor intensive to manufacture, but when it is made into garments, it is valued for its exceptional coolness and freshness in hot weather. It is superior to cotton in this regard.

Textiles in linen weave pattern made of cotton, hemp and other non-flax fibers may also be loosely, if improperly, referred to as "linen", which can make the exact meaning of the word linen, depending on the context. Such fabrics generally have their own specific names other than linen, for example, fine cotton yarn in linen weave is called Madapolam

The collective term linens is still often used generically to describe a class of woven and even knitted bed, bath, table and kitchen textiles. The name linens is retained because traditionally, linen was used for many of these items. In the past, the word "linens" was also used to mean lightweight undergarments such as shirts, chemises, waistshirts, lingerie, and detachable shirt collars and cuffs, which were manufactured almost exclusively of linen.

Linen textiles appear to be some of the oldest in the world: their history goes back many thousands of years. Fragments of straw, seeds, fibers, yarns, and various types of fabrics which date back to about 8000 B.C. have been found in Swiss lake dwellings. Linen was used in the Mediterranean in the pre-Christian age.

Linen was sometimes used as currency in ancient Egypt. Egyptian mummies were wrapped in linen because it was seen as a symbol of light and purity, and as a display of wealth. Some of these fabrics, woven from hand spun yarns, were extremely fine, and cannot be matched by modern spinning techniques.

Today linen is usually an expensive textile, and is produced in relatively small quantities. It has a long "staple" (individual fiber length) relative to cotton and other natural fibers. Most of the restaurants use linen for decorating dining tables besides using it for other purposes too. It is pretty clear that in the restaurant industry, good quality tablecloths make a difference in the customers' eyes (new and existing) which helps take care of the restaurant business. Linen is also used in restaurants for chef uniforms, waiter uniforms, washing cloth etc. just because of its unique features.

Highly absorbent and a good conductor of heat, linen fabric feels cool to the touch. Linen is the strongest of the vegetable fibers, with 2 to 3 times the strength of cotton. It is smooth, making the finished fabric lint free, and gets softer the more it is washed. However, constant creasing in the same place in sharp folds will tend to break the linen threads. This wear can show up in collars, hems, and any area that is iron creased during laundering. Linen has poor elasticity and does not spring back readily, explaining why it wrinkles so easily.

## NOTES

Linen fabrics have a high natural luster; their natural color ranges between shades of ivory, ecru, tan, or grey. Pure white linen is created by heavy bleaching. Linen typically has a thick and thin character with a crisp and textured feel to it, but it can range from stiff and rough, to soft and smooth. When properly prepared, linen fabric has the ability to absorb and lose water rapidly. It can gain up to 20% moisture without feeling damp.

When freed from impurities, linen is highly absorbent and will quickly remove perspiration from the skin. Linen is a stiff fabric and is less likely to cling to the skin; when it billows away, it tends to dry out and become cool so that the skin is being continually touched by a cool surface. It is a very durable, strong fabric, and one of the few that are stronger wet than dry. The fibers do not stretch and are resistant to damage from abrasion.

However, because linen fibers have a very low elasticity, the fabric will eventually break if it is folded and ironed at the same place repeatedly. Mildew, perspiration, and bleach can also damage the fabric, but it is resistant to moths and carpet beetles. Linen is relatively easy to take care of, since it resists dirt and stains, has no lint or pilling tendency, and can be dry cleaned, machine washed or steamed. It can withstand high temperatures, and has only moderate initial shrinkage.

Linen should not be dried too much by tumble drying: — it is much easier to iron when damp. Linen wrinkles very easily, and so some more formal linen garments require ironing often, in order to maintain perfect smoothness. Nevertheless the tendency to wrinkle is often considered part of the fabric's particular "charm", and a lot of modern linen garments are designed to be air dried on a good hanger and worn without the necessity of ironing.

A characteristic often associated with contemporary linen yarn is the presence of "slubs", or small knots which occur randomly along its length. However, these slubs are actually defects associated with low quality. The finest linen has very consistent diameter threads, with no slubs. Over the past 30 years the end use for linen has changed dramatically. Approximately 70% of linen production in the 1990s was for apparel textiles whereas in the 1970s only about 5% was used for fashion fabrics.

Linen uses range from bed and bath fabrics (tablecloths, dish towels, bed sheets, etc.), restaurant, home and commercial furnishing items (wallpaper/wall coverings, upholstery, window treatments, etc.), apparel items (suits, dresses, skirts, shirts, etc.), to industrial products (luggage, canvases, sewing thread, etc.). It was once the preferred yarn for hand sewing the uppers of moccasin-style shoes (loafers), but its use has been replaced by synthetics.

A linen handkerchief, pressed and folded to display the corners, was a standard decoration of a well-dressed man's suit during most of the first part of the 20th century. Currently researchers are working on a cotton/flax blend to

create new yarns which will improve the feel of denim during hot and humid weather.

### **Chinaware**

#### **NOTES**

Chinese ceramics has developed in the form of a fine art ever since the rule of the dynasties. During the Paleolithic era, which is about 11,000 years ago, a few of the initial types were produced. Chinese Ceramics can be put to a wide range of uses starting from the use in the construction materials as bricks and tiles to hand-made pottery vessels baked in bonfires or kilns to the finely crafted porcelain wares or China sets initially created for the royalty. Porcelain as understood by the Chinese is used to mean a wide variety of ceramics, which have been fired on high heat. Some of these may not be identified as porcelain, as understood by the Western countries. The reason being that they are generally 'green-fired' or 'once-fired', meaning that the body is baked and at the same time the glaze on the outer surface is also produced. After a single unit is made and a proper finishing is given to it, it goes through the following steps:— 1)It is dried. 2)Then the outer surface is glazed. 3)It is again dried. 4)Finally it is fired again to give it a hard finish. In the hot kiln the body and the glaze blend with each other to give a uniform effect. Chinese enameled wares are produced similarly, but the enamels are added at the second stage. Then the pieces are again fired but at low temperatures.

**Types of China-ware:**— China-ware or Ceramics are generally grouped into three main categories:— earthenware, stoneware and ceramics.

In China they are grouped under 2 broad headings:—

- High-fired China-ware.
- Low-fired China-ware China-ware can also be divided into northern and southern China-ware. The geographical differences between the north and the south lead to the availability of different kinds of raw materials. Thus the main difference between the China-ware of the north and the south is that in composition. In the western countries porcelain is distinguished from other materials by virtue of its translucency, while in China any opaque piece of ware, which rings with a clear note when struck with something is identified as porcelain.

**Composition of China-ware:**— Despite the difference in the composition of different types of China-wares, a combination of the following two main components is used to make them:

- China clay (Gaoling) – it is mainly clay mineral kaolinite.
- Chinese porcelain stone – it is also known as Petunse. It is a feldspathic rock which contains sericite, quartz and other materials. These minerals contain platelets, which increases the water retention capacity of the clay. It thus becomes easier to shape the China-ware on the potter's wheel.

## NOTES

**Characteristics of China-ware or Porcelain:**— The term “Pottery” is an all-encompassing term that is generally used to mean all the products that the potter produces by using his art. Porcelain or China-ware can be either hard-paste or soft-paste. Soft-paste which was earlier made of a little amount of clay was difficult to shape on the potter’s wheel. Later it was modified to make it more plastic and hence easy to shape.

These pastes referred to as bodies or electric porcelain, contain more clay. Jollying and turning are methods used to shape them. It is known as “soft” as it cannot stay strong at higher temperatures in comparison to hard-paste porcelain. Soft-paste is fired at around 1100 degree centigrade for the frit based compositions and 1200 to 1250 degree centigrade for the feldspathic compositions. The low temperatures produce certain advantages like:— It allows the artists to use a wider palette of colors for decoration. It reduces fuel consumption. The soft-paste porcelain is more granular and is easier to decorate while enameling the outer surface. Hard-paste formulations are more resilient and do not experience pyroplastic deformation.

### **Use in Food Service Establishments**

Chinaware is used in food service establishments for giving food services to customers. Plates, soup mugs, souffle and many other pots as dinnerware of chinaware are widely used in restaurants. The design of chinaware has been influenced by internationally recognized food and beverage executives, chefs and homewards professionals with expertise in hotel ware and commercial china. Chinaware is considered to be finest in its quality and nature for food and beverage services. Because of its better reflective features most of the food service centres use it at large scale.

### **Tableware**

Tableware or Table Appointments includes the dishes, glassware, and eating utensils (knives, forks, spoons, chopsticks, etc.) used to set a table for eating a meal. The nature, variety, and number of objects varies from culture to culture, and may vary from meal to meal.

- Durable tableware
- Disposable tableware

It is no secret that customer eat with his eyes first. So using hotel/restaurant tableware that compliments menu dishes is a worthy. hotel/Restaurant tableware comes in all shapes, sizes and styles. Restaurant plates, bowls and other tableware should match one another, to give table settings a clean, coordinated look. Along with attractive commercial tableware, good quality restaurant flatware goes a long way in making a good. Food service equipment covers every part of a restaurant and commercial kitchen, from outfitting the kitchen stations to tracking sales and profits.

### ***Special Food Service Equipments***

#### **NOTES**

Food service equipment covers every part of a food service establishment and commercial kitchen, from outfitting the kitchen stations to tracking sales and profits. Food service supplies come in many shapes and sizes.

#### **Deep Fryers**

While commonly used in commercial kitchens, household models are available and have become common in countries with a tradition of preparing French fried potatoes at home.

Modern fryers feature a basket to raise food clear of the oil when cooking is finished. Fryers often come with features such as timers with an audible alarm, automatic devices to raise and lower the basket into the oil, measures to prevent food crumbs from becoming over cooked, ventilation systems to reduce frying odors, oil filters to extend the usable life of the oil, and mechanical or electronic temperature controls. Deep Fryers are used for cooking many fast foods, and make them crispy.

The modern commercial fryer boasts improved energy efficiency due in part to better heat transfer systems. Commercial fryers with infrared heating or convection heating are efficient, but often expensive. The most common fryer models are electric and gas.

Electric restaurant fryers are popular in counter top models because of their mobility. They lose a little less heat than gas fryers because their heating elements are immersed in the oil, and they have a faster temperature recovery time between frying cycles. Gas fryers heat up more quickly and to a higher cooking temperature than electric fryers. Gas fryers can be powered by either natural gas or propane, both of which are generally less expensive energy sources than electricity. This makes gas power especially popular in floor model fryers.

Commercial fryers are generally available in mild steel or stainless steel. Stainless steel is less likely to corrode or stain than mild steel. Mild steel also expands under heat which may damage the welds over time. Because of this, stainless steel fryers often come with a much better warranty than mild steel fryers.

Fryers are available with a variety of fry pot styles. Some commercial fryers have a "cold zone" at the bottom of the fry pot. This is where larger food particles sink and the lower temperature keeps them from burning and tainting the oil. A tube-style fry pot has a large cold zone because the tubes are slightly above the bottom of the vat, leaving generous space for cooler oil and crumbs. This is particularly useful for cooking heavily breaded foods (such as a blooming onion). A tube-style fry pot is more difficult to clean than an open fry pot, but the tubes allow easy access to the heat source. Tube fryers are often a little less expensive than their open fry pot counterparts. Open fry pots have an external heat source, which makes them easier to clean and affords better access to the oil, but they

generally offer a smaller cold zone, so food particles that sink could scorch and pollute the flavor of the oil. However, these fryers work very well for lightly breaded foods. Flat-bottomed restaurant fryers—another type of open frypot fryer—can also be difficult to clean and have no cold zone, but they are highly effective for frying dough (such as donuts or funnel cakes).

## **NOTES**

### *Temperature Controls*

Many of the new fryer models include electronic temperature controls. These computerized controls save energy by constantly sensing and adjusting the temperature of the oil. A high quality thermostat can stay within a 4 °F range of a desired temperature, assuring accurate cook times. Safety thermostats that automatically cut the power if the oil reaches dangerous temperatures help prevent oil fires.

### **Oil Filtration**

An oil filtration system, chemical treatment, or diatomaceous earth powder all help remove tiny food particles that are not always visible. Using these systems doubles the life of the oil. Oil filtration systems can sometimes be purchased as an enclosed part of the fryer to avoid involving employees in the somewhat dangerous process of filtering the oil with an exterior system. Many restaurants use a portable oil filtration system or a “shortening shuttle” to transport waste oil to a disposal area. However, even old oil is not completely useless. There are ways (involving other chemicals and machinery) to “recycle” old oil as biodiesel that can power diesel vehicles.

### **Accessories**

Restaurant fryers are available with a wide array of accessories and options. There are countertop models, single floor models, and “fryer batteries” with multiple floor fryers, a filtration system, and holding stations all built together as one large floor fryer system. Individual fryers may have one or more tanks. Commercial floor-model fryers can be fitted with casters for easier maintenance and cleanup. Fry baskets also come in various shapes and sizes, from taco salad bowls to onion loaf baskets, with or without heat resistant handles.

### **Automated deep fryers**

Industrial enterprises producing deep-fried snack foods such as potato chips or pre-fried French fried potatoes use automated frying systems that consist mainly of the actual frying pan, a tube type heat exchanger to heat the frying oil, a filter, a circulation pump, a banana tank for fresh oil and the automation system, most often a PLC. As the product leaving the fryer contains a percentage of oil (in potato chips approx. 35%) there is a constant flow of fresh oil into the system. Sensors for the temperature of the oil, the oil level, different pressures in the system and other parameters are used as input for the PLC.



## **Oven**

### **NOTES**

An oven is an enclosed compartment for heating, baking or drying. It is most commonly used in cooking and pottery. Ovens used in pottery are also known as kilns. An oven used for heating or for industrial processes is called a furnace or industrial oven.

Settlements across the Indus Valley Civilization were the first to have an oven within each mud-brick house by 3200 BC.

Culinary historians credit the Greeks for developing bread baking into an art. Front-loaded bread ovens were developed in ancient Greece. The Greeks created a wide variety of doughs, loaf shapes and styles of serving bread with other foods. Baking developed as a trade and profession as bread increasingly was prepared outside of the family home by specially trained workers to be sold to the public. This is one of the oldest forms of professional food processing.

The Greeks also pioneered sweet breads, fritters, puddings, cheesecakes, pastries, and even wedding cakes. Often prepared in symbolic shapes, these products were originally served during special occasions and ceremonies. By 300 AD the Greeks had developed over seventy different kinds of bread.

In cooking, the conventional oven is a kitchen appliance and is used for roasting and heating. Food normally cooked in this manner includes meat, casseroles and baked goods such as bread, cake and other desserts. In the past, cooking ovens were fueled by wood or coal. Modern ovens are fueled by gas or electricity. When an oven is contained in a complete stove, the fuel used for the oven may be the same as or different from the fuel used for the burners on top of the stove.

Ovens usually can use a variety of methods to cook. The most common may be to heat the oven from below. This is commonly used for baking and roasting. The oven may also be able to heat from the top to provide broiling. In order to provide faster, more-even cooking, convection ovens use a small fan to blow hot air around the cooking chamber. An oven may also provide an integrated rotisserie.

Steam ovens introduce water (in the form of steam) into the cooking chamber. This can aid the formation of a crisp crust on baked goods and prevent the drying-out of fish and casseroles. The degree of humidity is usually selectable among at least several steps. Some steam ovens use water carried to the oven by the user in a container; others are permanently connected to the building plumbing.

More modern ovens, such as General Electric's Trivection oven, may also provide combined thermal and microwave cooking. This can greatly speed the cooking of certain types of food while maintaining the traditional characteristics of oven cooking such as browning.

Ovens also vary in the way that they are controlled. The simplest ovens (for example, the AGA cooker) may not have any controls at all; the several ovens

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simply run continuously at various temperatures. More conventional ovens have a simple thermostat which turns the oven on and off and selects the temperature at which it will operate. Set to the highest setting, this may also enable the broiler element. A timer may allow the oven to be turned on and off automatically at pre-set times. More-sophisticated ovens may have complex, computer-based controls allowing a wide variety of operating modes and special features including the use of a temperature probe to automatically shut the oven off when the food is completely cooked to the desired degree. Orthodox Jews may purchase ovens whose controls include a sabbath mode automation feature.

Some ovens provide various aids to cleaning. Continuous cleaning ovens have the oven chamber coated with a catalytic surface that helps break down (oxidize) food splatters and spills over time. Self-cleaning ovens use pyrolytic decomposition (extreme heat) to oxidize dirt. Steam ovens may provide a wet-soak cycle to loosen dirt, allowing easier manual removal. In the absence of any special methods, chemical oven cleaners are sometimes used or just old-fashioned scrubbing.

**Combi-Oven:**— The combi-steamer which is operated through controlling panel fulfils all cooking progeams, such as baking, broiling, cooking and steaming, to make many kinds of dishes. A core probe monitors the center temperature of the food to make sure the color, smell and taste are best.

**Wine and liquor carts:**— Service cart, wine and liquor cart made of wood and stainless steel, with four wheels and handle.

**Luxury Combination Oven:**— All stainless steel body, strong and durable, Electronic direct spark ignition, flame failure safety device for each control Heavy duty gas burner with individual switch and thermostat Adjustable legs.

### **Selection of Equipments**

Proper food service equipment is just one of the many components of a successful food service operation. Good equipment will cut down your energy bill and check times, making the business more efficient, productive and profitable.

Selecting the right food service equipments can be a daunting task, but one can ensure that he/she will choose the right equipment if he or she start with menu, plan ahead and make smart investments.

### **Equipment Needs**

Standard food service equipments include refrigerators and preparation and cooking equipment.

Refrigerators will prevent bacterial growth and maximize the shelf life of perishable foods. Preparation equipment, such as food processors, will accelerate cook times and save a great deal of labor. Your costliest kitchen expense will be cooking equipment. This usually includes ranges (open burners), deep fryers, broilers, ovens and salamanders (top heat).

## NOTES

The best way to ensure that you get the proper equipment for food service operation is to consult the person who will be using it, the chef. They will be familiar with the menu and know what kind of equipment is necessary to meet its needs.

### **Steps towards selecting the necessary restaurant equipment**

#### ***Consult the menu***

Not all food service providers have identical menus, so why should they have identical equipment? Before making any food service equipment purchases, one should take the menu into consideration.

Cooking techniques and serving sizes of the food service operation, along with the type of food that the service provider serves, can help determine what equipment one should purchase for kitchen. This may also be determined by what type of fuel to cook with. For instance, a restaurant that serves a lot of Asian dishes may benefit from cooking with propane because it produces an intense heat. Other fuel options include wood, natural gas, electric, steam and heating oil. Also, as the restaurant becomes established in the community, it is likely to receive an increase in volume. Take this, along with considerations for future menu development into account as one assess his or her restaurant kitchen equipment needs. Should you purchase some mobile pieces? Will your ovens be able to handle future volume?

Without considering the particular needs of your menu, you may end up with the wrong amount of space, storage or refrigeration.

#### ***Plan ahead***

Food service equipment selection should precede the food service establishment design process. By planning ahead, you can designate where equipment should be placed, working it into the overall traffic pattern of your kitchen floor plan. This will make equipment easily accessible to employees and help avoid traffic flow problems.

When purchasing equipment for newly-built food service establishment, conduct a walk-through with your general contractor and electrician to ensure you are in compliance with code regulations. Work with them to develop an emergency shut-off procedure for the equipments. Request a full set of building and equipment plans for your operational files. Also, contact your local government agencies for any specialty licensing or permit requirements.

Consider working with a food service establishment design consultant who has the know-how to suitably incorporate the equipments into your kitchen layout. Sensible equipment placement will help your employees provide better, faster service, contributing to overall restaurant efficiency. Once you have determined what equipment you need, shop around for a good value. Making smart equipment investments will save you a bundle in the long run.

### **Equipments Maintenance and Safety**

Proper food service equipemnt maintenance will save you money on your energy bill and repairs and ultimately cut costs. Well-maintained equipments will also ensure a more sanitary and safe kitchen.

Creating an equipment maintenance logbook will help you keep up with the maintenance schedule recommended by the manufacturer. Filling out warranty cards will give you recourse if the food service equipment you purchased turns out to be defective. Warranty cards also help manufacturers reach customers if the product they purchased needs to be recalled.

Post phone numbers for food service equipment repairs on your equipment when possible. Maintenance procedures should also be posted in designated areas in case repairs must be executed in house. If your food service operation uses complex equipment, hire a reliable maintenance technician and make sure that preventative maintenance is performed.

Always conduct a test run before using any new food service equipment. Run the ice machine, empty it, sanitize it and refill it. Check the walk-in and refrigeration temperatures. Calibrate the temperatures for your fryers, griddle, oven and stove.

Careful selection, planning and maintenance of food service equipment will ensure a smooth food service operation.

### **NOTES**

## **2.4 FOOD SERVICE OPERATIONS**

There are some tics of foodservice that make it unique compared to production of other products. This uniqueness influences decisions that are made about production and service. Some of these characteristics include:—

- Demand for food occurs at peak times, around breakfast, lunch, and dinner meals. Between these peak demand times, there are valleys or slow times.
- Demand for food may vary depending on time of year and competitive events, and production must be modified accordingly.
- Food production and service are labor intensive.
- Both skilled and unskilled labor is needed.
- Food is perishable, requiring it to be handled properly before, during, and after preparation.
- Menus change on a daily basis, thus, production changes daily.

These characteristics create challenges in scheduling employees and production, difficulty in staffing, and high labor and food costs. Conventional foodservice systems exhibit these characteristics. Foodservice directors look for ways to reduce or eliminate the impact of these characteristics—and alternative foodservice systems offer solutions.

**NOTES**

For example, commissary foodservice systems centralize the production process and allow for economies of scale, reducing the costs of food production. Ready-prepared foodservice systems separate production and service in that food is prepared and stored either frozen or chilled for later rethermalization and service.

This removes the peaks and valleys of production that occur when production is planned around service. Thus, this is a more cost-effective foodservice system than the conventional system. Foodservice systems may be combined to meet the unique needs of a district school foodservice operation.

**Flow of Food**

It is important to understand the flow of food through a foodservice system in order to determine the system that will best meet your needs and to develop an effective HACCP program. Food flows through ten possible processes as shown in the figure below.

As we talk more about the four types of foodservice systems, you will find that all of these processes do not apply to all of the systems. Also, when food production is centralized, a transporting process needs to be added. With a centralized foodservice system, there will be different processes (and critical control points) for the central food production facility and the receiving kitchens (satellites). In the chapter on food safety, there will be a more in-depth discussion about the critical controls that need to be in place during each process in the food flow.

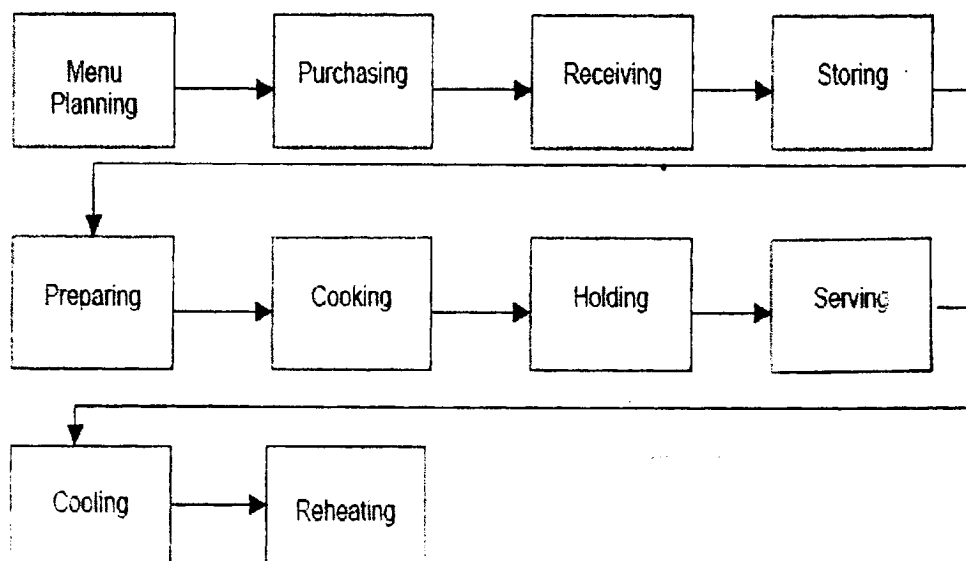


Fig. 1 :- Flow of food chart

### Form of Food Purchased

Another concept that is important to the understanding of foodservice systems is the form in which the food is purchased. Following is a diagram of the food processing continuum shown below.

This diagram depicts the continuum of food processing that might be done prior to purchasing. For example, if food were purchased at the "none" end of the continuum, the ingredients for a product would be purchased. If food were purchased at the complete end, the food product would be ready to heat or serve (perhaps requiring no preparation or only rethermalization).

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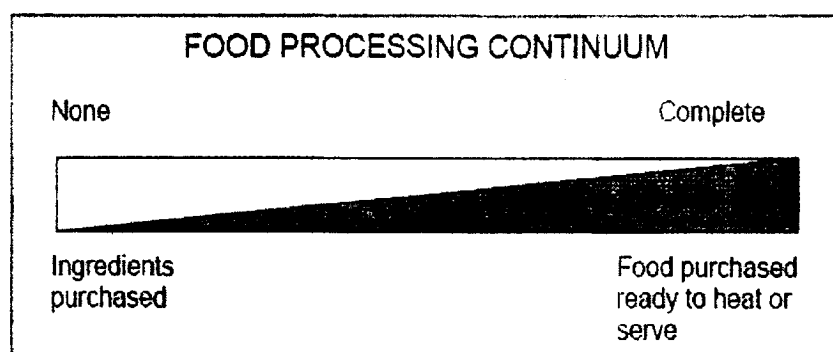


Fig. 2 :— Food Processing Continuum

Here is an example that you might find in school foodservice. Let's take Italian bread. We could make many different decisions about where on the food processing continuum to purchase Italian bread. We could purchase all of the ingredients (yeast, flour, sugar, shortening, and salt) and make our own bread from scratch. In this case, the food is purchased with no prior processing (none end of the food processing continuum).

We could purchase frozen bread dough, proof it, and bake it. In this case, we are purchasing items somewhere in the mid-range of the food processing continuum. Purchasing from the complete end of the continuum, we could purchase Italian bread already baked and all we do is serve. There are many examples in school foodservice of similar choices for how much processing will be done in the foodservice operation and how much will be done prior to purchasing the product.

Purchasing decisions differ depending on the type of foodservice system that is in place. For example, with centralized food production, food is more likely to be purchased from the left end of the continuum—with little or no processing. The processing or food preparation will be done in the central kitchen. This often represents a substantial food cost savings—one of the goals for centralized production.

NOTES

Food costs and labor costs usually are inversely related – as one goes up the other one goes down. If the quantities of food produced are very high, as in the case of a large central kitchen, productivity (usually measured as meals per labor hour) will increase, making labor costs more reasonable. In the assembly-serve foodservice system food is purchased at the complete end of the food processing continuum. That means food costs are high; but less labor is required, so labor costs decrease. We will talk more about how food is purchased as the various types of foodservice systems are discussed.

2.5 TYPES OF FOOD SERVICE SYSTEMS

Four types of foodservice systems are described in the literature: conventional, commissary, ready-prepared, and assembly-serve. There are numerous examples of each of these systems in operation, both in school foodservice and in other segments of the foodservice industry; and there are many variations of them, too! A description of these systems will be useful if you are considering making changes in your operation.

Conventional Foodservice System

The conventional foodservice system is most common, although that is changing due to the current operating environment. In conventional foodservice systems, ingredients are assembled and food is produced onsite, held either heated or chilled, and served to customers. For this foodservice system, food is purchased all along the food processing continuum.

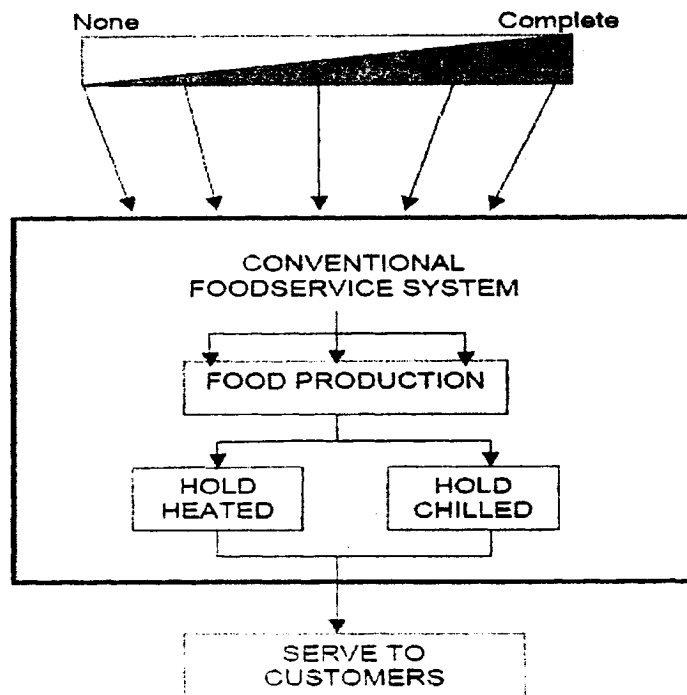


Fig. 3 :– Conventional foodservice systems

For example, some items may be purchased from the none end and require full preparation. Other items may be purchased with some processing, while others may be purchased fully prepared, only requiring portioning and service. Above is a diagram of a conventional foodservice system.

Conventional foodservice systems are used extensively in schools, restaurants, colleges and universities, and cafeterias. Because of the current labor shortage, many of these conventional foodservice systems are using more and more food products from the complete end of the food processing continuum.

### ***Advantages of Conventional Foodservice Systems***

There are several advantages to conventional foodservice systems:—

- High degree of perceived quality—this system makes people think of fresh and homemade food products, which people often equate with quality.
- Flexibility in menu items—any menu item can be included on the menu because food is prepared and served soon after production.
- Food is served soon after preparation—which means that most often freezing, chilling, or reheating typically does not impact the quality of the food product.
- Traditional standardized recipes can be used—there is little need to modify recipes for chilling and reheating or extremely large production quantities. This means that there will be a large number of standardized quantity recipes available for use.

### ***Disadvantages of Conventional Foodservice Systems***

There also are several disadvantages of conventional foodservice systems:

- Labor intensive—with conventional systems, preparation is timed in relation to when the food will be served and eaten, thus, this system is more affected by the peaks and valleys of demand for food than any of the other systems. More labor will need to be scheduled during peak times, making the cost of labor higher for this system than for any of the other foodservice systems.
- Consistency—may be a problem if there are several conventional kitchens within a school system. There may be great variability in food quality, portion sizes, and food costs due to unskilled labor. For example, are all cooks following the same standardized recipes, or are they being a little “creative”? Do you have cooks with better cooking techniques in some operations? Do all of the school foodservice managers have the same expectations of employees? These kinds of inconsistencies can be a managerial headache!
- Higher food costs—higher costs could result because there is less control of portion sizes, more deliveries (drops) are required by the vendors, and

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waste may be greater. There may be more total inventory since it is dispersed across many locations.

- Food safety—there is less control over food safety in conventional foodservice systems compared to other foodservice systems. There are more decisions that must be made at critical control points, and those decisions are made by a great number of staff members at many locations. It often is difficult to provide the supervision necessary to ensure consistency in how staff follows the standard operating procedures in multiple schools.

**Centralized (Commissary) Foodservice System**

The commissary food service system (also known as central kitchen, central food production, or food factory) centralizes food production, and food is transported to satellites (receiving kitchens) where it is served to customers. Food usually is purchased near the none end of the food processing continuum, and food preparation is done in the central kitchen, which results in lower food costs. Labor costs also are lower because of the centralization of food preparation. This food service system takes advantage of economies of scale, so it is most effective when mass food production is required. The food product flow for this type of system is:

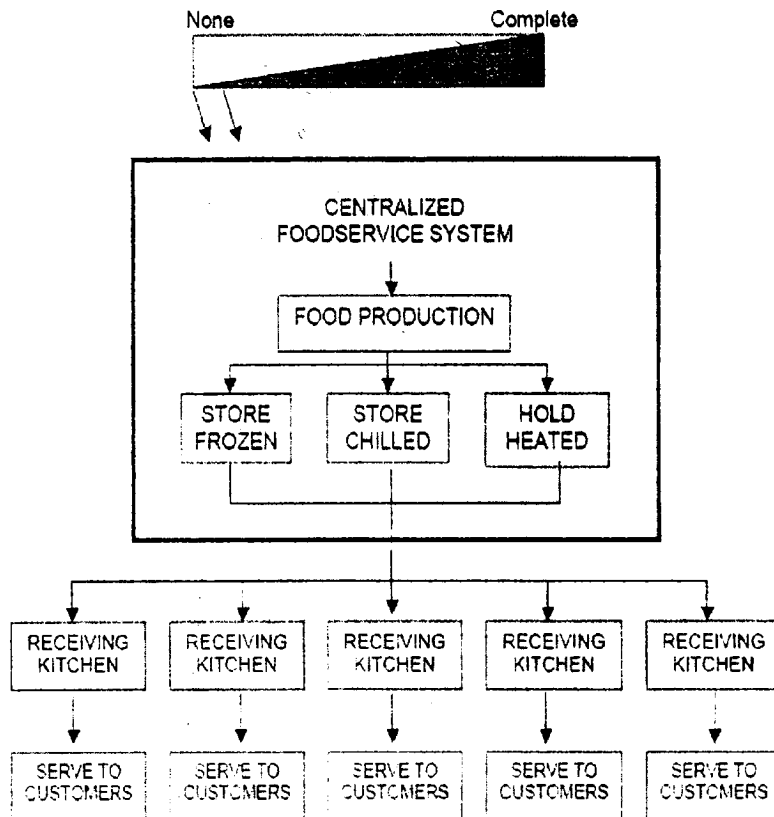


Fig. 4 : — Centralized foodservice system

One unique characteristic of the centralized foodservice system is that food is transported to external locations (satellites or receiving kitchens) for service. Two factors will need to be considered about the food that is transported: temperature and packaging.

Food can be transported either hot or cold, which impacts the delivery and the equipment needs in the receiving kitchens and in transportation. The food can be sent to the receiving kitchens bulk or pre-plated, which impacts the equipment and labor needed at the receiving kitchen. In addition, food production and delivery schedules must be coordinated.

Centralized (or commissary) foodservice systems are used in many types of foodservice operations. Perhaps the application of centralized foodservice systems that is most easily visualized is in the airline industry. There is a central production facility on or near the airport property where the food is prepared, pre-plated, sealed, and either chilled or frozen. The pre-plated meals are placed in closed carts, and the trays with the cold items are assembled and placed in closed carts. These carts are transported by truck to the airplane (satellite), where the food is placed in the galley. The plates requiring rethermalization are placed in convection ovens by the caterer. Once the airplane is airborne, the stewards assemble and distribute meals. Assembly usually only consists of placing the passengers' choice of hot entrée on the tray that contains all of the cold items.

Once the airplane lands at its destination, the caterer sends a truck to the airplane to get the used carts, trays, and dishes and returns them to the central food production facility for washing and sanitizing. At the same time, the airplane is supplied with the meals required for the next flight.

Many restaurant corporations centralize food production, too. Williams Sonoma, located in San Francisco, operates three Bay Cafes. They produce the gourmet sandwiches, salads, soups, and baked goods at the original restaurant and transport them to the other two restaurants.

There are many examples of centralized foodservice systems in schools, and the numbers have expanded dramatically in the past 20 years. Many of the large school districts located in urban areas use central production, including school districts in cities such as San Bernardino, California; Louisville, Kentucky; Boston, Massachusetts; Minneapolis, Minnesota; St. Paul, Minnesota; Columbus, Ohio; Cleveland, Ohio; Dayton, Ohio; Portland, Oregon; Philadelphia, Pennsylvania; and Pittsburgh, Pennsylvania. There are many more urban school districts using centralized foodservice systems. They also are being used in medium-sized school districts, such as Elko, Nevada and Corvallis, Oregon.

### ***Advantages of Centralized Foodservice Systems***

There are many advantages of centralized foodservice systems:

- Lower food and supply costs—there can be significant cost savings from

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purchasing food and supplies in the very large quantities needed for one very large operation rather than for several smaller operations. Also, most food will be purchased near the none end of the food processing continuum, where food costs are lowest.

- **Purchasing Power**—Large centralized facilities provide the opportunity to have a great deal of purchasing power. Supplier/vendor issues such as delivery schedules, order size, quality control, and return policies may be reduced or eliminated. Vendors often make deliveries to only one location, which also can save money in purchasing. Purchases such as milk and bread probably still will be delivered to the individual schools. Some operations may negotiate with a prime vendor to deliver some items directly to schools while still getting pricing based on overall purchases in the district.
- **Effective utilization of USDA commodities**—central foodservice systems are able to utilize raw government commodities in a timely and creative manner. Flexibility in the recipe use of commodities exists. This presents a cost savings, and similar products will not need to be purchased on the open market.
- **Ingredient control is improved**—with a centralized foodservice system, there is greater control over ingredients, which decreases food costs. Often the central kitchen is planned with an ingredient room where food items are pre-weighed and measured prior to preparation. This controls the quantities of ingredients used and ensures that standardized recipes are followed.
- **Inventory control**—processes often are in place to ensure that food is issued in the appropriate quantities and there is good inventory turnover so that spoilage does not occur and food quality is maintained. This results in good fiscal management in that receiving sites maintain a “just-in-time” inventory.
- **Lower labor costs**—labor costs (and total number of employees) can be reduced significantly using central food production. The high production quantities provide opportunities to increase productivity. This is an especially important selling point in today’s environment where labor is scarce and expensive.
- **Flexibility in scheduling of food preparation**—if food is transported cold, there is a great deal of flexibility in the scheduling of food production. This eliminates the peaks and valleys of demand for food and allows labor costs to be controlled. Production can be scheduled at any time during the day or any day of the week since it is separated from service.
- **Mechanization of preparation**—central kitchens utilize mechanized equipment to increase the efficiency of food preparation and minimize the lifting and heavy work on the part of employees.

- **Quality control**—central food production provides the opportunity to have more quality control in the food served, including the consistency of products throughout many service sites. There are three aspects of food quality:
  - **Microbiological quality**—central production often lends itself to more control over the microbiological quality of food because of the number of controls that are in place at all points in the flow of food through the system. HACCP plans and procedures must be in place in centralized foodservice systems, and the size often allows for HACCP to be the main part of someone's job.
  - **Aesthetic quality**—color, texture, and appearance all are aesthetic factors that are important in meals. These factors can be ensured through menu planning, purchasing, and preparation procedures in place in a centralized foodservice system. There will be consistency among all schools in the district.
  - **Nutritional quality**—again, centralized menu planning, purchasing, and preparation all can ensure the nutritional quality of the meals in a centralized foodservice system because of the consistency and control that is possible.
  - **Consistency**—menus are planned, and food is purchased and prepared centrally, which allows for consistency in which food items that are being served at the schools throughout a district.
  - **Better utilization of production facility**—one central production facility allows for better space and equipment utilization compared to the use of multiple small kitchens throughout a district. Also, productivity might be increased (and facility utilization improved) by getting contracts to provide food/meals to other school districts or other agencies such as hospitals, HeadStart, Meals on Wheels, senior nutrition programs, and day care centers. Catering for the school district would be another way to maximize facility utilization.
- **Flexibility in location**—while schools are located in neighborhoods that sometimes have very high land costs, central production facilities can be located in less expensive areas of town. The primary consideration is that the location be accessible to highways for deliveries to and from the facility. A central location within the school district may be advantageous, too.
- **Fully-equipped kitchens are not needed in each school, saving equipment costs**—thus, when schools are aging and equipment needs to be replaced, a central food production facility eliminates the need for some equipment at the receiving kitchen. This also is very advantageous for school districts in which growth is rapid. When building new schools, full production kitchens are not needed, which results in space savings and lower building costs.

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## ***Disadvantages of Centralized Foodservice Systems***

### **NOTES**

There are several possible disadvantages to centralized foodservice systems:

- High initial capital investment for building and equipment—the initial cost of building and equipping a central production facility may be very high. Issues such as payback period and growth capabilities need to be considered since the investment may be advantageous over the long term.
- More technically skilled employees are required—some of the equipment and processes in a central food production facility require more technical skills than are needed in a conventional foodservice system. For example, bakers may be needed to complete the more complex quantity baking that would be done.
- Some jobs may be very monotonous—some of the jobs in a central food production facility are assembly line. These may be monotonous jobs that would not be appropriate for some employees.
- Equipment malfunctions can be significant—if equipment fails, the impact is far greater for a central production facility than if a piece of equipment failed in a school kitchen. Efforts will be required to reduce the downtime of equipment. Preventive maintenance will be extremely important. Maintenance personnel dedicated to a facility is essential.
- Transportation costs—in conventional foodservice systems transportation of prepared foods to receiving kitchens is not a cost, while in centralized foodservice systems it can be a significant cost. Costs will include: trucks or vans, delivery equipment such as carts, gasoline, maintenance and repair, and insurance. In addition, you will need truck drivers to deliver products. Those drivers may need a Commercial Drivers License (depending on the truck size and local regulations) and in some areas may be members of a union such as Teamsters. Union membership may have a big impact on the salary requirements of the truck drivers.
- Perceived loss of quality—mass production often is perceived by customers to be less desirable than traditional food preparation.
- Recipe modifications may be required—due to the large quantities produced. Also, if products are chilled or frozen, recipe modifications may be needed to maintain product quality. Current standardized recipes will need to be restandardized when converting to central food production. This may require purchasing different products/ingredients. Testing of products for both quality and taste will need to be an ongoing process.
- Food safety problems can affect many customers—if there were a foodborne illness outbreak, many more customers would be affected. There will need to be very tight controls in place via a well-planned and implemented HACCP program to minimize the risks related to food safety. Laboratory testing of products should be conducted on a continual basis.

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- Individuals preparing the food are not serving the food to customers—cooks will not get any feedback from students about the quality of food, and the customer seems less real. Foodservice directors in central kitchens often make efforts to connect the production staff with students. For example, students are invited for kitchen tours to learn about how their food is prepared. These tours provide some interactions with students for the central food production staff. Directors also may want to involve production staff in reviewing students' evaluation of school foodservice.

**Ready-Prepared Foodservice System**

The ready-prepared foodservice system has been in use for many years. In ready-prepared foodservice systems, food is produced onsite, held chilled or frozen, reheated, and served to customers on site. Food production can be scheduled at any time, since food is prepared and stored frozen or chilled for later rethermalization and service.

This system also allows multiple-day production to be done at one time. For example, if chili is on the menu two times in the next 30 days, the total amount of chili can be made at one time, which reduces labor costs. For this foodservice system, food is purchased all along the food processing continuum. For example, some items may be purchased from the none end, and require full preparation. Soups, entrees, casseroles, and sauces would likely be fully prepared on site from ingredients purchased at the none end of the food processing continuum. Other items may be purchased with some processing, while others may be purchased fully prepared, only requiring portioning and service. Here is a diagram of a ready-prepared foodservice system:

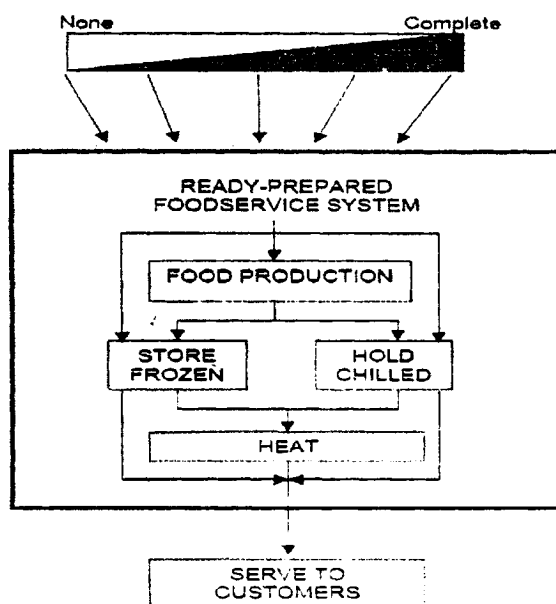


Fig. 5 :—Ready—Prepared foodservice system

Ready-prepared systems are used widely in hospitals and prisons. They are not often used in school foodservice, which more often operates conventional or centralized food service systems.

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### *Advantages of Ready-Prepared Foodservice Systems*

There are several advantages of ready-prepared foodservice systems. Some of the main advantages include:

- Flexibility in scheduling food preparation—if food is prepared and stored frozen or chilled for later use, there is a great deal of flexibility in the scheduling of food production. This eliminates the peaks and valleys of demand for food and allows labor costs to be controlled. Production can be scheduled at any time during the day since it is separated from service.
- Lower labor costs—large quantities of food can be prepared at one time and stored for later rethermalization and service; thus, food can be prepared for several meals at once. For example, spaghetti sauce could be prepared in large enough quantities to last a month rather than preparing it three times during that same time period.

### *Disadvantages of Ready-Prepared Foodservice Systems*

There are several possible disadvantages of ready-prepared foodservice systems:

- Menu variety may be limited—some food items might not be suitable for the chilling or freezing process.
- High initial capital investment for equipment—the initial cost of equipment for a ready-prepared system may be very high, but consideration of issues such as payback period, lower food cost, and lower labor costs usually will offset the initial costs in a short period of time.
- Perceived loss of quality—mass production often is perceived to be less desirable than traditional food preparation.
- Recipe modifications may be required—due to the large quantities produced. Also, if products are chilled or frozen, recipe modifications may be needed to maintain product quality. Some standardized recipes will need to be restandardized when converting to a ready-prepared foodservice system. This may require purchasing different products/ingredients.
- Food safety problems can affect many customers—if there were to be a foodborne illness outbreak, many more customers would be affected. There will need to be very tight controls in place, via a well-planned and implemented HACCP program, to minimize the risks related to food safety.

### *Assembly-Serve Foodservice System*

The assembly-serve foodservice system traditionally has been the least common, although that is changing due to the current operating environment. In today's environment labor is scarce and expensive. Also, there are many choices

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in foods that can be purchased that only require heating and serving. In assembly-serve foodservice systems, food is purchased at the middle to complete end of the food processing continuum. The purchased food is stored either frozen or chilled for later use. It is then portioned, reheated, and served to customers. A diagram of the assembly-serve foodservice system follows:

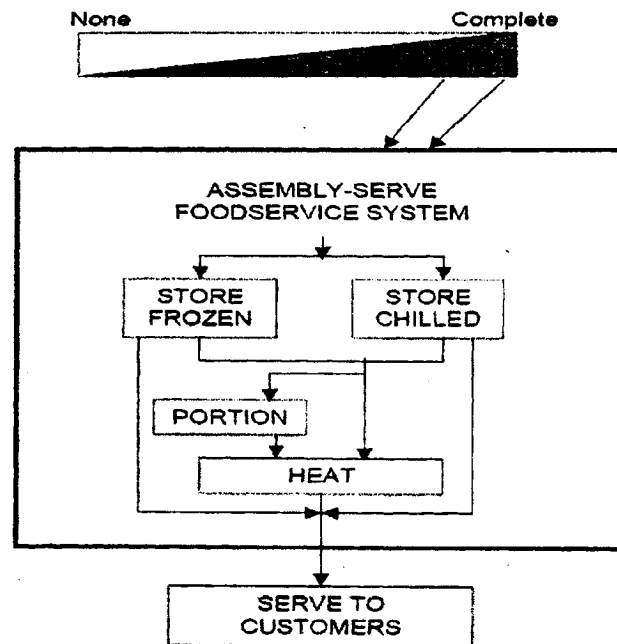


Fig. 6 :— Assembly—serve foodservice system

### **Advantages of Assembly-Serve Foodservice Systems**

There are several advantages of assembly-serve foodservice systems. The main advantages include:

- Lower labor costs—with assembly-serve systems, food is purchased that is almost fully prepared, requiring little labor for production.
- Limited equipment needs—because the food is almost fully prepared, for the most part all that will need to be done is rethermalization. Little equipment will be needed to rethermalize the food, portion it, and serve it to customers. This results in lower initial capital expenses when building a new facility.

### **Disadvantages of Assembly-Serve Foodservice Systems**

There are several possible disadvantages of assembly-serve foodservice systems:

- High food cost—since foods are purchased at the complete or nearly complete end of the food processing continuum, most of the labor in preparing the product is already done. This increases the food cost of the product compared to preparing the menu item from scratch (little or no end of the food processing continuum).



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- Menu variety may be limited—while the variety of prepared menu items has increased in recent years, there still is not the variety of items that can be prepared in a conventional, centralized/commissary, or ready-prepared foodservice system.
- Availability of menu items—the continued availability of menu items may be a problem for cycle menus. Some foodservice directors have included items on their menus only to find that the product has been discontinued, reformulated, or no longer carried by the distributor from whom they purchase.
- Perceived loss of quality—customers often view “homemade” products as having a higher quality than prepared items.

### **Combination Systems**

Often, foodservice operations in school districts have characteristics of more than one of the foodservice systems. For example, school districts that have central production facilities may prepare some items in the central kitchen and some food items in the receiving (satellite) kitchens. This often is done to ensure the highest quality for a food item that is popular with students.

Another example of combination systems within a district is when a central kitchen is used to prepare meals for the elementary schools and conventional kitchens are used to prepare meals for middle and high schools. This often is a more cost-effective method for serving large numbers of meals while still meeting the needs of the students.

In yet another example, some districts will centralize one function such as a bakery. All baking will be done in a central site and the baked products distributed to schools throughout the district. Other production would be done in the individual schools.

There are many ways that these systems can be combined to increase the efficiency of an operation and meet the unique needs of a school district.

### **Waiter Services**

Waiting staff, wait staff, or waitstaff are those who work at a food service establishment such as restaurant or a bar attending customers — supplying them with food and drink as requested. Traditionally, a male waiting tables is called a “waiter” and a female a “waitress.” Some people prefer to use gender-neutral language, using waiter indiscriminately for males and females, waitperson, server, or waitron, an Americanism coined in the 1980s.

Waiting staff may also be employed in (mainly, large) private households, but there such specialization is rarer, with the general domestic staff performing the function of waiting staff.

Waiting on tables is (along with nursing and teaching) part of the service sector, and among the most common occupations in the world. Many servers are required by their employers to wear a uniform.

The duties of waiting staff include preparing tables for a meal, taking

customers' orders, serving drinks and food, and cleaning up before, after and during servings in a restaurant. Most servers carry certain items such as a pad and pen for orders, a lighter for candles, or some form of corkscrew or sommelier knife.

### ***Self Services***

Self service is the practice of serving oneself, usually when purchasing items. Common examples include many restaurant and food service establishments where customers enjoy the benefits of the service on their own which is called buffet-style restaurants, where the customer serves their own plate of food from a large, central selection.; Automatic Teller Machines (ATMs) in the banking world have also revolutionised how people withdraw and deposit funds; most stores, where the customer uses a shopping cart in the store, placing the items they want to buy into the cart and then proceeding to the checkout counter/aisles.

Self service is used on the phone, web and email to facilitate customer service interactions using automation.

Open service food is susceptible to contamination and spoilage for a number of reasons. They include:

- patrons accessing food in a self-serve fashion, which means the business loses control of verifiable 'kitchen to table' food safety
- the vulnerability of the food to accidental or deliberate tampering or malpractice
- inadequately covered or protected food being contaminated by air, insects or physical matter
- indirect contamination of uncovered or unpackaged food through patrons coughing, sneezing or even talking, as physical barriers (sneeze guards) are not always effective
- the difficulty of maintaining open service food at required temperatures of 5°C or below / 60°C or above

### **Recommended Control Measures**

- Adopt an accredited Hazard Analysis Critical Control Point (HACCP) Food Safety Plan and have the system independently audited.
- Buy all foods from approved HACCP suppliers.
- Where possible, use non-potentially hazardous foods.
- Prepare meals using the correct food handling procedures, hygiene practices and contamination controls. Rapid chill and reheat rules should be followed.
- Make sure all workers have completed food safety training and have a professional approach to their work.

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- Make sure the premises are clean and maintained in accordance with the National Food Safety Standards.
- Stack plates, cups and glasses so they are protected from contamination and wrap or store cutlery vertically with the handle up.
- Make sure food display equipment, including the buffet unit, containers and implements, are appropriately designed to best protect the food.
- Keep hot food at 60°C or above and cold food at 5°C or below.
- It is advisable not to display a food dish on the buffet for more than one hour.
- Limit the quantity of each food item displayed.
- Never top-up displayed food dishes but replace them with fresh food.
- Never reuse previously displayed food except hermetically sealed and safe items.
- Provide separate serving utensils for each displayed food item.
- Advise patrons of required food safety procedures with clearly visible, easy-to-understand signage. Use appropriate symbols whenever possible.
- Recommend that when children are serving themselves food, they be accompanied by an adult.
- Recommend patrons use a clean plate each time they return to the buffet.
- Closely supervise the food display. Video surveillance is recommended.
- Advise patrons when they are doing the wrong thing.

### *Vending and Mobile Catering*

A vending machine provides snacks, beverages, lottery tickets, and other products to consumers without a cashier. Items sold via these machines vary by country and region.

In some countries, merchants may sell alcoholic beverages such as beer through vending machines, while other countries do not allow this practice (usually because of dram shop laws).

After paying, a product may become available by:

- the machine releasing it, so that it falls in an open compartment at the bottom, or into a cup, either released first, or put in by the customer
- the unlocking of a door, drawer, turning of a knob, etc.

Some products need to be prepared to become available. For example, tickets are printed or magnetized on the spot, and coffee is freshly concocted.

The main example of a vending machine giving access to all merchandise after paying for one item is beverage vending machine found in most of the

countries. After a sale the door automatically returns to a locked position. A customer could derive the service after paying in advance.

Mobile catering is the business of selling prepared food from some sort of vehicle. It is a feature of urban culture in many countries.

### **Types of Vehicles**

#### ***Street cart***

A food cart is a motorless trailer that can be hauled (by automobile, bicycle, or hand) to the point of sale, often a public sidewalk or park. Carts typically have an onboard heating and/or refrigeration system to keep the food ready for consumption. Foods and beverages often served from carts include

- Hot dogs and other sausages in the United States
- Tacos, burritos and other Mexican-style food that can be held in the hand (aka "roach coaches")
- Halal food such as lamb or chicken over rice, or in a gyro
- Ice cream and other frozen treats
- Coffee, bagels, donuts, egg sandwiches (e.g. bacon, egg, and cheese) and other breakfast items

#### ***Catering truck***

A catering truck enables a vendor to sell a larger volume than a cart and to reach a larger market. The service is similar; the truck carries a stock of prepared foods that customers can buy. Ice cream vans are a familiar example of a catering truck in Canada, the United States and United Kingdom.

#### ***Food truck***

A food truck or mobile kitchen is a modified van with a built-in grill, deep fryer, or other cooking equipment. It offers more flexibility in the menu since the vendor can prepare food to order as well as fresh foods in advance. A vendor can choose to park the van in one place, as with a cart, or to broaden the business's reach by driving the van to several customer locations. Examples of mobile kitchens include taco trucks on the west coast of the United States, especially Southern California, and fish and chips vans in the United Kingdom.

#### ***Concession trailer***

A concession trailer has preparation equipment like a mobile kitchen, but it cannot move on its own. As such it is suited for events lasting several days, such as funfairs.

#### ***Non-commercial uses***

In addition to being operated as private businesses, mobile catering vehicles are also used after natural disasters to feed people in areas with damaged infrastructure. The Salvation Army has several mobile kitchens that it uses for this purpose.

## **NOTES**



## **SUMMARY**

1. Food service operation means a place, location, site, or separate area where food intended to be served in individual portions is prepared or served for a charge or required donation.
2. "Catering food service operation" means a food service operation where food is prepared for serving at a function or event held at an off-premises site.
3. "Mobile food service operation" means a food service operation that is operated from a movable vehicle, portable structure, or watercraft and that routinely changes location.
4. "Vending machine location" means an area or room where one or more vending machines are installed and operated.
5. Kitchen equipment can be conveniently grouped into five categories; storage, preparation, cooking, accessory and service equipment.
6. An oven is an enclosed compartment for heating, baking or drying. It is most commonly used in cooking and pottery.
7. In conventional foodservice systems, ingredients are assembled and food is produced onsite, held either heated or chilled, and served to customers.
8. The commissary food service system (also known as central kitchen, central food production, or food factory) centralizes food production, and food is transported to satellites (receiving kitchens) where it is served to customers.
9. The ready-prepared foodservice system has been in use for many years. In ready-prepared foodservice systems, food is produced onsite, held chilled or frozen, reheated, and served to customers on site.
10. The assembly-serve foodservice system traditionally has been the least common, although that is changing due to the current operating environment. In today's environment labor is scarce and expensive.

## **GLOSSARY**

**Food service operation:** a place, location, site, or separate area where food intended to be served.

**Catering food service operation:** a food service operation where food is prepared for serving at a function or event held at an off-premises site.

**Food delivery sales operation:** a food service operation from which individual portions of food are ordered by a customer, prepared at another food service operation or a retail food establishment.

**Mobile food service operation:** a food service operation that is operated from a movable vehicle, portable structure, or watercraft and that routinely changes location.

**Seasonal food service operation:** a food service operation, other than a mobile food service operation, operated for not more than six months in a licensing period.

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**Vending machine location:** an area or room where one or more vending machines are installed and operated.

**Linen:** a textile made from the fibers of the flax plant, *Linum usitatissimum*.

**Oven:** an enclosed compartment for heating, baking or drying. It is most commonly used in cooking and pottery.

**Conventional foodservice systems:** in this foodservice system, ingredients are assembled and food is produced onsite, held either heated or chilled, and served to customers.

**Commissary food service system:** It is a centralized food production, and food is transported to satellites (receiving kitchens) where it is served to customers.

**Ready-prepared foodservice system:** in ready-prepared foodservice systems, food is produced onsite, held chilled or frozen, reheated, and served to customers on site.

**Assembly-serve foodservice system:** In this system, food is produced onsite, held chilled or frozen, reheated, and served to customers on site.

**REVIEW QUESTIONS**

1. What are the fundamental concepts essential in planning infrastructure of food service operation?
2. Write a short note on the three most significant kitchen equipments.
3. What are the basic features of conventional foodservice system?
4. What are the advantages of centralized foodservice system?
5. Distinguish between commissary foodservice and ready-prepared foodservice system.
6. Discuss the mechanics of waiter services.

**FURTHER READINGS**

Unklesbay, N.F., Maxcy, R.B., Knickrehm, M.E., Stevenson, K.E., Cremer, M.L., & Matthews, M.E. (1977). Foodservice systems: Product flow and microbial quality and safety of foods. (North Central Regional Research Publication No. 245). Columbia, MO: University of Missouri-Columbia College of Agriculture, Agriculture Experiment Station.

Unklesbay, N. (1977). Monitoring for quality control in alternate foodservice systems. *Journal of the American Dietetic Association*, 71, 423-428.

American School Food Service Association. (1999, September). Straight from the source: Findings from ASFSA's 1999 operations survey. *School Foodservice & Nutrition*, 53, 16.

Friedland, A. (1999, September). Tracking the trends. *School Foodservice & Nutrition*. 53, 74-76, 78.

Green, C.G. (1997). Cook-chill technology's effect on employee job satisfaction & food quality. *School Food Service Research Review*, 21, 57-62.

Kim, T., & Shanklin, C.W. (1999a). Impact of a change in the food production system on employee's attitudes and job satisfaction. *The Journal of Child Nutrition & Management*, 23, 67-73.

Berry, B., & Litchford, M.D. (1998). A guide for purchasing foodservice equipment. University, MS: The National Food Service Management Institute.

Center for Environment and Health Systems. (1996). Food sanitation rules. Portland, OR: Oregon Health Division.

Division of Human Resource Development. (2000). Plan review guide.

Rockville, MD: Food and Drug Administration.

Food and Drug Administration. (1999). Food Code 1999. Springfield, VA: National Technical Information Service.

## NOTES



## UNIT—III

### NOTES

## FOOD SAFETY

### OBJECTIVES

After going through this unit, students will be able to:

- describe the importance of health and Hygiene in the food service operations;
- discuss the food borne diseases and their control;
- state the important laws pertaining to the food service operations;
- understand the need of food safety in restaurants, hotel, hospitals etc.

### STRUCTURE

#### 3.1 Introduction

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### 3.1 INTRODUCTION

Every food establishment uses, processes, and sells food in different ways. However, the general issues and key principles of food safety remain the same, whatever the style of the operation. All food safety training programs should contain the “big 3” factors that could cause food to become unsafe. Food must be kept out of harms way from human errors, but if you don’t train food workers what they are, they won’t know why these factors are so important to your operation. The basics can make us or break us in one or maybe two food handling mistakes.

Those basic 3 principles that we must train all managers and food workers about are:

- Personal Hygiene for Food Professionals;
- Time & Temperature Control;
- Cross-contamination Prevention

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**1. Professional Personal Hygiene** - It's not all common sense to everyone. Food workers must observe the highest possible standards of personal hygiene to make certain that food does not become contaminated by pathogenic microorganisms, physical or chemical hazards. High standards of personal hygiene also play an important part in creating a good public image, as well as protecting food. Handwashing, fingernails, food worker illness policy (including exclusion of ill workers, cuts, burns, bandages, etc.), hair, uniforms, glove use, jewelry, personal cleanliness, or unsanitary habits such as eating, drinking, smoking, or spitting are all parts of defining personal hygiene standards. Poor handwashing is one of the leading causes of foodborne illness.

"Active Hand Hygiene" is a concept that really helps. There is a benefit to writing down standard operating procedures for the correct handwashing method/safe hands procedure to follow when each crew member is trained about this crucial expectation in your facility (i.e. 20 second handwash, when to wash, if using a nailbrush, type of soap, hand sanitizer, which glove or utensil for which ready-to-eat food task, etc.). Who monitors the process and how do you measure compliance on handwashing? These are questions best answered in writing for your individual operation.

**2. Time and Temperature Control of Foods** - We can reduce bacterial growth in potentially hazardous foods by limiting the time food is in the "danger zone" (140 F to 41 F) during any steps of the food flow from receiving through service. The FDA Food Code recommendation no more than a cumulative 4 hours in the danger zone. Use a calibrated thermometer to chart time and temperature based upon your menu for: cold holding (41 F), hot holding (140 F), cooking (based on the food), reheating (165 F), and cooling. Rapid cooling of hot foods (leftovers) or foods cooked several hours advance of service is a special challenge, which allows a six hour two stage cooling method (140 F to 70 F in 2 hours & 70 F to 41 F in 4 hours).

**3. Cross-contamination Prevention**- This is simply the transfer of harmful microorganisms or substances to food and covers a multitude of potential food handling errors in all stages of food flow. Cross-contamination can occur at any time. The 3 routes: (1) food to food, (2) hands to food, or (3) equipment to food. Ready-to-eat foods must receive the most care to prevent contamination.

**Food Safety Policy** — Food service is frequently dealing with employee turnover, so the job of training staff on professional hygiene, time/temperature, and cross-contamination control is never ending. These 3 issues contain lots of separate categories or steps to help keep the foodborne bugs at bay. An overall "food safety policy" statement is a good idea to start with for all staff (newbies or veterans)

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that focuses on the group's responsibility to help control these 3 issues. It's up to each person in charge to help the crew individually understand their responsibility for food safety that is appropriate in their specific food handling tasks. Active managerial control means supervisors must monitor the crew's adherence to your policy, make corrective actions, and set the example.

**3.2 HYGIENE**

Hygiene, refers to the set of practices associated with the preservation of health and healthy living. Hygiene is a concept related to medicine, as well as to personal and professional care practices related to most aspects of living, although it is most often associated with cleanliness and preventative measures. In medicine, hygiene practices are employed to reduce the incidence and spreading of disease. Other uses of the term appear in phrases including: body hygiene, domestic hygiene, dental hygiene, and occupational hygiene, used in connection with public health. The term "hygiene" is derived from Hygeia, the Greek goddess of health, cleanliness and sanitation. Hygiene is also the name of the science that deals with the promotion and preservation of health, also called hygienics. Hygiene practices vary widely, and what is considered acceptable in one culture might not be acceptable in another.

***Medical Hygiene***

Medical hygiene pertains to the hygiene practices related to the administration of medicine, and medical care, that prevents or minimizes disease and the spreading of disease.

Medical hygiene practices include:

- Isolation or quarantine of infectious persons or materials to prevent spread of infection.
- Sterilization of instruments used in surgical procedures.
- Use of protective clothing and barriers, such as masks, gowns, caps, eyewear and gloves.
- Proper bandaging and dressing of injuries.
- Safe disposal of medical waste.
- Disinfection of reusables (i.e. linen, pads, uniforms).

Most of these practices were developed in the 19th century and were well established by the mid-20th century. Some procedures (such as disposal of medical waste) were tightened up as a result of late-20th century disease outbreaks, notably AIDS and Ebola.

***Body Hygiene***

Body hygiene pertains to hygiene practices performed by an individual to care for one's bodily health and well being, through cleanliness. Motivations for

personal hygiene practice include reduction of personal illness, healing from personal illness, optimal health and sense of well being, social acceptance and prevention of spread of illness to others.

Personal hygiene practices include: seeing a doctor, seeing a dentist, regular washing (bathing or showering) of the body, regular hand washing, brushing and flossing of the teeth, basic manicure and pedicure, feminine hygiene and healthy eating. Personal grooming extends personal hygiene as it pertains to the maintenance of a good personal and public appearance which need not necessarily be hygienic.

Body hygiene is achieved by using personal body hygiene products including: soap, hair shampoo, hair conditioner, toothbrushes, tooth paste, cotton swabs, deodorant, chapstick, cream, lotion, facial tissue, hair clippers, nail clippers, mouthwash, nail files, skin cleansers, razors, shaving cream, skin cream and toilet paper. Other personal body hygiene and grooming products can be used to improve health and well being.

### **Excessive Body Hygiene**

The benefits of body hygiene are offset by the risks of excessive body hygiene which is hypothesized to cause allergic disease and bodily irritation.

Excessive body hygiene can cause allergies. The hygiene hypothesis states that a marked lack of early childhood exposure to infectious agents, and later a lack of exposure to helminths as adults, increases susceptibility to allergic diseases. The lack of exposure to these agents prevents the body from developing appropriate allergens and auto-immune responses.

#### *Excessive body hygiene of external ear canals*

Excessive body hygiene of the ear canals can result in infection or irritation. The ear canals require less body hygiene care than other parts of the body, because they are sensitive, and the body system adequately cares for these parts. Attempts to clean the ear canals through the removal of earwax can actually reduce ear canal cleanliness by pushing debris and other foreign material into the ear that would otherwise have been removed by the natural movement of ear wax from the interior to exterior of the ear.

#### *Excessive body hygiene of skin*

Excessive body hygiene of the skin can result in skin irritation. The skin has a natural layer of oil, which protects the skin from drought. When washing, unless using aqueous creams, etc., with compensatory mechanisms, this layer is removed, leaving the skin unprotected. By this mechanism, excessive washing may eventually trigger eczema.

Excessive application of soaps, creams, and ointments can also adversely affect certain of the body's natural processes. For examples, soaps and ointments

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can deplete the skin of natural protective oils, and some substances can be absorbed and, even in trace amounts, disturb natural hormonal balances.

### **Culinary Hygiene**

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Culinary hygiene pertains to the practices related to food management and cooking to prevent food contamination, prevent food poisoning and minimize the transmission of disease to other foods, humans or animals. Culinary hygiene practices specify safe ways to handle, store, prepare, serve and eat food.

Culinary practices include:

- Cleaning and sterilization of food-preparation areas and equipment (for example using designated cutting boards for preparing raw meats and vegetables). Cleaning may involve use of chlorine bleach, ethanol, ultraviolet light, etc. for sterilization.
- Careful avoidance of meats contaminated by trichina worms, salmonella, and other pathogens; or thorough cooking of questionable meats.
- Extreme care in preparing raw foods, such as sushi and sashimi.
- Institutional dish sanitizing by washing with soap and clean water.
- Washing of hands thoroughly before touching any food.
- Washing of hands after touching uncooked food when preparing meals.
- Not using the same utensils to prepare different foods.
- Not sharing cutlery when eating.
- Not licking fingers or hands while or after eating.
- Not reusing serving utensils that have been licked.
- Proper storage of food so as to prevent contamination by vermin.
- Refrigeration of foods (and avoidance of specific foods in environments where refrigeration is or was not feasible).
- Labeling food to indicate when it was produced (or, as food manufacturers prefer, to indicate its "best before" date).
- Proper disposal of uneaten food and packaging.

### **Personal Service Hygiene**

Personal service hygiene pertains to the practices related to the care and use of instruments used in the administration of personal care services to people:

Personal hygiene practices include:—

- Sterilization of instruments used by service providers including hairdressers, aestheticians, and other service providers.
- Sterilization by autoclave of instruments used in body piercing and tattoo marking.
- Cleaning hands.

### **History of Hygienic Practices**

Elaborate codes of hygiene can be found in several Hindu texts, such as the *Manusmriti* and the *Vishnu Purana*. Bathing is one of the five *Nitya karmas* (daily duties) in Sikhism, not performing which leads to sin, according to some scriptures. These codes were based on the notion of ritual purity and were not informed by an understanding of the causes of diseases and their means of transmission. However, some of the ritual-purity codes did improve hygiene, from an epidemiological point of view, more or less by accident.

Regular bathing was a hallmark of Roman civilization. Elaborate baths were constructed in urban areas to serve the public, who typically demanded the infrastructure to maintain personal cleanliness. The complexes usually consisted of large, swimming pool-like baths, smaller cold and hot pools, saunas, and spa-like facilities where individuals could be depilated, oiled, and massaged. Water was constantly changed by an aqueduct-fed flow. Bathing outside of urban centers involved smaller, less elaborate bathing facilities, or simply the use of clean bodies of water. Roman cities also had large sewers, such as Rome's *Cloaca Maxima*, into which public and private latrines drained. Romans didn't have demand-flush toilets but did have some toilets with a continuous flow of water under them. (Similar toilets are seen in Acre Prison in the film *Exodus*.)

Until the late 19th Century, only the elite in Western cities typically possessed indoor facilities for relieving bodily functions. The poorer majority used communal facilities built above cesspools in backyards and courtyards. This changed after Dr. John Snow discovered that cholera was transmitted by the fecal contamination of water. Though it took decades for his findings to gain wide acceptance, governments and sanitary reformers were eventually convinced of the health benefits of using sewers to keep human waste from contaminating water. This encouraged the widespread adoption of both the flush toilet and the moral imperative that bathrooms should be indoors and as private as possible.

### **3.3 FOOD BORNE DISEASES**

Foodborne illness (also foodborne disease and colloquially referred to as food poisoning) is any illness resulting from the consumption of contaminated food.

There are two types of food poisoning: food infection and food intoxication. Food infection refers to the presence of bacteria or other microbes which infect the body after consumption. Food intoxication refers to the ingestion of toxins contained within the food, including bacterially produced exotoxins, which can happen even when the microbe that produced the toxin is no longer present or able to cause infection. In spite of the common term food poisoning, most cases are caused by a variety of pathogenic bacteria, viruses, prions or parasites that contaminate food, rather than chemical or natural toxins.

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## **Causes**

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Foodborne illness usually arises from improper handling, preparation, or food storage. Good hygiene practices before, during, and after food preparation can reduce the chances of contracting an illness. There is a general consensus in the public health community that regular hand-washing is one of the most effective defenses against the spread of foodborne illness. The action of monitoring food to ensure that it will not cause foodborne illness is known as food safety. Foodborne disease can also be caused by a large variety of toxins that affect the environment. For foodborne illness caused by chemicals, see Food contaminants.

Foodborne illness can also be caused by pesticides or medicines in food and naturally toxic substances like poisonous mushrooms or reef fish.

## **Symptoms and Mortality**

Symptoms typically begin several hours to several days after consumption and depending on the agent involved, can include one or more of the following: nausea, abdominal pain, vomiting, diarrhea, gastroenteritis, fever, headache or fatigue.

In most cases the body is able to permanently recover after a short period of acute discomfort and illness. However, foodborne illness can result in permanent health problems or even death, especially for people at high risk, including babies, young children, pregnant women (and their fetuses), elderly people, sick people and others with weak immune systems.

Foodborne illness due to campylobacter, yersinia, salmonella or shigella infection is a major cause of reactive arthritis, which typically occurs 1–3 weeks after diarrheal illness. Similarly, people with liver disease are especially susceptible to infections from *Vibrio vulnificus*, which can be found in oysters or crabs.

Tetrodotoxin poisoning from reef fish and other animals manifests rapidly as numbness and shortness of breath, and is often fatal.

## **Incubation Period**

The delay between consumption of a contaminated food and appearance of the first symptoms of illness is called the incubation period. This ranges from hours to days (and rarely months or even years, such as in the case of Listeriosis or Creutzfeldt-Jacob disease), depending on the agent, and on how much was consumed. If symptoms occur within 1–6 hours after eating the food, it suggests that it is caused by a bacterial toxin or a chemical rather than live bacteria.

The long incubation period of many foodborne illnesses tends to cause sufferers to attribute their symptoms to "stomach flu".

During the incubation period, microbes pass through the stomach into the intestine, attach to the cells lining the intestinal walls, and begin to multiply there.

Some types of microbes stay in the intestine, some produce a toxin that is absorbed into the bloodstream, and some can directly invade the deeper body tissues. The symptoms produced depend on the type of microbe.

### ***Infectious Dose***

The infectious dose is the amount of agent that must be consumed to give rise to symptoms of foodborne illness, and varies according to the agent and the consumer's age and overall health. In the case of Salmonella a relatively large inoculum of 1 million to 1 billion organisms is necessary to produce symptoms in healthy human volunteers, as Salmonellae are very sensitive to acid. An unusually high stomach pH level (low acidity) greatly reduces the number of bacteria required to cause symptoms by a factor of between 10 and 100.

### ***Pathogenic Agents***

#### **Bacteria**

Bacteria are a common cause of foodborne illness. In the United Kingdom during 2000 the individual bacteria involved were as follows: *Campylobacter jejuni* 77.3%, *Salmonella* 20.9%, *Escherichia coli* O157:H7 1.4%, and all others less than 0.1%. In the past, bacterial infections were thought to be more prevalent because few places had the capability to test for norovirus and no active surveillance was being done for this particular agent. Symptoms for bacterial infections are delayed because the bacteria need time to multiply. They are usually not seen until 12–72 hours or more after eating contaminated food.

Most common bacterial foodborne pathogens are:

- *Campylobacter jejuni* which can lead to secondary Guillain-Barré syndrome and periodontitis
- *Clostridium perfringens*, the "cafeteria germ"
- *Salmonella* spp. - its *S. typhimurium* infection is caused by consumption of eggs that are not adequately cooked or by other interactive human-animal pathogens
- *Escherichia coli* O157:H7 enterohemorrhagic (EHEC) which causes hemolytic-uremic syndrome

Other common bacterial foodborne pathogens are:

- *Bacillus cereus*
- *Escherichia coli*, other virulence properties, such as enteroinvasive (EIEC), enteropathogenic (EPEC), enterotoxigenic (ETEC), enteroaggregative (EAEC or EAgEC)

#### **Salmonella**

- *Listeria monocytogenes*
- *Shigella* spp.

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- *Staphylococcus aureus*
- *Streptococcus*
- *Vibrio cholerae*, including O1 and non-O1
- *Vibrio parahaemolyticus*
- *Vibrio vulnificus*
- *Yersinia enterocolitica* and *Yersinia pseudotuberculosis*

### Less common bacterial agents:

- *Brucella* spp.
- *Corynebacterium ulcerans*
- *Coxiella burnetii* or Q fever
- *Plesiomonas shigelloides*

### Exotoxins

In addition to disease caused by direct bacterial infection, some foodborne illnesses are caused by exotoxins which are excreted by the cell as the bacterium grows. Exotoxins can produce illness even when the microbes that produced them have been killed. Symptoms typically appear after 1–6 hours depending on the amount of toxin ingested.

- *Clostridium botulinum*
- *Clostridium perfringens*
- *Staphylococcus aureus*
- *Bacillus cereus*

For example *Staphylococcus aureus* produces a toxin that causes intense vomiting. The rare but potentially deadly disease botulism occurs when the anaerobic bacterium *Clostridium botulinum* grows in improperly canned low-acid foods and produces botulin, a powerful paralytic toxin.

*Pseudoalteromonas tetraodonis*, certain species of *Pseudomonas* and *Vibrio*, and some other bacteria, produce the lethal tetrodotoxin, which is present in the tissues of some living animal species rather than being a product of decomposition.

### Mycotoxins and alimentary mycotoxicoses

The term alimentary mycotoxicoses refers to the effect of poisoning by Mycotoxins through food consumption. Mycotoxins have prominently affected on human and animal health such as an outbreak which occurred in the UK in 1960 that caused the death of 100,000 turkeys which had consumed aflatoxin-contaminated peanut meal and the death of 5000 human lives by Alimentary toxic aleukia (ALA) in the USSR in World War II. The common foodborne Mycotoxins include

- Aflatoxins - originated from *Aspergillus parasiticus* and *Aspergillus flavus*. They are frequently found in tree nuts, peanuts, maize, sorghum and

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other oilseeds, including corn and cottonseeds. The pronounced forms of Aflatoxins are those of B1, B2, G1, and G2, amongst which Aflatoxin B1 predominantly targets the liver, which will result in necrosis, cirrhosis, and carcinoma. In the US, the acceptable level of total aflatoxins in foods is less than 20 µg/kg, except for Aflatoxin M1 in milk, which should be less than 0.5 µg/kg. The official document can be found at FDA's website.

- **Altertoxins** - are those of Alternariol (AOH), Alternariol methyl ether (AME), Altenuene (ALT), Altertoxin-1 (ATX-1), Tenuazonic acid (TeA) and Radicinin (RAD), originated from *Alternaria* spp. Some of the toxins can be present in sorghum, ragi, wheat and tomatoes. Some research has shown that the toxins can be easily cross-contaminated between grain commodities, suggesting that manufacturing and storage of grain commodities is a critical practice.
- **Citrinin** -
- **Citreoviridin** -
- **Cyclopiazonic acid** -
- **Cytochalasins**
- **Ergot alkaloids / Ergopeptine alkaloids** - Ergotamine
- **Fumonisin** - Crop corn can be easily contaminated by the fungi *Fusarium moniliforme*, and its Fumonisin B1 will cause Leukoencephalomalacia (LEM) in horses, Pulmonary edema syndrome (PES) in pigs, liver cancer in rats and Esophageal cancer in humans. For human and animal health, both the FDA and the EC have regulated the content levels of toxins in food and animal feed.
- **Fusaric acid** -
- **Fusarochromanone** -
- **Kojic acid** -
- **Lolitrems alkaloids** -
- **Moniliformin** -
- **3-Nitropropionic acid** -
- **Nivalenol** -
- **Ochratoxins** - In Australia, The Limit of Reporting (LOR) level for Ochratoxin A (OTA) analyses in 20th Australian Total Diet Survey was 1 µg/kg, whereas the EC restricts the content of OTA to 5 µg/kg in cereal commodities, 3 µg/kg in processed products and 10 µg/kg in dried vine fruits.

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- Oosporeine -
- Patulin - Currently, this toxin has been advisably regulated on fruit products. The EC and the FDA have limited it to under 50 µg/kg for fruit juice and fruit nectar, while limits of 25 µg/kg for solid-contained fruit products and 10 µg/kg for baby foods were specified by the EC.
- Phomopsins -
- Sporidesmin A -
- Sterigmatocystin -
- Tremorgenic mycotoxins - Five of them have been reported to be associated with molds found in fermented meats. These are Fumitremorgen B, Paxilline, Penitrem A, Verrucosidin, and Verruculogen.
- Trichothecenes - sourced from *Cephalosporium*, *Fusarium*, *Myrothecium*, *Stachybotrys* and *Trichoderma*. The toxins are usually found in molded maize, wheat, corn, peanuts and rice, or animal feed of hay and straw. Four trichothecenes, T-2 toxin, HT-2 toxin, diacetoxyscirpenol (DAS) and deoxynivalenol (DON) have been most commonly encountered by humans and animals. The consequences of oral intake of, or dermal exposure to, the toxins will result in Alimentary toxic aleukia, neutropenia, aplastic anemia, thrombocytopenia and/or skin irritation. In 1993, the FDA issued a document for the content limits of DON in food and animal feed at an advisory level. In 2003, US published a patent that is very promising for farmers to produce a trichothecene-resistant crop.
- Zearalenone
- Zearalenols

### *Emerging Foodborne Pathogens*

Many foodborne illnesses remain poorly understood. Approximately sixty percent of outbreaks are caused by unknown sources.

- *Aeromonas hydrophila*, *Aeromonas caviae*, *Aeromonas sobria*

### *Preventing Bacterial Food Poisoning*

Prevention is mainly the role of the state, through the definition of strict rules of hygiene and a public services of veterinary surveying of animal products in the food chain, from farming to the transformation industry and delivery (shops and restaurants). This regulation includes:

- traceability: in a final product, it must be possible to know the origin of the ingredients (originating farm, identification of the harvesting or of the animal) and where and when it was processed; the origin of the illness can thus be tracked and solved (and possibly penalized), and the final products can be removed from the sale if a problem is detected;

- enforcement of hygiene procedures like HACCP and the “cold chain”;
- power of control and of law enforcement of veterinarians.

In August 2006, the United States Food and Drug Administration approved Phage therapy which involves spraying meat with viruses that infect bacteria, and thus preventing infection. This has raised concerns, because without mandatory labelling consumers wouldn't be aware that meat and poultry products have been treated with the spray.

At home, prevention mainly consists of good food safety practices. Many forms of bacterial poisoning can be prevented even if food is contaminated by cooking it sufficiently, and either eating it quickly or refrigerating it effectively. Many toxins, however, are not destroyed by heat treatment.

### **Viruses**

Viral infections make up perhaps one third of cases of food poisoning in developed countries. In the US, more than 50% of cases are viral and noroviruses are the most common foodborne illness, causing 57% of outbreaks in 2004. Foodborne viral infections are usually of intermediate (1–3 days) incubation period, causing illnesses which are self-limited in otherwise healthy individuals, and are similar to the bacterial forms described above.

- Enterovirus
- Hepatitis A is distinguished from other viral causes by its prolonged (2–6 week) incubation period and its ability to spread beyond the stomach and intestines, into the liver. It often induces jaundice, or yellowing of the skin, and rarely leads to chronic liver dysfunction. The virus has been found to cause the infection due to the consumption of fresh-cut produce which has fecal contamination.
- Hepatitis E
- Norovirus
- Rotavirus

### **Parasites**

Most foodborne parasites are zoonoses.

Platyhelminthes:

- Diphyllbothrium sp.

The scolex of *Tenia solium*

- *Nanophyetus* sp.
- *Taenia saginata*
- *Taenia solium*
- *Fasciola hepatica*

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**Nematode:**

- *Anisakis* sp.
- *Ascaris lumbricoides*
- *Eustrongylides* sp.
- *Trichinella spiralis*
- *Trichuris trichiura*

**Protozoa:**

- *Acanthamoeba* and other free-living amoebae
- *Cryptosporidium parvum*
- *Cyclospora cayetanensis*
- *Entamoeba histolytica*
- *Giardia lamblia*
- *Sarcocystis hominis*
- *Sarcocystis suihominis*
- *Toxoplasma gondii*

***Natural Toxins***

Several foods can naturally contain toxins, many of which are not produced by bacteria. Plants in particular may be toxic; animals which are naturally poisonous to eat are rare. In evolutionary terms, animals can escape being eaten by fleeing; plants can use only passive defenses such as poisons and distasteful substances, for example capsaicin in chili peppers and pungent sulfur compounds in garlic and onions. Most animal poisons are not synthesised by the animal, but acquired by eating poisonous plants to which the animal is immune, or by bacterial action.

- Alkaloids
- Ciguatera poisoning
- Grayanotoxin (honey intoxication)
- Mushroom toxins
- Phytohaemagglutinin (red kidney bean poisoning; destroyed by boiling)
- Pyrrolizidine alkaloids
- Shellfish toxin, including paralytic shellfish poisoning, diarrhetic shellfish poisoning, neurotoxic shellfish poisoning, amnesic shellfish poisoning and ciguatera fish poisoning
- Scombrotxin
- Tetrodotoxin (fugu fish poisoning)

Some plants contain substances which are toxic in large doses, but have therapeutic properties in appropriate dosages.

- Foxglove contains cardiac glycosides.
- Poisonous hemlock (conium) has medicinal uses.

#### Other pathogenic agents

- Prions, resulting in Creutzfeldt-Jakob disease

#### **"Ptomaine poisoning"**

An early theory on the causes of food poisoning involved ptomaines (from Greek *ptôma*, "fall, fallen body, corpse"), alkaloids found in decaying animal and vegetable matter. While some alkaloids do cause poisoning, the discovery of bacteria left the ptomaine theory obsolete and the word ptomaine is no longer used scientifically.

#### **Global Impact**

In modern times, rapid globalization of food production and trade has increased the potential likelihood of food contamination. Many outbreaks of foodborne diseases that were once contained within a small community may now take place on global dimensions. Food safety authorities all over the world have acknowledged that ensuring food safety must not only be tackled at the national level but also through closer linkages among food safety authorities at the international level. This is important for exchanging routine information on food safety issues and to have rapid access to information in case of food safety emergencies."

It is difficult to estimate the global incidence of foodborne disease, but it has been reported that in the year 2000 about 2.1 million people died from diarrhoeal diseases. Many of these cases have been attributed to contamination of food and drinking water. Additionally, diarrhoea is a major cause of malnutrition in infants and young children.

Even in industrialized countries, up to 30% of the population of people have been reported to suffer from foodborne diseases every year. In the U.S., around 76 million cases of foodborne diseases, which resulted in 325,000 hospitalizations and 5,000 deaths, are estimated to occur each year. Developing countries in particular, are worst affected by foodborne illnesses due to the presence of a wide range of diseases, including those caused by parasites. Foodborne illnesses can and did inflict serious and extensive harm on society. In 1994, an outbreak of salmonellosis due to contaminated ice cream occurred in the USA, affecting an estimated 224,000 persons. In 1988, an outbreak of hepatitis A, resulting from the consumption of contaminated clams, affected some 300,000 individuals in China.

Food contamination creates an enormous social and economic strain on societies. In the U.S., diseases caused by the major pathogens alone are estimated to cost up to US \$35 billion annually (1997) in medical costs and lost productivity.

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The re-emergence of cholera in Peru in 1991 resulted in the loss of US \$500 million in fish and fishery product exports that year.

### Statistics

Every year there are about 76 million foodborne illnesses in the United States (26,000 cases for 100,000 inhabitants), 2 million in the United Kingdom (3,400 cases for 100,000 inhabitants) and 750,000 in France (1,210 cases for 100,000 inhabitants).

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## A SUMMARY OF FOOD BORNE ILLNESS AND THEIR PREVENTION

Of all the microorganisms, bacteria are the greatest threat to food safety. Bacteria are single-celled, living organisms that can grow quickly at favorable temperatures. However, some bacteria are useful e.g. these that make foods like cheese, buttermilk, sauerkraut, pickles, and yogurt. Other bacteria are infectious disease-causing agents called pathogens, that use the nutrients found in potentially hazardous foods to multiply.

Some bacteria are not infectious on their own, but when they multiply in potentially hazardous food, they eject toxins that poison humans when the food is eaten.

Food handling practices are risky when they allow harmful bacteria to contaminate and grow in food. If you touch a potentially hazardous food during preparation, you may transfer several thousand bacteria to its surface.

Under the right conditions, bacteria can double every 10 to 30 minutes. A single bacterium will double with each division—two become four, four become eight, and so on. A single cell can become billions in 10 to 12 hours.

### *Salmonella*

**Foods Associated with Salmonella:** Raw poultry products, eggs, pork, processed meats. Less commonly, Salmonella has been found to be associated with raw fruits and vegetables.

**Cause of illness:** Infection with Salmonella species

**Incubation period:** 12-24 hours

**Characteristics of Illness:** Fever, cramps, diarrhea and sometimes vomiting.

**Possible contaminant:** Meat, poultry, egg or milk products

**Onset:** Illness may begin between 7 hrs to 3 days after eating contaminated food.

**Duration:** Illness may last 2-3 days. ;

**Prevention of Illness:**

- Avoid cross-contamination of ready-to-eat foods with raw meats or their juices.

- Thoroughly cook meat and poultry.
- Cook eggs thoroughly and never eat runny yolks or raw eggs.
- Always refrigerate processed meat products.
- Wash fruits and vegetables thoroughly.

### ***Campylobacter***

**Foods Associated with Campylobacter:** Raw chicken and raw milk

**Cause of illness:** Infection, even with low numbers

**Incubation period:** One to seven days

**Characteristics of Illness:** Diarrhea, often associated with fever, abdominal pain, nausea, headache and muscle pain. Illness can appear very similar to Salmonellosis.

**Possible contaminant:** Raw milk, eggs, poultry, raw beef, cake icing, water

**Onset:** Illness may begin between 2-5 days after eating contaminated food.

**Duration:** Illness may last 7-10 days.

**Prevention of Illness:**

- Avoid cross-contamination of ready-to-eat foods with raw meats or their juices.
- Cook meat and poultry thoroughly.
- Never drink raw milk.
- Pasteurize milk; cook foods properly; prevent cross-contamination

### ***Staphylococcus Aureus***

**Foods Associated with Staphylococcus aureus:** This bacteria has been associated with a wide range of foods, including meat and meat products, poultry and egg products, salads such as egg, tuna, potato and macaroni, cream-filled bakery products and pies, sandwich fillings and milk and dairy products. In general, Staph poisoning often occurs when a food has been handled a great deal (such as the chopping and handling involved in making a salad or sandwich) and is then left at temperatures above refrigeration which allow the bacteria to multiply and produce toxin.

**Cause of illness:** Toxin produced by certain strains of Staphylococcus aureus

**Incubation period:** One-six hours

**Characteristics of Illness:** Vomiting, diarrhea and abdominal cramps.

**Onset:** Illness may begin within 3-8 hrs. after eating contaminated food.

**Duration:** Illness usually lasts about 2 days.

**Prevention of Illness:**

- Always wash hands well when preparing foods.
- Keep foods refrigerated.

**NOTES**



## **Listeria Monocytogenes**

### **NOTES**

**Foods Associated with Listeria monocytogenes:** Raw milk, raw meats and raw vegetables. Ice cream, soft-ripened cheeses, smoked fish, lunch meats, hot dogs and refrigerated salad-type products. This organism is unique in that it is able to grow even at refrigerated temperatures and so, while refrigeration of foods will slow the growth of Listeria, it will not stop it completely.

**Cause of illness:** Infection with Listeria monocytogenes

**Characteristics of Illness:** In healthy individuals this organism may result in diarrhea, vomiting and nausea. However, in immunocompromised individuals (the very young, the elderly, pregnant women, those with AIDS or undergoing cancer treatment) Listeriosis may first appear as mild flu-like symptoms, but may then be followed by septicemia, meningitis, encephalitis and spontaneous abortion or stillbirth in pregnant women.

**Possible contaminant:** Vegetables, milk, cheese, meat, seafood

**Onset:** Illness may occur anywhere from 12 hrs to a few weeks after contaminated food is consumed.

**Duration:** In otherwise healthy individuals, mild symptoms may disappear in a day or two, but medical attention is required for immunosuppressed individuals who develop the above mentioned complications.

**Prevention of Illness:**

- Wash fresh fruits and vegetables thoroughly under running water.
- Keep foods refrigerated to slow the growth of Listeria, if it is present.
- Immunocompromised individuals should try to avoid eating implicated foods, such as soft-ripened cheeses or lunchmeat products.
- Pasteurize milk, cook foods properly, avoid cross- contamination; use sanitary practices

### **E. Coli 0157:H7**

**Foods Associated with E. coli O157:H7:** Undercooked raw meat, apple cider, raw milk and raw produce.

**Cause of illness:** Strain of enteropathic E. coli

**Incubation period:** Two to four days

**Characteristics of Illness:** Severe cramping and diarrhea which is initially watery but becomes grossly bloody.

**Possible contaminant:** Ground beef, raw milk, alfalfa sprouts, unpasteurized fruit juices, dry-cured salami, lettuce, meat, and cheese curds.

**Onset:** Illness may occur anywhere between 1 to 10 days after eating contaminated food, but usually occurs between 3 to 4 days.

**Prevention of Illness:**

- Cook ground meat thoroughly such that the to an internal reaches minimum temp of 75°C.

- Wash fresh fruits and vegetables thoroughly with running water.
- Do not drink unpasteurized milk.
- Do not drink unpasteurized apple cider unless it is well refrigerated.

### ***Clostridium Botulinum***

**Foods Associated with Clostridium botulinum:** Improperly processed home canned foods. and Low-acid canned foods, meats, sausage, fish

**Cause of illness:** Toxin produced by Clostridium botulinum

**Incubation period:** 12 to 36 hours

**Characteristics of Illness:** Symptoms include double vision, vertigo, inability to swallow, Nausea, vomiting, diarrhea, fatigue, headache, dry mouth, speech difficulty and progressive respiratory paralysis or respiratory failure . Nausea may also be present initially. muscle paralysis

**Onset:** Symptoms may begin within 18 hrs to 2 days of ingesting the toxin.

**Duration:** Greater than 65% of cases are fatal. In non-fatal botulism poisoning, recovery may take weeks to years, depending upon the severity of the poisoning.

**Prevention of Illness:**

- Do not eat food from swollen, leaking or severely damaged cans.
- Keep foods which are supposed to be refrigerated below 5°C
- Do not feed honey to infants under 1 year old.

### ***Clostridium Perfringens***

**Foods Associated with Clostridium perfringens:** Meat and/or gravy dishes are most often associated with this type of food borne illness. Generally C. perfringens poisoning occurs when such meat dishes are not cooked to high enough temperatures and then are allowed to sit out at room temperature for serving for an extended period of time.

**Cause of illness:** Contamination of drinking water or milk

**Incubation period:** 8 to 24 hours

**Characteristics of Illness:** Abdominal cramping and diarrhea, headache, chills

**Possible contaminant:** Meat, poultry, and other foods held for serving at warm, but not hot, temperatures

**Onset:** Illness may begin between 8 to 22 hrs after ingesting contaminated food.

**Duration:** Illness may last 1-2 days.

**Prevention of Illness:**

- Keep hot foods hot (>60°C) or refrigerate them rapidly in shallow containers (<5°C) if they will not be served immediately.
- Cool foods rapidly after cooking;

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### ***Bacillus Cereus***

**Foods Associated with Bacillus cereus:** Rice and grain products, dairy products such as milk, cream, custards and dried milk.

#### **NOTES**

**Characteristics of Illness:** Bacillus cereus may cause two different types of illness. The first is known as the Diarrheal illness, which results in diarrhea and abdominal cramps occurring within 6 to 15 hrs of eating contaminated food. This illness may persist up to about 24 hours and resembles Clostridium perfringens food poisoning. The second type of illness caused by Bacillus cereus is known as the Emetic illness and results in nausea and vomiting within 3-6 hours of eating contaminated food. This illness also lasts about 24 hrs and it tends to resemble Staphylococcal food poisoning.

**Prevention of Illness:**

- Keep hot foods hot (>6°C) and keep cold foods cold (<5°C)!

### ***Vibrio Paraheamolyticus***

**Foods Associated with Vibrio paraheamolyticus:** Seafoods, especially shellfish.

**Characteristics of Illness:** Diarrhea, abdominal cramps and nausea.

**Onset:** Illness may occur within 1 to 4 days after eating contaminated food.

**Duration:** Illness may last for 2 to 3 days.

**Prevention of Illness:**

- Keep seafood well refrigerated.
- Avoid eating raw shellfish.

### ***Shigella***

**Foods Associated with Shigella:** Salads, raw produce, milk and dairy products. Contamination of foods with this bacteria is most commonly because of:

1. unsanitary handling of food by the food handlers or contaminated water.

**Characteristics of Illness:** Severe watery diarrhea, including bloody diarrhea, fever and cramping.

**Onset:** Illness may begin between 12 hrs and 2 days after consuming contaminated food or water.

**Prevention of Illness:**

- Wash fresh fruits and vegetables thoroughly under running water.
- Always wash hands well when preparing foods.

### ***Norwalk virus***

**Foods Associated with Norwalk virus** Raw seafood water and ice, salads, frosting.

**Cause of illness:** Infection with Norwalk virus

**Incubation period:** 12-48 hours

**Characteristics of Illness:** Nausea, vomiting, diarrhea, abdominal cramps

**Possible contaminant:** person-to-person contact

**Steps for prevention:** Adequate treatment and disposal of sewage; restriction of infected food handlers from working with food until they no longer shed virus

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## LAWS GOVERNING FOOD SERVICE

The Food Standards Agency carries out a range of work to make sure food is safe to eat, including funding research on chemical, microbiological and radiological safety, as well as food hygiene and allergy.

The details of our day-to-day work on safety and hygiene, including policy, business and our research programmes are set out below.

## UNITED NATIONS GUIDELINES FOR CONSUMER PROTECTION

(as expanded in 1999)

### *I. Objectives*

1. Taking into account the interests and needs of consumers in all countries, particularly those in developing countries; recognizing that consumers often face imbalances in economic terms, educational levels and bargaining power; and bearing in mind that consumers should have the right of access to non-hazardous products, as well as the right to promote just, equitable and sustainable economic and social development and environmental protection, these guidelines for consumer protection have the following objectives:

- (a) To assist countries in achieving or maintaining adequate protection for their population as consumers;
- (b) To facilitate production and distribution patterns responsive to the needs and desires of consumers;
- (c) To encourage high levels of ethical conduct for those engaged in the production and distribution of goods and services to consumers;
- (d) To assist countries in curbing abusive business practices by all enterprises at the national and international levels which adversely affect consumers;
- (e) To facilitate the development of independent consumer groups;
- (f) To further international cooperation in the field of consumer protection;
- (g) To encourage the development of market conditions which provide consumers with greater choice at lower prices;
- (h) To promote sustainable consumption.

### *II. General principles*

2. Governments should develop or maintain a strong consumer protection policy, taking into account the guidelines set out below and relevant international agreements. In so doing, each Government should set its own priorities for the protection of consumers in accordance with the economic, social and

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environmental circumstances of the country and the needs of its population, bearing in mind the costs and benefits of proposed measures.

3. The legitimate needs which the guidelines are intended to meet are the following:

- (a) The protection of consumers from hazards to their health and safety;
- (b) The promotion and protection of the economic interests of consumers;
- (c) Access of consumers to adequate information to enable them to make informed choices according to individual wishes and needs;
- (d) Consumer education, including education on the environmental, social and economic impacts of consumer choice;
- (e) Availability of effective consumer redress;
- (f) Freedom to form consumer and other relevant groups or organizations and the opportunity of such organizations to present their views in decision-making processes affecting them;
- (g) The promotion of sustainable consumption patterns.

4. Unsustainable patterns of production and consumption, particularly in industrialized countries, are the major cause of the continued deterioration of the global environment. All countries should strive to promote sustainable consumption patterns; developed countries should take the lead in achieving sustainable consumption patterns; developing countries should seek to achieve sustainable consumption patterns in their development process, having due regard to the principle of common but differentiated responsibilities. The special situation and needs of developing countries in this regard should be fully taken into account.

5. Policies for promoting sustainable consumption should take into account the goals of eradicating poverty, satisfying the basic human needs of all members of society, and reducing inequality within and between countries.

6. Governments should provide or maintain adequate infrastructure to develop, implement and monitor consumer protection policies. Special care should be taken to ensure that measures for consumer protection are implemented for the benefit of all sectors of the population, particularly the rural population and people living in poverty.

7. All enterprises should obey the relevant laws and regulations of the countries in which they do business. They should also conform to the appropriate provisions of international standards for consumer protection to which the competent authorities of the country in question have agreed.

(Hereinafter references to international standards in the guidelines should be viewed in the context of this paragraph.)

8. The potential positive role of universities and public and private enterprises in research should be considered when developing consumer protection policies.

**III. Guidelines**

9. The following guidelines should apply both to home-produced goods and services and to imports.

10. In applying any procedures or regulations for consumer protection, due regard should be given to ensuring that they do not become barriers to international trade and that they are consistent with international trade obligations.

*A. Physical safety*

11. Governments should adopt or encourage the adoption of appropriate measures, including legal systems, safety regulations, national or international standards, voluntary standards and the maintenance of safety records to ensure that products are safe for either intended or normally foreseeable use.

12. Appropriate policies should ensure that goods produced by manufacturers are safe for either intended or normally foreseeable use. Those responsible for bringing goods to the market, in particular suppliers, exporters, importers, retailers and the like (hereinafter referred to as ?distributors@), should ensure that while in their care these goods are not rendered unsafe through improper handling or storage and that while in their care they do not become hazardous through improper handling or storage. Consumers should be instructed in the proper use of goods and should be informed of the risks involved in intended or normally foreseeable use. Vital safety information should be conveyed to consumers by internationally understandable symbols wherever possible.

13. Appropriate policies should ensure that if manufacturers or distributors become aware of unforeseen hazards after products are placed on the market, they should notify the relevant authorities and, as appropriate, the public without delay. Governments should also consider ways of ensuring that consumers are properly informed of such hazards.

14. Governments should, where appropriate, adopt policies under which, if a product is found to be seriously defective and/or to constitute a substantial and severe hazard even when properly used, manufacturers and/or distributors should recall it and replace or modify it, or substitute another product for it; if it is not possible to do this within a reasonable period of time, the consumer should be adequately compensated.

*B. Promotion and protection of consumers' economic interests*

15. Government policies should seek to enable consumers to obtain optimum benefit from their economic resources. They should also seek to achieve the goals of satisfactory production and performance standards, adequate distribution methods, fair business practices, informative marketing and effective protection against practices which could adversely affect the economic interests of consumers and the exercise of choice in the market place.

16. Governments should intensify their efforts to prevent practices which are damaging to the economic interests of consumers through ensuring that manufacturers, distributors and others involved in the provision of goods and services adhere to established laws and mandatory standards. Consumer

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organizations should be encouraged to monitor adverse practices, such as the adulteration of foods, false or misleading claims in marketing and service frauds.

17. Governments should develop, strengthen or maintain, as the case may be, measures relating to the control of restrictive and other abusive business practices which may be harmful to consumers, including means for the enforcement of such measures. In this connection, Governments should be guided by their commitment to the Set of Multilaterally Agreed Equitable Principles and Rules for the Control of Restrictive Business Practices adopted by the General Assembly in resolution 35/63 of 5 December 1980.

18. Governments should adopt or maintain policies that make clear the responsibility of the producer to ensure that goods meet reasonable demands of durability, utility and reliability, and are suited to the purpose for which they are intended, and that the seller should see that these requirements are met. Similar policies should apply to the provision of services.

19. Governments should encourage fair and effective competition in order to provide consumers with the greatest range of choice among products and services at the lowest cost.

20. Governments should, where appropriate, see to it that manufacturers and/or retailers ensure adequate availability of reliable after-sales service and spare parts.

21. Consumers should be protected from such contractual abuses as one-sided standard contracts, exclusion of essential rights in contracts and unconscionable conditions of credit by sellers.

22. Promotional marketing and sales practices should be guided by the principle of fair treatment of consumers and should meet legal requirements. This requires the provision of the information necessary to enable consumers to take informed and independent decisions, as well as measures to ensure that the information provided is accurate.

23. Governments should encourage all concerned to participate in the free flow of accurate information on all aspects of consumer products.

24. Consumer access to accurate information about the environmental impact of products and services should be encouraged through such means as product profiles, environmental reports by industry, information centres for consumers, voluntary and transparent eco-labelling programmes and product information hotlines.

25. Governments, in close collaboration with manufacturers, distributors and consumer organizations, should take measures regarding misleading environmental claims or information in advertising and other marketing activities. The development of appropriate advertising codes and standards for the regulation and verification of environmental claims should be encouraged.

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26. Governments should, within their own national context, encourage the formulation and implementation by business, in cooperation with consumer organizations, of codes of marketing and other business practices to ensure adequate consumer protection. Voluntary agreements may also be established jointly by business, consumer organizations and other interested parties. These codes should receive adequate publicity.

27. Governments should regularly review legislation pertaining to weights and measures and assess the adequacy of the machinery for its enforcement.

*C. Standards for the safety and quality of consumer goods and services*

28. Governments should, as appropriate, formulate or promote the elaboration and implementation of standards, voluntary and other, at the national and international levels for the safety and quality of goods and services and give them appropriate publicity. National standards and regulations for product safety and quality should be reviewed from time to time, in order to ensure that they conform, where possible, to generally accepted international standards.

29. Where a standard lower than the generally accepted international standard is being applied because of local economic conditions, every effort should be made to raise that standard as soon as possible.

30. Governments should encourage and ensure the availability of facilities to test and certify the safety, quality and performance of essential consumer goods and services.

*D. Distribution facilities for essential consumer goods and services*

31. Governments should, where appropriate, consider:

(a) Adopting or maintaining policies to ensure the efficient distribution of goods and services to consumers; where appropriate, specific policies should be considered to ensure the distribution of essential goods and services where this distribution is endangered, as could be the case particularly in rural areas. Such policies could include assistance for the creation of adequate storage and retail facilities in rural centres, incentives for consumer self-help and better control of the conditions under which essential goods and services are provided in rural areas;

(b) Encouraging the establishment of consumer cooperatives and related trading activities, as well as information about them, especially in rural areas. E. Measures enabling consumers to obtain redress

32. Governments should establish or maintain legal and/or administrative measures to enable consumers or, as appropriate, relevant organizations to obtain redress through formal or informal procedures that are expeditious, fair, inexpensive and accessible. Such procedures should take particular account of the needs of low-income consumers.



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33. Governments should encourage all enterprises to resolve consumer disputes in a fair, expeditious and informal manner, and to establish voluntary mechanisms, including advisory services and informal complaints procedures, which can provide assistance to consumers.

34. Information on available redress and other dispute-resolving procedures should be made available to consumers.

*F. Education and information programmes*

35. Governments should develop or encourage the development of general consumer education and information programmes, including information on the environmental impacts of consumer choices and behaviour and the possible implications, including benefits and costs, of changes in consumption, bearing in mind the cultural traditions of the people concerned. The aim of such programmes should be to enable people to act as discriminating consumers, capable of making an informed choice of goods and services, and conscious of their rights and responsibilities. In developing such programmes, special attention should be given to the needs of disadvantaged consumers, in both rural and urban areas, including low-income consumers and those with low or non-existent literacy levels. Consumer groups, business and other relevant organizations of civil society should be involved in these educational efforts.

36. Consumer education should, where appropriate, become an integral part of the basic curriculum of the educational system, preferably as a component of existing subjects.

37. Consumer education and information programmes should cover such important aspects of consumer protection as the following:

- (a) Health, nutrition, prevention of food-borne diseases and food adulteration;
- (b) Product hazards;
- (c) Product labelling;
- (d) Relevant legislation, how to obtain redress, and agencies and organizations for consumer protection;
- (e) Information on weights and measures, prices, quality, credit conditions and availability of basic necessities;
- (f) Environmental protection; and
- (g) Efficient use of materials, energy and water.

38. Governments should encourage consumer organizations and other interested groups, including the media, to undertake education and information programmes, including on the environmental impacts of consumption patterns and on the possible implications, including benefits and costs, of changes in consumption, particularly for the benefit of low-income consumer groups in rural and urban areas.

39. Business should, where appropriate, undertake or participate in factual and relevant consumer education and information programmes.

40. Bearing in mind the need to reach rural consumers and illiterate consumers, Governments should, as appropriate, develop or encourage the development of consumer information programmes in the mass media.

41. Governments should organize or encourage training programmes for educators, mass media professionals and consumer advisers, to enable them to participate in carrying out consumer information and education programmes.

*G. Promotion of sustainable consumption*

42. Sustainable consumption includes meeting the needs of present and future generations for goods and services in ways that are economically, socially and environmentally sustainable.

43. Responsibility for sustainable consumption is shared by all members and organizations of society, with informed consumers, Government, business, labour organizations, and consumer and environmental organizations playing particularly important roles. Informed consumers have an essential role in promoting consumption that is environmentally, economically and socially sustainable, including through the effects of their choices on producers. Governments should promote the development and implementation of policies for sustainable consumption and the integration of those policies with other public policies. Government policy-making should be conducted in consultation with business, consumer and environmental organizations, and other concerned groups. Business has a responsibility for promoting sustainable consumption through the design, production and distribution of goods and services. Consumer and environmental organizations have a responsibility for promoting public participation and debate on sustainable consumption, for informing consumers, and for working with Government and business towards sustainable consumption.

44. Governments, in partnership with business and relevant organizations of civil society, should develop and implement strategies that promote sustainable consumption through a mix of policies that could include regulations; economic and social instruments; sectoral policies in such areas as land use, transport, energy and housing; information programmes to raise awareness of the impact of consumption patterns; removal of subsidies that promote unsustainable patterns of consumption and production; and promotion of sector-specific environmental-management best practices.

45. Governments should encourage the design, development and use of products and services that are safe and energy and resource efficient, considering their full life-cycle impacts. Governments should encourage recycling programmes that encourage consumers to both recycle wastes and purchase recycled products.

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46. Governments should promote the development and use of national and international environmental health and safety standards for products and services; such standards should not result in disguised barriers to trade.

47. Governments should encourage impartial environmental testing of products.

48. Governments should safely manage environmentally harmful uses of substances and encourage the development of environmentally sound alternatives for such uses. New potentially hazardous substances should be evaluated on a scientific basis for their long-term environmental impact prior to distribution.

49. Governments should promote awareness of the health-related benefits of sustainable consumption and production patterns, bearing in mind both direct effects on individual health and collective effects through environmental protection.

50. Governments, in partnership with the private sector and other relevant organizations, should encourage the transformation of unsustainable consumption patterns through the development and use of new environmentally sound products and services and new technologies, including information and communication technologies, that can meet consumer needs while reducing pollution and depletion of natural resources.

51. Governments are encouraged to create or strengthen effective regulatory mechanisms for the protection of consumers, including aspects of sustainable consumption.

52. Governments should consider a range of economic instruments, such as fiscal instruments and internalization of environmental costs, to promote sustainable consumption, taking into account social needs, the need for disincentives for unsustainable practices and incentives for more sustainable practices, while avoiding potential negative effects for market access, in particular for developing countries.

53. Governments, in cooperation with business and other relevant groups, should develop indicators, methodologies and databases for measuring progress towards sustainable consumption at all levels. This information should be publicly available.

54. Governments and international agencies should take the lead in introducing sustainable practices in their own operations, in particular through their procurement policies. Government procurement, as appropriate, should encourage development and use of environmentally sound products and services.

55. Governments and other relevant organizations should promote research on consumer behaviour related to environmental damage in order to identify ways to make consumption patterns more sustainable.

*H. Measures relating to specific areas*

56. In advancing consumer interests, particularly in developing countries,

Governments should, where appropriate, give priority to areas of essential concern for the health of the consumer, such as food, water and pharmaceuticals. Policies should be adopted or maintained for product quality control, adequate and secure distribution facilities, standardized international labelling and information, as well as education and research programmes in these areas. Government guidelines in regard to specific areas should be developed in the context of the provisions of this document.

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57. Food. When formulating national policies and plans with regard to food, Governments should take into account the need of all consumers for food security and should support and, as far as possible, adopt standards from the Food and Agriculture Organization of the United Nations and the World Health Organization Codex Alimentarius or, in their absence, other generally accepted international food standards. Governments should maintain, develop or improve food safety measures, including, inter alia, safety criteria, food standards and dietary requirements and effective monitoring, inspection and evaluation mechanisms.

58. Governments should promote sustainable agricultural policies and practices, conservation of biodiversity, and protection of soil and water, taking into account traditional knowledge.

59. Water. Governments should, within the goals and targets set for the International Drinking Water Supply and Sanitation Decade, formulate, maintain or strengthen national policies to improve the supply, distribution and quality of water for drinking. Due regard should be paid to the choice of appropriate levels of service, quality and technology, the need for education programmes and the importance of community participation.

60. Governments should assign high priority to the formulation and implementation of policies and programmes concerning the multiple uses of water, taking into account the importance of water for sustainable development in general and its finite character as a resource.

61. Pharmaceuticals. Governments should develop or maintain adequate standards, provisions and appropriate regulatory systems for ensuring the quality and appropriate use of pharmaceuticals through integrated national drug policies which could address, inter alia, procurement, distribution, production, licensing arrangements, registration systems and the availability of reliable information on pharmaceuticals. In so doing, Governments should take special account of the work and recommendations of the World Health Organization on pharmaceuticals. For relevant products, the use of that organization's Certification Scheme on the Quality of Pharmaceutical Products Moving in International Commerce and other international information systems on pharmaceuticals should be encouraged. Measures should also be taken, as appropriate, to promote

the use of international nonproprietary names (INNs) for drugs, drawing on the work done by the World Health Organization.

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62. In addition to the priority areas indicated above, Governments should adopt appropriate measures in other areas, such as pesticides and chemicals in regard, where relevant, to their use, production and storage, taking into account such relevant health and environmental information as Governments may require producers to provide and include in the labelling of products.

### *IV. International Cooperation*

63. Governments should, especially in a regional or subregional context:

- (a) Develop, review, maintain or strengthen, as appropriate, mechanisms for the exchange of information on national policies and measures in the field of consumer protection;
- (b) Cooperate or encourage cooperation in the implementation of consumer protection policies to achieve greater results within existing resources. Examples of such cooperation could be collaboration in the setting up or joint use of testing facilities, common testing procedures, exchange of consumer information and education programmes, joint training programmes and joint elaboration of regulations;
- (c) Cooperate to improve the conditions under which essential goods are offered to consumers, giving due regard to both price and quality. Such cooperation could include joint procurement of essential goods, exchange of information on different procurement possibilities and agreements on regional product specifications.

64. Governments should develop or strengthen information links regarding products which have been banned, withdrawn or severely restricted in order to enable other importing countries to protect themselves adequately against the harmful effects of such products.

65. Governments should work to ensure that the quality of products, and information relating to such products, does not vary from country to country in a way that would have detrimental effects on consumers.

66. To promote sustainable consumption, Governments, international bodies and business should work together to develop, transfer and disseminate environmentally sound technologies, including through appropriate financial support from developed countries, and to devise new and innovative mechanisms for financing their transfer among all countries, in particular to and among developing countries and countries with economies in transition.

67. Governments and international organizations, as appropriate, should promote and facilitate capacity-building in the area of sustainable consumption, particularly in developing countries and countries with economies in transition. In particular,

Governments should also facilitate cooperation among consumer groups and other relevant organizations of civil society, with the aim of strengthening capacity in this area.

68. Governments and international bodies, as appropriate, should promote programmes relating to consumer education and information.

69. Governments should work to ensure that policies and measures for consumer protection are implemented with due regard to their not becoming barriers to international trade, and that they are consistent with international trade obligations.

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### FOOD SAFETY AND STANDARDS AUTHORITY OF INDIA

The Food Safety and Standards Authority of India is an autonomous statutory Authority set up under the Food Safety and Standards Act, 2006 for laying down science based standards for articles of food and to regulate their manufacture, storage, distribution, sale and import, to ensure availability of safe and wholesome food for human consumption. The Act aims to establish a single reference point for all matters relating to food safety and standards, by moving from multi-level, multi-departmental control to a single line of command. Ministry of Health & Family Welfare, Government of India is the administrative ministry for the implementation of FSSA. The Chairperson and Chief Executive Officer of Food Safety and Standards Authority of India (FSSA) have already been appointed by Government of India.

The FSSA intends to engage a multi-skilled consultancy agency of National/International repute for preparation of a blue print and assist in structuring and operationalizing FSSA. Details regarding duties and functions of Food Authority may be seen under section 16 of Act. The applicant may be a single entity or a multiple entity/consortium coming together to execute such projects. Consortium as a whole must have extensive experience in similar work and in regulatory affairs. Some of the basic requirements for the agency are:

- The agency should be of international repute having a minimum annual turnover of Rs. 10 crores.
- The agency should have wide experience/exposure in the field of Human Resource Development, Management & Legal aspects, framing Operational & Regulatory procedures, rules and guidelines. Exposure to food safety, quality & standards issues/policies at National as well as global level will be an added advantage. Agencies having strong multi-skilled resource base in house, will be given preference.
- Should have demonstrated capabilities for designing Operational, HRD, Financial and Regulatory Legal framework for organizations.
- Agencies having prior experience in establishing/structuring and operationalization of such Authority/Corporate Body may be exempted from the minimum annual turnover condition.

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- The agency should have international network and reach and should have implemented / executed at least one such project either within the country or abroad.
- Should be willing and capable of staying with Food Authority, at least for a period of 12-18 months so as to enable the Food Authority to start its full-fledged operations at the earliest.

In the event of non-availability of suitable agency for execution of project, the authority may consider hiring services of two separate agencies i.e. one for legal/regulatory aspects and another one for the remaining aspects indicated under scope of work.

### **OBJECTIVE AND SCOPE OF WORK**

#### *Objective of the Assignment*

The Food Safety and Standard Authority of India (FSSAI) has the mandate of laying down science based standards for articles of food and to regulate their manufacture, storage, distribution, sale and import, to ensure availability of safe and wholesome food for human consumption, as per the provisions of the Act. The FSSAI intends to engage a multi-skilled consultancy agency of National/international repute for preparation of a blue print and assist in structuring and operationalizing Food Authority. A copy of Food Safety and Standards Act, 2006 as notified in the gazette of India is at Annexure- II.

#### *Scope of Work*

The agency would be required to carry out the activities indicated below: -

##### **A. General:**

1. Design the Action Plan-cum-Pert-Chart indicating time-schedule for completion of various activities required for structuring and operationalization of Food Authority in a full-fledged manner.
2. Suggest appropriate organizational structure of Food Authority. The design of organizational structure should be framed based on International best practices like EU Food Safety Authority, UK Food Safety Agency, Food and Drug Administration, USA, etc and the mandate of the Food Safety and Standards Act, 2006.
3. Assist in framing Rules, Regulations and Manual of procedures for day-to-day functioning of Food Authority facilitating IT enabled processes and Officer oriented systems.
4. Assist in developing framework for institutional excellence, Service delivery standards and Mission statements
5. Assist in developing a Strategic Action Plan for achievement of objectives of Food Authority

**B. HRD Framework:**

1. Draw HRD action plan for the authority indicating structure, position description, competency framework and compensation. Estimation of skill requirement and steps required to meet them. Analyze requirement of fresh staff on regular/contractual basis, if any, and frame recruitment rules for the regular /contract posts to be created, selection of core staff and suggest recruitment procedures.
2. Assist in identification and recruitment of Staff required for Food Authority
3. Suggest mechanism for pooling of resources such infrastructure, manpower and other facilities etc. under various food related Acts or Orders under repeal and redeployment plan under Food Authority.

**C. Regulatory Framework:**

1. Drafting Rules for carrying out the provisions of Act as indicated under section 91
2. Drafting Regulations consistent with Act and the Rules made there under to carryout the provisions of Act, as indicated under section 92
3. Assist in framing Rules to carryout the functions and duties assigned to the State Government and the State Commissioner of Food Safety, as indicated under section 94

It should be ensured that the Rules and Regulations proposed are in consonance with the spirit of the Act and keeping in view best practices followed at International level like EU Food Safety Authority, UK Food Safety Agency, Food and Drug Administration, USA, etc. During drafting of Rules and Regulations as per provision of the Act, the agency should devise suitable mechanism for interface with industry/consumers. National Level Workshops may be organized and ensured that inputs gathered therein are duly incorporated while drafting Rules and Regulations.

**D. Financial Framework:**

1. Structure financial framework for Food Authority and suggest the form and time for preparing Annual Report, Budget and Statement of Accounts.
2. Suggest Financial Regulations to be adopted by the Food Authority
3. Design appropriate framework for financial delegation in Food Authority to facilitate accountability, flexibility in decision making and financial propriety.

**E. Phasing of Implementation:**

1. Analysis of the current status of Prevention of Food Adulteration Act (PFA), 1954, Fruit Products Order (FPO), 1955, Meat Food Products Order (MFPO), 1973, in terms of human resource, infrastructure and other assets and identify the gaps to be filled.



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2. Propose integration of different food related laws/orders in the country under Food Authority in a phased manner; Transition arrangements and mechanism; Action plan for States for smooth transition into the Act; Review mechanism for monitoring and expediting implementation in the States.

The details as mentioned above are indicative only. Any other item/matter not specifically indicated above, which is required to be or may be specified by Rules and Regulations or in respect of which provision is to be made by Rules and Regulations, shall be deemed to have been incorporated with in the scope of the study. The scope of work includes all preparatory documents required for initiating implementation of the Act. Omission of specific reference to any of the activities in the scope of work shall not relieve the agency of its responsibility to provide such consultancy service for structuring and operationalizing FSSA.

### *Schedule of Completing the Assignment*

The assignment is required to be completed within 12 months of award of work. Consultancy Agency is expected to prepare and execute short term, Interim & long term plans for structuring and operationalizing Food Authority as per scope of work. Time schedule for various activities for completion of assignment is to be designed accordingly.

### *Deliverables*

The consulting agency is required to deliver the documents as per the scope of work and should clearly state the assumptions made and sources of data. Progress report on scope of work will be submitted to Food Authority every month. Detailed Action Plan for the complete assignment should be finalized in consultation with Food Authority by 4<sup>th</sup> week from the date of award of work. All the deliverables as per the scope of work should be made available to Food Authority within 12 months. Final report will be submitted at the end of 12 months for assessment of major deliverables.

## **INSTRUCTIONS TO THE APPLICANT**

The Food Safety and Standard Authority of India (FSSA) is being established for laying down science based standards for articles of food and to regulate their manufacture, storage, distribution, sale and import, to ensure availability of safe and wholesome food for human consumption and for matter connected therewith or incidental there to, as per the provisions of the Act. The FSSA intends to engage a multi-skilled consultancy agency of National/international repute for preparation of a blue print and assist in structuring and operationalizing FSSA through wide consultations with concerned Ministry, Industry and stakeholders.

### *Applicant Status*

The applicant may be a single entity or a multiple entity/consortium coming together to set up such projects. Consortium as a whole must have extensive

experience in structuring institutions and in regulatory affairs and meet the qualifying requirements as stipulated below. The Principal consultant should qualify the eligibility criteria.

- The agency should be of international repute having a minimum annual turnover of Rs. 10 crores.
- The agency should have extensive experience/exposure in the field of Human Resource Development, Management & Legal aspects, framing Operational & Regulatory procedures, rules and guidelines. Exposure to food safety, quality & standards issues/policies at National as well as global level will be an added advantage. Strong multi-skilled resource base within the agency will be advantageous.
- Should have demonstrated capabilities for designing Operational, HRD, Financial and Regulatory Legal framework for organizations.
- Agencies having prior experience in establishing/structuring and operationalization of such Authority/Corporate Body may be exempted from the minimum annual turnover condition.
- The agency should have international network and reach and should have implemented / executed at least one such project either within the country or abroad.
- Should be willing and capable of staying with Food Authority at least for a period of 12-18 months so as to enable the Food Authority to start its full-fledged operations expeditiously.

In the event of non-availability of suitable agency for execution of project, the authority may consider hiring services of two separate agencies i.e. one for legal/regulatory aspects and another one for the remaining aspects indicated under scope of work.

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### FOOD SAFETY AND STANDARDS ACT 2006

An Act to consolidate the laws relating to food and to establish the Food Safety and Standards Authority of India for laying down science based standards for articles of food and to regulate their manufacture, storage, distribution, sale and import, to ensure availability of safe and wholesome food for human consumption and for matters connected therewith or incidental thereto. BE it enacted by Parliament in the Fifty-seventh Year of the Republic of India as follows:-

#### PRELIMINARY

1. *Short title, extent and commencement.* -(1) This Act may be called the Food Safety and Standards Act, 2006.

(2) It extends to the whole of India.

(3) It shall come into force on such date as the Central Government may, by notification in the Official Gazette, appoint, and different dates may be appointed

for different provisions of this Act and any reference in any such provision to the commencement of this Act shall be construed as a reference to the coming into force of that provision.

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**2. Declaration as to expediency of control by the Union..-** It is hereby declared that it is expedient in the public interest that the Union should take under its control the food industry.

**3. Definitions. -** (1) In this Act, unless the context otherwise requires,-

- (a) "adulterant" means any material which is or could be employed for making the food unsafe or sub-standard or mis-branded or containing extraneous matter;
- (b) "advertisement" means any audio or visual publicity, representation or pronouncement made by means of any light, sound, smoke, gas, print, electronic media, internet or website and includes through any notice, circular, label, wrapper, invoice or other documents;
- (c) "Chairperson" means the Chairperson of the Food Authority;
- (d) "claim" means any representation which states, suggests or implies that a food has particular qualities relating to its origin, nutritional properties, nature, processing, composition or otherwise;
- (e) "Commissioner of Food Safety" means the Commissioner of Food Safety appointed under section 30;
- (f) "consumer" means persons and families purchasing and receiving food in order to meet their personal needs;
- (g) "contaminant" means any substance, whether or not added to food, but which is present in such food as a result of the production (including operations carried out in crop husbandry, animal husbandry or veterinary medicine), manufacture, processing, preparation, treatment, packing, packaging, transport or holding of such food or as a result of environmental contamination and does not include insect fragments, rodent hairs and other extraneous matter;
- (h) "Designated Officer" means the officer appointed under section 36;
- (i) "extraneous matter" means any matter contained in an article of food which may be carried from the raw materials, packaging materials or process systems used for its manufacture or which is added to it, but such matter does not render such article of food unsafe;
- (j) "food" means any substance, whether processed, partially processed or unprocessed, which is intended for human consumption and includes primary food to the extent defined in clause (ZK), genetically modified or engineered food or food containing such ingredients, infant food, packaged drinking water, alcoholic drink, chewing gum, and any substance,

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including water used into the food during its manufacture, preparation or treatment but does not include any animal feed, live animals unless they are prepared or processed for placing on the market for human consumption, plants prior to harvesting, drugs and medicinal products, cosmetics, narcotic or psychotropic substances: Provided that the Central Government may declare, by notification in the Official Gazette, any other article as food for the purposes of this Act having regards to its use, nature, substance or quality;

- (k) "food additive" means any substance not normally consumed as a food by itself or used as a typical ingredient of the food, whether or not it has nutritive value, the intentional addition of which to food for a technological (including organoleptic) purpose in the manufacture, processing, preparation, treatment, packing, packaging, transport or holding of such food results, or may be reasonably expected to result (directly or indirectly), in it or its by-products becoming a component of or otherwise affecting the characteristics of such food but does not include "contaminants" or substances added to food for maintaining or improving nutritional qualities;
- (l) "Food Analyst" means an analyst appointed under section 45;
- (m) "Food Authority" means the Food Safety and Standards Authority of India established under section 4;
- (n) "food business" means any undertaking, whether for profit or not and whether public or private, carrying out any of the activities related to any stage of manufacture, processing, packaging, storage, transportation, distribution of food, import and includes food services, catering services, sale of food or food ingredients;
- (o) "food business operator" in relation to food business means a person by whom the business is carried on or owned and is responsible for ensuring the compliance of this Act, rules and regulations made thereunder;
- (p) "food laboratory" means any food laboratory or institute established by the Central or a State Government or any other agency and accredited by National Accreditation Board for Testing and Calibration Laboratories or an equivalent accreditation agency and recognised by the Food Authority under section 43;
- (q) "food safety" means assurance that food is acceptable for human consumption according to its intended use;
- (r) "food safety audit" means a systematic and functionally independent examination of food safety measures adopted by manufacturing units to determine whether such measures and related results meet with objectives of food safety and the claims made in that behalf;
- (s) "Food Safety Management System" means the adoption of Good Manufacturing Practices, Good Hygienic Practices, Hazard Analysis and

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Critical Control Point and such other practices as may be specified by regulation, for the food business;

- (t) "Food Safety Officer " means an officer appointed under section 37;
- (u) "hazard" means a biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect;
- (v) "import" means bringing into India any article of food by land, sea or air;
- (w) "improvement notice" means a notice issued under section 32 of this Act;
- (x) "infant food" and "infant milk substitute" shall have the meanings assigned to them in clauses (f) and (g) of sub-section (1) of section 2 of the Infant Milk Substitutes, Feeding Bottles and Infant Foods (Regulation of Production, Supply and Distribution) Act,1992, respectively;
- (y) "ingredient" means any substance, including a food additive used in the manufacture or preparation of food and present in the final product, possibly in a modified form;
- (z) "label" means any tag, brand, mark, pictorial or other descriptive matter, written, printed, stencilled, marked, embossed, graphic, perforated, stamped or impressed on or attached to container, cover, lid or crown of any food package and includes a product insert;
- (za) "licence" means a licence granted under section 31;
- (zb) "local area" means any area, whether urban or rural, notified by the Commissioner of Food Safety, to be a local area for the purposes of this Act;
- (zc) "manufacture" means a process or adoption or any treatment for conversion of ingredients into an article of food, which includes any sub-process, incidental or ancillary to the manufacture of an article of food;
- (zd) "manufacturer" means a person engaged in the business of manufacturing any article of food for sale and includes any person who obtains such article from another person and packs and labels it for sale or only labels it for such purposes;
- (ze) "Member" means Member of the Food Authority and includes the Chairperson;
- (zf) "misbranded food" means an article of food- (A) if it is purported, or is represented to be, or is being- (i) offered or promoted for sale with false, misleading or deceptive claims either; (a) upon the label of the package, or (b) through advertisement, or (ii) sold by a name which belongs to another article of food; or (iii) offered or promoted for sale under the name of a fictitious individual or company as the manufacturer or producer of the article as borne on the package or containing the article or the label on such package; or (B) if the article is sold in packages which

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have been sealed or prepared by or at the instance of the manufacturer or producer bearing his name and address but- (i) the article is an imitation of, or is a substitute for, or resembles in a manner likely to deceive, another article of food under the name of which it is sold, and is not plainly and conspicuously labelled so as to indicate its true character; or (ii) the package containing the article or the label on the package bears any statement, design or device regarding the ingredients or the substances contained therein, which is false or misleading in any material particular, or if the package is otherwise deceptive with respect to its contents; or (iii) the article is offered for sale as the product of any place or country which is false; or (C) if the article contained in the package- (i) contains any artificial flavouring, colouring or chemical preservative and the package is without a declaratory label stating that fact or is not labelled in accordance with the requirements of this Act or regulations made thereunder or is in contravention thereof; or (ii) is offered for sale for special dietary uses, unless its label bears such information as may be specified by regulation, concerning its vitamins, minerals or other dietary properties in order sufficiently to inform its purchaser as to its value for such use; or (iii) is not conspicuously or correctly stated on the outside thereof within the limits of variability laid down under this Act.

- (zg) "notification" means a notification published in the Official Gazette;
- (zh) "package" means a pre-packed box, bottle, casket, tin, barrel, case, pouch, receptacle, sack, bag, wrapper or such other things in which an article of food is packed;
- (zi) "premises" include any shop, stall, hotel, restaurant, airline services and food canteens, place or vehicle or vessel where any article of food is sold or manufactured or stored for sale;
- (zj) "prescribed" means prescribed by rules made by the Central Government or the State Government, as the case may be under this Act;
- (zk) "primary food" means an article of food, being a produce of agriculture or horticulture or animal husbandry and dairying or aquaculture in its natural form, resulting from the growing, raising, cultivation, picking, harvesting, collection or catching in the hands of a person other than a farmer or fisherman;
- (zl) "prohibition order" means an order issued under section 33 of this Act;
- (zm) "risk", in relation to any article of food, means the probability of an adverse effect on the health of consumers of such food and the severity of that effect, consequential to a food hazard;
- (zn) "risk analysis", in relation to any article of food, means a process consisting of three components, i.e., risk assessment, risk management and risk communication;

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- (zo) "risk assessment" means a scientifically based process consisting of the following steps: (i) hazard identification, (ii) hazard characterisation, (iii) exposure assessment, and (iv) risk characterisation;
- (zp) "risk communication" means the interactive exchange of information and opinions throughout the risk analysis process concerning risks, risk-related factors and risk perceptions, among risk assessors, risk managers, consumers, industry, the academic community and other interested parties, including the explanation of risk assessment findings and the basis of risk management decisions;
- (zq) "risk management" means the process, distinct from risk assessment, of evaluating policy alternatives, in consultation with all interested parties considering risk assessment and other factors relevant for the protection of health of consumers and for the promotion of fair trade practices, and, if needed, selecting appropriate prevention and control options;
- (zr) "sale" with its grammatical variations and cognate expressions, means the sale of any article of food, whether for cash or on credit or by way of exchange and whether by wholesale or retail, for human consumption or use, or for analysis, and includes an agreement for sale, an offer for sale, the exposing for sale or having in possession for sale of any such article, and includes also an attempt to sell any such article;
- (zs) "sample" means a sample of any article of food taken under the provisions of this Act or any rules and regulations made thereunder;
- (zt) "specified by regulations" means specified by regulations made by the Food Authority;
- (zu) "standard", in relation to any article of food, means the standards notified by the Food Authority;
- (zv) "State Government" in relation to a Union territory means the Administrator of that Union territory appointed by the President under article 239 of the Constitution;
- (zw) "substance" includes any natural or artificial substance or other matter, whether it is in a solid state or in liquid form or in the form of gas or vapour;
- (zx) "sub-standard", an article of food shall be deemed to be sub-standard if it does not meet the specified standards but not so as to render the article of food unsafe;
- (zy) "Tribunal" means the Food Safety Appellate Tribunal established under section 70;
- (zz) "unsafe food" means an article of food whose nature, substance or quality is so affected as to render it injurious to health:- (i) by the article itself, or

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its package thereof, which is composed, whether wholly or in part, of poisonous or deleterious substances; or (ii) by the article consisting, wholly or in part, of any filthy, putrid, rotten, decomposed or diseased animal substance or vegetable substance; or (iii) by virtue of its unhygienic processing or the presence in that article of any harmful substance; or (iv) by the substitution of any inferior or cheaper substance whether wholly or in part; or (v) by addition of a substance directly or as an ingredient which is not permitted; or (vi) by the abstraction, wholly or in part, of any of its constituents; or (vii) by the article being so coloured, flavoured or coated, powdered or polished, as to damage or conceal the article or to make it appear better or of greater value than it really is; or (viii) by the presence of any colouring matter or preservatives other than that specified in respect thereof; or (ix) by the article having been infected or infested with worms, weevils or insects; or (x) by virtue of its being prepared, packed or kept under insanitary conditions; or (xi) by virtue of its being mis-branded or sub-standard or food containing extraneous matter; or (xii) by virtue of containing pesticides and other contaminants in excess of quantities specified by regulations.

(2) Any reference in this Act to a law which is not in force in the State of Jammu and Kashmir shall, in relation to that State, be construed as a reference to the corresponding Law, if any, in force in that State.

## FOOD SAFETY AND STANDARDS AUTHORITY OF INDIA

**4. Establishment of Food Safety and Standards Authority of India.** - (1) The Central Government shall, by notification, establish a body to be known as the Food Safety and Standards Authority of India to exercise the powers conferred on, and to perform the functions assigned to, it under this Act.

(2) The Food Authority shall be a body corporate by the name aforesaid, having perpetual succession and a common seal with power to acquire, hold and dispose of property, both movable and immovable, and to contract and shall, by the said name, sue or be sued.

(3) The head office of the Food Authority shall be at Delhi.

(4) The Food Authority may establish its offices at any other place in India.

**5. Composition of Food Authority and qualifications for appointment of its Chairperson and other Members.** - (1) The Food Authority shall consist of a Chairperson and the following twenty-two members out of which one-third shall be women, namely:-

- (a) seven Members, not below the rank of a Joint Secretary to the Government of India, to be appointed by the Central Government, to respectively



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represent the Ministries or Departments of the Central Government dealing with- (i) Agriculture, (ii) Commerce, (iii) Consumer Affairs, (iv) Food Processing, (v) Health, (vi) Legislative Affairs, (vii) Small Scale Industries, who shall be Members ex officio;

- (b) two representatives from food industry of which one shall be from small scale industries;
  - (c) two representatives from consumer organisations;
  - (d) three eminent food technologists or scientists;
  - (e) five members to be appointed by rotation every three years, one each in seriatim from the Zones as specified in the First Schedule to represent the States and the Union territories;
  - (f) two persons to represent farmers' organisations;
  - (g) one person to represent retailers' organisations.
- (2) The Chairperson and other Members of the Food Authority shall be appointed in such a manner so as to secure the highest standards of competence, broad range of relevant expertise, and shall represent, the broadest possible geographic distribution within the country.
- (3) The Chairperson shall be appointed by the Central Government from amongst the persons of eminence in the field of food science or from amongst the persons from the administration who have been associated with the subject and is either holding or has held the position of not below the rank of Secretary to the Government of India.
- (4) The Chairperson and the Members other than ex officio Members of the Food Authority shall be appointed by the Central Government on the recommendations of the Selection Committee.
- (5) The Chairperson or Members other than ex officio Members of the Food Authority shall not hold any other office.

**6. Selection Committee for selection of Chairperson and Members of Food Authority.** - (1) The Central Government shall, for the purpose of selection of the Chairperson and the Members other than ex officio Members of the Food Authority, constitute a Selection Committee consisting of-

- (a) Cabinet Secretary-Chairperson,
- (b) Secretary-in-charge of the Ministry or the Department responsible for administration of this Act as the convener-Member,
- (c) Secretary-in-charge of the Ministries or the Departments of the Central Government dealing with Health, Legislative and Personnel-Members,
- (d) Chairman of the Public Enterprises Selection Board-Member,
- (e) An eminent food technologist to be nominated by the Central Government-Member.

*Explanation.*- For the purposes of clause (e), the Central Government shall nominate a person from amongst persons holding the post of Director or the Head, by whatever name called, of any national research or technical institution.

(2) The Central Government shall, within two months from the date of occurrence of any vacancy by reason of death, resignation or removal of the Chairperson or a Member of the Food Authority and three months before the superannuation or completion of the term of office of the Chairperson or any Member of that Authority, make a reference to the Selection Committee for filling up of the vacancy.

(3) The Selection Committee shall finalise the selection of the Chairperson and Members of the Food Authority within two months from the date on which the reference is made to it.

(4) The Selection Committee shall recommend a panel of two names for every vacancy referred to it.

(5) Before recommending any person for appointment as a Chairperson or other Member of the Food Authority, the Selection Committee shall satisfy itself that such person does not have any financial or other interest, which is likely to affect prejudicially his functions as a Member.

(6) No appointment of the Chairperson or other Member of the Food Authority shall be invalid merely by reason of any vacancy in the Selection Committee.

**7. Term of office, salary, allowances and other conditions of service of Chairperson and Members of Food Authority.** - (1) The Chairperson and the members other than ex officio Members shall hold office for a term of three years from the date on which they enter upon their offices, and shall be eligible for re-appointment for a further period of three years: Provided that no Chairperson or a member other than ex officio Member shall hold office as such after he has attained-

- (a) in the case of the Chairpersons, the age of sixty-five years, and
- (b) in the case of a Member, the age of sixty-two years.

(2) The salary and allowances payable to, and the other terms and conditions of service of, the Chairperson and Members other than ex officio Members shall be such as may be prescribed by the Central Government.

(3) The Chairperson and every Member shall, before entering upon his office, make and subscribe to an oath of office and of secrecy in such form and in such manner and before such authority as may be prescribed by the Central Government.

(4) Notwithstanding anything contained in sub-section (1), the Chairperson or any Member may- (a) relinquish his office by giving in writing to the Central Government a notice of not less than three months; or (b) be removed from his office in accordance with the provisions of section 8.

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(5) The Chairperson or any Member ceasing to hold office as such shall not represent any person before the Food Authority or any State Authority in any manner.

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**8. Removal of Chairperson and Members of Food Authority.** - (1) Notwithstanding anything contained in sub-section (1) of section 7, the Central Government may, by order, remove from office the Chairperson or any other Member, if the Chairperson or as the case may be, such other Member,-

- (a) has been adjudged an insolvent; or
- (b) has been convicted of an offence which, in the opinion of the Central Government, involves moral turpitude; or
- (c) has become physically or mentally incapable of acting as a Member; or
- (d) has acquired such financial or other interests as is likely to affect prejudicially his functions as a Member; or
- (e) has so abused his position as to render his continuance in office prejudicial to the public interest.

(2) No Member shall be removed under clauses (d) and (e) of sub-section (1) unless he has been given a reasonable opportunity of being heard in the matter.

**9. Officers and other employees of Food Authority.** - (1) There shall be a Chief Executive Officer of the Food Authority, not below the rank of Additional Secretary to the Government of India, who shall be the Member-Secretary of the Authority, to be appointed by the Central Government.

(2) The Food Authority may, with the approval of the Central Government, determine the number, nature and categories of other officers and employees required to the Food Authority in the discharge of its functions.

(3) The salaries and allowances payable to, and other conditions of service of, the Chief Executive Officer, officers and other employees shall be such as may be specified by regulations by the Food Authority with the approval of the Central Government.

**10. Functions of the Chief Executive Officer.** - (1) The Chief Executive Officer shall be the legal representative of the Food Authority and shall be responsible for-

- (a) the day-to-day administration of the Food Authority;
- (b) drawing up of proposal for the Food Authority's work programmes in consultation with the Central Advisory Committee;
- (c) implementing the work programmes and the decisions adopted by the Food Authority;

- (d) ensuring the provision of appropriate scientific, technical and administrative support for the Scientific Committee and the Scientific Panel;
- (e) ensuring that the Food Authority carries out its tasks in accordance with the requirements of its users, in particular with regard to the adequacy of the services provided and the time taken;
- (f) the preparation of the statement of revenue and expenditure and the execution of the budget of the Food Authority; and
- (g) developing and maintaining contact with the Central Government, and for ensuring a regular dialogue with its relevant committees.

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(2) Every year, the Chief Executive Officer shall submit to the Food Authority for approval- (a) a general report covering all the activities of the Food Authority in the previous year; (b) programmes of work; (c) the annual accounts for the previous year; and (d) the budget for the coming year.

(3) The Chief Executive Officer shall, following adoption by the Food Authority, forward the general report and the programmes to the Central Government and the State Governments and shall have them published.

(4) The Chief Executive Officer shall approve all financial expenditure of the Food Authority and report on the Authority's activities to the Central Government.

(5) The Chief Executive Officer shall exercise the powers of the Commissioner of Food Safety while dealing with matters relating to food safety of such articles.

(6) The Chief Executive Officer shall have administrative control over the officers and other employees of the Food Authority.

**11. Central Advisory Committee.** - (1) The Food Authority shall, by notification, establish a Committee to be known as the Central Advisory Committee.

(2) The Central Advisory Committee shall consist of two members each to represent the interests of food industry, agriculture, consumers, relevant research bodies and food laboratories, and all Commissioners of Food Safety, and the Chairperson of the Scientific Committee shall be ex officio member.

(3) The representatives of the concerned Ministries or Departments of the Central Government in Agriculture, Animal Husbandry and Dairying, Bio-technology, Commerce and Industry, Consumer Affairs, Environment and Forests, Food Processing Industries, Health, Panchayati Raj, Small Scale Industries and Food and Public Distribution or government institutes or organisations and government recognised farmers' organisation shall be invitees to the deliberations of the Central Advisory Committee.

(4) The Chief Executive Officer shall be ex officio Chairperson of the Central Advisory Committee.

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(5) The Central Advisory Committee shall follow such rules of procedure including its transaction of business as may be specified by regulations.

**12. Functions of Central Advisory Committee.** - (1) The Central Advisory Committee shall ensure close co-operation between the Food Authority and the enforcement agencies and organisations operating in the field of food.

(2) The Central Advisory Committee shall advise the Food Authority on- (a) the performance of its duties under this section and in particular in drawing up of a proposal for the Food Authority's work programme, (b) on the prioritisation of work, (c) identifying potential risks, (d) pooling of knowledge, and (e) such other functions as may be specified by regulations.

(3) The Central Advisory Committee shall meet regularly at the invitation of the Chairperson of Central Advisory Committee or at the request of at least one-third of its members, and not less than three times a year.

**13. Scientific Panels.** - (1) The Food Authority shall establish scientific panels, which shall consist of independent scientific experts.

(2) The Scientific Panel shall invite the relevant industry and consumer representatives in its deliberations.

(3) Without prejudice to the provisions of sub-section (1), the Food Authority may establish as many Scientific Panels as it considers necessary in addition to the Panels on:

- (a) food additives, flavourings, processing aids and materials in contact with food;
- (b) pesticides and antibiotics residues;
- (c) genetically modified organisms and foods;
- (d) functional foods, nutraceuticals, dietetic products and other similar products;
- (e) biological hazards;
- (f) contaminants in the food chain;
- (g) labelling; and
- (h) method of sampling and analysis.

(4) The Food Authority may from time to time re-constitute the Scientific Panels by adding new members or by omitting the existing members or by changing the name of the panel as the case may be.

**14. Scientific Committee.** - (1) The Food Authority shall constitute Scientific Committee which shall consist of the Chairpersons of the Scientific Panels and six independent scientific experts not belonging or affiliated to any of the Scientific Panels.

(2) The Scientific Committee shall be responsible for providing the scientific opinions to the Food Authority, and shall have the powers, where necessary, of organising public hearings.

(3) The Scientific Committee shall be responsible for the general co-ordination necessary to ensure consistency of the scientific opinion procedure and in particular with regard to the adoption of working procedures and harmonisation of working methods of the Scientific Panels.

(4) The Scientific Committee shall provide opinions on multi-sectoral issues falling within the competence of more than one Scientific Panel, and on issues which do not fall within the competence of any of the Scientific Panels.

(5) Wherever necessary, and particularly in the case of subjects which do not fall within the competence of any of the Scientific Panel, the Scientific Committee shall set up working groups and in such cases, it shall draw on the expertise of those working groups when establishing scientific opinions.

**15. Procedure for Scientific Committee and Scientific Panel.** - (1) The members of the Scientific Committee, who are not members of the Scientific Panel and the members of the Scientific Panel shall be appointed by the Food Authority, for a period of three-years, which shall be renewable, for such period, and the vacancy notice shall be published in the relevant leading scientific publications and on the Food Authority's website for a call for expressions of interest.

(2) The Scientific Committee and the Scientific Panel shall each choose a Chairperson from amongst their members.

(3) The Scientific Committee and the Scientific Panel shall act by a majority of their members and the views of the members shall be recorded.

(4) The procedure for the operation and co-operation of the Scientific Committee and the Scientific Panel shall be specified by regulations.

(5) These procedures shall relate in particular to-

- (a) the number of times that a member can serve consecutively on a Scientific Committee or Scientific Panel;
- (b) the number of members in each Scientific Panel;
- (c) the procedure for re-imbursing the expenses of members of the Scientific Committee and the Scientific Panel;
- (d) the manner in which tasks and requests for scientific opinions are assigned to the Scientific Committee and the Scientific Panel;
- (e) the creation and organisation of the working groups of the Scientific Committee and the Scientific Panel, and the possibility of external experts being included in those working groups;
- (f) the possibility of observers being invited to meetings of the Scientific Committee and the Scientific Panel;

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- (g) the possibility of organising public hearings; and
- (h) quorum of the meeting, meeting notice, agenda of the meeting and such other matters.

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**16. Duties and functions of Food Authority.** - (1) It shall be the duty of the Food Authority to regulate and monitor the manufacture, processing, distribution, sale and import of food so as to ensure safe and wholesome food.

(2) Without prejudice to the provisions of sub-section (1), the Food Authority may by regulations specify-

- (a) the standards and guidelines in relation to articles of food and specifying an appropriate system for enforcing various standards notified under this Act;
- (b) the limits for use of food additives, crop contaminants, pesticide residues, residues of veterinary drugs, heavy metals, processing aids, myco-toxins, antibiotics and pharmacological active substances and irradiation of food;
- (c) the mechanisms and guidelines for accreditation of certification bodies engaged in certification of food safety management systems for food businesses;
- (d) the procedure and the enforcement of quality control in relation to any article of food imported into India;
- (e) the procedure and guidelines for accreditation of laboratories and notification of the accredited laboratories;
- (f) the method of sampling, analysis and exchange of information among enforcement authorities;
- (g) conduct survey of enforcement and administration of this Act in the country;
- (h) food labelling standards including claims on health, nutrition, special dietary uses and food category systems for foods; and
- (i) the manner in which and the procedure subject to which risk analysis, risk assessment, risk communication and risk management shall be undertaken.

(3) The Food Authority shall also-

- (a) provide scientific advice and technical support to the Central Government and the State Governments in matters of framing the policy and rules in areas which have a direct or indirect bearing on food safety and nutrition;
- (b) search, collect, collate, analyse and summarise relevant scientific and technical data particularly relating to- (i) food consumption and the exposure of individuals to risks related to the consumption of food; (ii) incidence and prevalence of biological risk; (iii) contaminants in food; (iv) residues of various contaminants; (v) identification of emerging risks; and (vi) introduction of rapid alert system;

- (c) promote, co-ordinate and issue guidelines for the development of risk assessment methodologies and monitor and conduct and forward messages on the health and nutritional risks of food to the Central Government, State Governments and Commissioners of Food Safety;
  - (d) provide scientific and technical advice and assistance to the Central Government and the State Governments in implementation of crisis management procedures with regard to food safety and to draw up a general plan for crisis management and work in close co-operation with the crisis unit set up by the Central Government in this regard;
  - (e) establish a system of network of organisations with the aim to facilitate a scientific co-operation framework by the co-ordination of activities, the exchange of information, the development and implementation of joint projects, the exchange of expertise and best practices in the fields within the Food Authority's responsibility;
  - (f) provide scientific and technical assistance to the Central Government and the State Governments for improving co-operation with international organisations;
  - (g) take all such steps to ensure that the public, consumers, interested parties and all levels of panchayats receive rapid, reliable, objective and comprehensive information through appropriate methods and means;
  - (h) provide, whether within or outside their area, training programmes in food safety and standards for persons who are or intend to become involved in food businesses, whether as food business operators or employees or otherwise;
  - (i) undertake any other task assigned to it by the Central Government to carry out the objects of this Act;
  - (j) contribute to the development of international technical standards for food, sanitary and phyto-sanitary standards;
  - (k) contribute, where relevant and appropriate, to the development of agreement on recognition of the equivalence of specific food related measures;
  - (l) promote co-ordination of work on food standards undertaken by international governmental and non-governmental organisations;
  - (m) promote consistency between international technical standards and domestic food standards while ensuring that the level of protection adopted in the country is not reduced; and
  - (n) promote general awareness as to food safety and food standards.
- (4) The Food Authority shall make it public without undue delay-
- (a) the opinions of the Scientific Committee and the Scientific Panel immediately after adoption;

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- (b) the annual declarations of interest made by members of the Food Authority, the Chief Executive Officer, members of the Advisory Committee and members of the Scientific Committee and Scientific Panel, as well as the declarations of interest if any, made in relation to items on the agendas of meetings;
  - (c) the results of its scientific studies; and
  - (d) the annual report of its activities.
- (5) The Food Authority may, from time to time give such directions, on matters relating to food safety and standards, to the Commissioner of Food Safety, who shall be bound by such directions while exercising his powers under this Act;
- (6) The Food Authority shall not disclose or cause to be disclosed to third parties confidential information that it receives for which confidential treatment has been requested and has been acceded, except for information which must be made public if circumstances so require, in order to protect public health.
- 17. Proceedings of Food Authority.** - (1) The Food Authority shall meet at the head office or any of its offices at such time as the Chairperson may direct, and shall observe such rules of procedure in regard to the transaction of business at its meetings (including the quorum at its meetings) as may be specified by regulations.
- (2) If the Chairperson is unable to attend a meeting of the Food Authority, any other Member nominated by the Chairperson in this behalf and, in the absence of such nomination or where there is no Chairperson, any Member chosen by the Members present from amongst themselves, shall preside at the meeting.
- (3) All questions which come up before any meeting of the Food Authority shall be decided by a majority of votes of the Members present and voting, and in the event of an equality of votes, the Chairperson or the person presiding over the meeting shall have the right to exercise a second or casting vote.
- (4) All orders and decisions of the Food Authority shall be authenticated by the Chief Executive Officer.
- (5) The Chief Executive Officer shall take part in the meetings of the Food Authority but without a right to vote.
- (6) The Food Authority may invite the Chairperson of the Scientific Committee to attend its meetings but without a right to vote.
- (7) No act or proceedings of the Food Authority shall be questioned or invalidated merely on the ground of existence of any vacancy or defect in the constitution of the Food Authority.

**GENERAL PRINCIPLES OF FOOD SAFETY**

**18. General principles to be followed in administration of Act.** - The Central Government, the State Governments, the Food Authority and other agencies, as

the case may be, while implementing the provisions of this Act shall be guided by the following principles, namely :-

(1) (a) endeavour to achieve an appropriate level of protection of human life and health and the protection of consumers' interests, including fair practices in all kinds of food trade with reference to food safety standards and practices; (b) carry out risk management which shall include taking into account the results of risk assessment, and other factors which in the opinion of the Food Authority are relevant to the matter under consideration and where the conditions are relevant, in order to achieve the general objectives of regulations; (c) where in any specific circumstances, on the basis of assessment of available information, the possibility of harmful effects on health is identified but scientific uncertainty persists, provisional risk management measures necessary to ensure appropriate level of health protection may be adopted, pending further scientific information for a more comprehensive risk assessment; (d) the measures adopted on the basis of clause (c) shall be proportionate and no more restrictive of trade than is required to achieve appropriate level of health protection, regard being had to technical and economic feasibility and other factors regarded as reasonable and proper in the matter under consideration; (e) the measures adopted shall be reviewed within a reasonable period of time, depending on the nature of the risk to life or health being identified and the type of scientific information needed to clarify the scientific uncertainty and to conduct a more comprehensive risk assessment; (f) in cases where there are reasonable grounds to suspect that a food may present a risk for human health, then, depending on the nature, seriousness and extent of that risk, the Food Authority and the Commissioner of Food Safety shall take appropriate steps to inform the general public of the nature of the risk to health, identifying to the fullest extent possible the food or type of food, the risk that it may present, and the measures which are taken or about to be taken to prevent, reduce or eliminate that risk; and (g) where any food which fails to comply with food safety requirements is part of a batch, lot or consignment of food of the same class or description, it shall be presumed until the contrary is proved, that all of the food in that batch, lot or consignment fails to comply with those requirements.

(2) The Food Authority shall, while framing regulations or specifying standards under this Act- (a) take into account- (i) prevalent practices and conditions in the country including agricultural practices and handling, storage and transport conditions; and (ii) international standards and practices, where international standards or practices exist or are in the process of being formulated, unless it is of opinion that taking into account of such prevalent practices and conditions or international standards or practices or any particular part thereof would not be an effective or appropriate means for securing the objectives of such regulations or where there is a scientific justification or where they would result in a different

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level of protection from the one determined as appropriate in the country; (b) determine food standards on the basis of risk analysis except where it is of opinion that such analysis is not appropriate to the circumstances or the nature of the case; (c) undertake risk assessment based on the available scientific evidence and in an independent, objective and transparent manner; (d) ensure that there is open and transparent public consultation, directly or through representative bodies including all levels of panchayats, during the preparation, evaluation and revision of regulations, except where it is of opinion that there is an urgency concerning food safety or public health to make or amend the regulations in which case such consultation may be dispensed with: Provided that such regulations shall be in force for not more than six months; (e) ensure protection of the interests of consumers and shall provide a basis for consumers to make informed choices in relation to the foods they consume; (f) ensure prevention of- (i) fraudulent, deceptive or unfair trade practices which may mislead or harm the consumer; and (ii) unsafe or contaminated or sub-standard food.

(3) The provisions of this Act shall not apply to any farmer or fisherman or farming operations or crops or livestock or aquaculture, and supplies used or produced in farming or products of crops produced by a farmer at farm level or a fisherman in his operations.

## GENERAL PROVISIONS AS TO ARTICLES OF FOOD

**19. Use of food additive or processing aid.** - No article of food shall contain any food additive or processing aid unless it is in accordance with the provisions of this Act and regulations made thereunder. Explanation.-For the purposes of this section, "processing aid" means any substance or material, not including apparatus or utensils, and not consumed as a food ingredient by itself, used in the processing of raw materials, foods or its ingredients to fulfil a certain technological purpose during treatment or processing and which may result in the non-intentional but unavoidable presence of residues or derivatives in the final product.

**20. Contaminants, naturally occurring toxic substances, heavy metals, etc.** - No article of food shall contain any contaminant, naturally occurring toxic substances or toxins or hormone or heavy metals in excess of such quantities as may be specified by regulations.

**21. Pesticides, veterinary drugs residues, antibiotic residues and micro-biological counts.** - (1) No article of food shall contain insecticides or pesticides residues, veterinary drugs residues, antibiotic residues, solvent residues, pharmacological active substances and micro-biological counts in excess of such tolerance limits as may be specified by regulations.

(2) No insecticide shall be used directly on article of food except fumigants registered and approved under the Insecticides Act, 1968. Explanation.-For the purposes of this section,-

- (1) "pesticide residue" means any specified substance in food resulting from the use of a pesticide and includes any derivatives of a pesticide, such as conversion products, metabolites, reaction products and impurities considered to be of toxicological significance and also includes such residues coming into food from environment;
- (2) "residues of veterinary drugs" include the parent compounds or their metabolites or both in any edible portion of any animal product and include residues of associated impurities of the veterinary drug concerned.

**22. Genetically modified foods, organic foods, functional foods, proprietary foods, etc.** - Save as otherwise provided under this Act and regulations made thereunder, no person shall manufacture, distribute, sell or import any novel food, genetically modified articles of food, irradiated food, organic foods, foods for special dietary uses, functional foods, nutraceuticals, health supplements, proprietary foods and such other articles of food which the Central Government may notify in this behalf. Explanation.-For the purposes of this section,-

(1) "foods for special dietary uses or functional foods or nutraceuticals or health supplements" means:

- (a) foods which are specially processed or formulated to satisfy particular dietary requirements which exist because of a particular physical or physiological condition or specific diseases and disorders and which are presented as such, wherein the composition of these foodstuffs must differ significantly from the composition of ordinary foods of comparable nature, if such ordinary foods exist, and may contain one or more of the following ingredients, namely:- (i) plants or botanicals or their parts in the form of powder, concentrate or extract in water, ethyl alcohol or hydro alcoholic extract, single or in combination; (ii) minerals or vitamins or proteins or metals or their compounds or amino acids (in amounts not exceeding the Recommended Daily Allowance for Indians) or enzymes (within permissible limits); (iii) substances from animal origin; (iv) a dietary substance for use by human beings to supplement the diet by increasing the total dietary intake;
- (b) (i) a product that is labelled as a "Food for special dietary uses or functional foods or nutraceuticals or health supplements or similar such foods" which is not represented for use as a conventional food and whereby such products may be formulated in the form of powders, granules, tablets, capsules, liquids, jelly and other dosage forms but not parenterals, and are meant for oral administration; (ii) such product does not include a drug as defined in clause (b) and ayurvedic, sidha and unani drugs as defined in clauses (a) and (h) of section 3 of the Drugs and Cosmetics Act, 1940 and rules made thereunder; (iii) does not claim to cure or mitigate

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any specific disease, disorder or condition (except for certain health benefit or such promotion claims) as may be permitted by the regulations made under this Act; (iv) does not include a narcotic drug or a psychotropic substance as defined in the Schedule of the Narcotic Drugs and Psychotropic Substances Act, 1985 and rules made thereunder and substances listed in Schedules E and EI of the Drugs and Cosmetics Rules, 1945;

(2) "genetically engineered or modified food" means food and food ingredients composed of or containing genetically modified or engineered organisms obtained through modern biotechnology, or food and food ingredients produced from but not containing genetically modified or engineered organisms obtained through modern biotechnology;

(3) "organic food" means food products that have been produced in accordance with specified organic production standards;

(4) "proprietary and novel food" means an article of food for which standards have not been specified but is not unsafe: Provided that such food does not contain any of the foods and ingredients prohibited under this Act and the regulations made thereunder.

**23. Packaging and labelling of foods.** - (1) No person shall manufacture, distribute, sell or expose for sale or despatch or deliver to any agent or broker for the purpose of sale, any packaged food products which are not marked and labelled in the manner as may be specified by regulations: Provided that the labels shall not contain any statement, claim, design or device which is false or misleading in any particular concerning the food products contained in the package or concerning the quantity or the nutritive value implying medicinal or therapeutic claims or in relation to the place of origin of the said food products.

(2) Every food business operator shall ensure that the labelling and presentation of food, including their shape, appearance or packaging, the packaging materials used, the manner in which they are arranged and the setting in which they are displayed, and the information which is made available about them through whatever medium, does not mislead consumers.

**24. Restrictions of advertisement and prohibition as to unfair trade practices.** -

(1) No advertisement shall be made of any food which is misleading or deceiving or contravenes the provisions of this Act, the rules and regulations made thereunder.

(2) No person shall engage himself in any unfair trade practice for purpose of promoting the sale, supply, use and consumption of articles of food or adopt any unfair or deceptive practice including the practice of making any statement, whether orally or in writing or by visible representation which-

- (a) falsely represents that the foods are of a particular standard, quality, quantity or grade-composition;
- (b) makes a false or misleading representation concerning the need for, or the usefulness;
- (c) gives to the public any guarantee of the efficacy that is not based on an adequate or scientific justification thereof: Provided that where a defence is raised to the effect that such guarantee is based on adequate or scientific justification, the burden of proof of such defence shall lie on the person raising such defence.

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**25. All imports of articles of food to be subject to this Act.** - (1) No person shall import into India- (i) any unsafe or misbranded or sub-standard food or food containing extraneous matter; (ii) any article of food for the import of which a licence is required under any Act or rules or regulations, except in accordance with the conditions of the licence; and (iii) any article of food in contravention of any other provision of this Act or of any rule or regulation made thereunder or any other Act.

(2) The Central Government shall, while prohibiting, restricting or otherwise regulating import of articles of food under the Foreign Trade ( Development and Regulation ) Act,1992, follow the standards laid down by the Food Authority under the provisions of this Act and the rules and regulations made thereunder.

**SPECIAL RESPONSIBILITIES AS TO FOOD SAFETY**

**26. Responsibilities of the food business operator.** - (1) Every food business operator shall ensure that the articles of food satisfy the requirements of this Act and the rules and regulations made thereunder at all stages of production, processing, import, distribution and sale within the businesses under his control.

(2) No food business operator shall himself or by any person on his behalf manufacture, store, sell or distribute any article of food- (i) which is unsafe; or (ii) which is misbranded or sub-standard or contains extraneous matter; or (iii) for which a licence is required, except in accordance with the conditions of the licence; or (iv) which is for the time being prohibited by the Food Authority or the Central Government or the State Government in the interest of public health; or (v) in contravention of any other provision of this Act or of any rule or regulation made thereunder.

(3) No food business operator shall employ any person who is suffering from infectious, contagious or loathsome disease.

(4) No food business operator shall sell or offer for sale any article of food to any vendor unless he also gives a guarantee in writing in the form specified by

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regulations about the nature and quality of such article to the vendor: Provided that a bill, cash memo, or invoice in respect of the sale of any article of food given by a food business operator to the vendor shall be deemed to be a guarantee under this section, even if a guarantee in the specified form is not included in the bill, cash memo or invoice.

(5) Where any food which is unsafe is part of a batch, lot or consignment of food of the same class or description, it shall be presumed that all the food in that batch, lot or consignment is also unsafe, unless following a detailed assessment within a specified time, it is found that there is no evidence that the rest of the batch, lot or consignment is unsafe: Provided that any conformity of a food with specific provisions applicable to that food shall be without prejudice to the competent authorities taking appropriate measures to impose restrictions on that food being placed on the market or to require its withdrawal from the market for the reasons to be recorded in writing where such authorities suspect that, despite the conformity, the food is unsafe.

**27. Liability of manufacturers, packers, wholesalers, distributors and sellers. -**

(1) The manufacturer or packer of an article of food shall be liable for such article of food if it does not meet the requirements of this Act and the rules and regulations made thereunder.

(2) The wholesaler or distributor shall be liable under this Act for any article of food which is-

- (a) supplied after the date of its expiry; or
- (b) stored or supplied in violation of the safety instructions of the manufacturer; or
- (c) unsafe or misbranded; or
- (d) unidentifiable of manufacturer from whom the article of food have been received; or
- (e) stored or handled or kept in violation of the provisions of this Act, the rules and regulations made thereunder; or
- (f) received by him with knowledge of being unsafe.

(3) The seller shall be liable under this Act for any article of food which is-

- (a) sold after the date of its expiry; or
- (b) handled or kept in unhygienic conditions; or
- (c) misbranded; or
- (d) unidentifiable of the manufacturer or the distributors from whom such articles of food were received; or
- (e) received by him with knowledge of being unsafe.

**28. Food recall procedures. -** (1) If a food business operator considers or has reasons to believe that a food which he has processed, manufactured or distributed is not

in compliance with this Act, or the rules or regulations, made thereunder, he shall immediately initiate procedures to withdraw the food in question from the market and consumers indicating reasons for its withdrawal and inform the competent authorities thereof.

(2) A food business operator shall immediately inform the competent authorities and co-operate with them, if he considers or has reasons to believe that a food which he has placed on the market may be unsafe for the consumers.

(3) The food business operator shall inform the competent authorities of the action taken to prevent risks to the consumer and shall not prevent or discourage any person from co-operating, in accordance with this Act, with the competent authorities, where this may prevent, reduce or eliminate a risk arising from a food.

(4) Every food business operator shall follow such conditions and guidelines relating to food recall procedures as the Food Authority may specify by regulations.

### **ENFORCEMENT OF THE ACT**

**29. Authorities responsible for enforcement of Act.** - (1) The Food Authority and the State Food Safety Authorities shall be responsible for the enforcement of this Act.

(2) The Food Authority and the State Food Safety Authorities shall monitor and verify that the relevant requirements of law are fulfilled by food business operators at all stages of food business.

(3) The authorities shall maintain a system of control and other activities as appropriate to the circumstances, including public communication on food safety and risk, food safety surveillance and other monitoring activities covering all stages of food business.

(4) The Food Safety Officers shall enforce and execute within their area the provisions of this Act with respect to which the duty is not imposed expressly or by necessary implication on some other authority.

(5) The regulations under this Act shall specify which of the Food Safety Officers are to enforce and execute them, either generally or in relation to cases of a particular description or a particular area, and any such regulations or orders may provide for the giving of assistance and information, by any authority concerned in the administration of the regulations or orders, or of any provisions of this Act, to any other authority so concerned, for the purposes of their respective duties under them.

(6) The Commissioner of Food Safety and Designated Officer shall exercise the same powers as are conferred on the Food Safety Officer and follow the same procedure specified in this Act.

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**30. Commissioner of Food Safety of the State.** - (1) The State Government shall appoint the Commissioner of Food Safety for the State for efficient implementation of food safety and standards and other requirements laid down under this Act and the rules and regulations made thereunder.

(2) The Commissioner of Food Safety shall perform all or any of the following functions, namely:-

- (a) prohibit in the interest of public health, the manufacture, storage, distribution or sale of any article of food, either in the whole of the State or any area or part thereof for such period, not exceeding one year, as may be specified in the order notified in this behalf in the Official Gazette;
- (b) carry out survey of the industrial units engaged in the manufacture or processing of food in the State to find out compliance by such units of the standards notified by the Food Authority for various articles of food;
- (c) conduct or organise training programmes for the personnel of the office of the Commissioner of Food Safety and, on a wider scale, for different segments of food chain for generating awareness on food safety;
- (d) ensure an efficient and uniform implementation of the standards and other requirements as specified and also ensure a high standard of objectivity, accountability, practicability, transparency and credibility;
- (e) sanction prosecution for offences punishable with imprisonment under this Act;
- (f) such other functions as the State Government may, in consultation with the Food Authority, prescribe.

(3) The Commissioner of Food Safety may, by Order, delegate, subject to such conditions and restrictions as may be specified in the Order, such of his powers and functions under this Act (except the power to appoint Designated Officer, Food Safety Officer and Food Analyst) as he may deem necessary or expedient to any officer subordinate to him.

**31. Licensing and registration of food business.** - (1) No person shall commence or carry on any food business except under a licence.

(2) Nothing contained in sub-section (1) shall apply to a petty manufacturer who himself manufactures or sells any article of food or a petty retailer, hawker, itinerant vendor or a temporary stall holder or small scale or cottage or such other industries relating to food business or tiny food business operator; but they shall register themselves with such authority and in such manner as may be specified by regulations, without prejudice to the availability of safe and wholesome food for human consumption or affecting the interests of the consumers.

(3) Any person desirous to commence or carry on any food business shall make an application for grant of a licence to the Designated Officer in such manner containing such particulars and fees as may be specified by regulations.

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(4) The Designated Officer on receipt of an application under sub-section (3), may either grant the licence or after giving the applicant an opportunity of being heard and for reasons to be recorded in writing, refuse to grant a licence to any applicant, if he is satisfied that it is necessary so to do in the interest of public health and shall make available to the applicant a copy of the order: Provided that if a licence is not issued within two months from the date of making the application or his application is not rejected, the applicant may start his food business after expiry of the said period and in such a case, the Designated Officer shall not refuse to issue a licence but may, if he considers necessary, issue an improvement notice, under section 32 and follow procedures in that regard.

(5) Every licence shall be in such form and subject to such conditions as may be specified by regulations.

(6) A single licence may be issued by the Designated Officer for one or more articles of food and also for different establishments or premises in the same area.

(7) If the articles of food are manufactured, stored, sold or exhibited for sale at different premises situated in more than one area, separate applications shall be made and separate licence shall be issued in respect of such premises not falling within the same area.

(8) An appeal against the order of rejection for the grant of licence shall lie to the Commissioner of Food Safety.

(9) A licence unless suspended or cancelled earlier shall be in force for such period as may be specified by regulations: Provided that if an application for a renewal of licence is made before the expiry of the period of validity of the licence, the licence shall continue to be in force until orders are passed on the application.

(10) The licence shall subsist for the benefit of the deceased's personal representative or any other member of his family, until the expiry of-

- (a) the period of three months beginning with his death; or
- (b) such longer period as the Designated Officer may allow.

**32. Improvement notices.** - (1) If the Designated Officer has reasonable ground for believing that any food business operator has failed to comply with any regulations to which this section applies, he may, by a notice served on that food business operator (in this Act referred to as an "improvement notice")-

- (a) state the grounds for believing that the food business operator has failed to comply with the regulations;
- (b) specify the matters which constitute the food business operator's failure so to comply;
- (c) specify the measures which, in the opinion of the said Authority, the food business operator must take, in order to secure compliance; and

- (d) require the food business operator to take those measures, or measures which are at least equivalent to them, within a reasonable period (not being less than fourteen days) as may be specified in the notice.

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(2) If the food business operator fails to comply with an improvement notice, his licence may be suspended.

(3) If the food business operator still fails to comply with the improvement notice, the Designated Officer may, after giving the licensee an opportunity to show cause, cancel the licence granted to him: Provided that the Designated Officer may suspend any licence forthwith in the interest of public health for reasons to be recorded in writing.

(4) Any person who is aggrieved by- (a) an improvement notice; or (b) refusal to issue a certificate as to improvement; or (c) cancellation or suspension or revocation of licence under this Act, may appeal to the Commissioner of Food Safety whose decision thereon, shall be final.

(5) The period within which such an appeal may be brought shall be- (a) fifteen days from the date on which notice of the decision was served on the person desiring to appeal; or

(b) in the case of an appeal under sub-section (1), the said period or the period specified in the improvement notice, whichever expires earlier. Explanation.-For the purpose of this sub-section, the making of the complaint shall be deemed to be the bringing of the appeal.

**33. Prohibition orders.** - (1) If- (a) any food business operator is convicted of an offence under this Act; and (b) the court by or before which he is so convicted is satisfied that the health risk exists with respect to that food business, the court, after giving the food business operator an opportunity of being heard, may by an order, impose the following prohibitions, namely :- (i) a prohibition on the use of the process or treatment for the purposes of the food business; (ii) a prohibition on the use of the premises or equipment for the purposes of the food business or any other food business of the same class or description; (iii) a prohibition on the use of the premises or equipment for the purposes of any food business.

(2) The court may, on being satisfied that it is necessary so to do, by an order, impose a prohibition on the food business operator participating in the management of any food business, or any food business of a class or description specified in the order.

(3) As soon as practicable after the making of an order under sub-section (1) or sub-section (2) (in this Act referred to as a "prohibition order"), the concerned Food Safety Officer shall- (a) serve a copy of the order on the food business operator; and

(b) in the case of an order under sub-section (1), affix a copy of the order at a conspicuous place on such premises used for the purposes of the food business,

and any person who knowingly contravenes such an order shall be guilty of an offence and be punishable with a fine which may extend to three lakh rupees.

(4) The concerned Food Safety Officer shall with the approval of the Designated Officer issue a certificate to the effect that the food business operator has taken sufficient measures justifying lifting of the prohibition order, within seven days of his being satisfied on an application made by the food business operator for such a certificate or the said officer shall- (a) determine, as soon as is reasonably practicable and in any event within fourteen days, whether or not he is so satisfied; and (b) if he determines that he is not so satisfied, give notice to the food business operator of the reasons for that determination.

(5) A prohibition order shall cease to have effect upon the court being satisfied, on an application made by the food business operator not less than six months after the prohibition order has been passed, that the food business operator has taken sufficient measures justifying the lifting of the prohibition order.

(6) The court shall give a direction on an application by the food business operator, if the court thinks it proper so to do having regard to all the circumstances of the case, including in particular, the conduct of the food business operator since the making of the order; but no such application shall be entertained if it is not made-

- (a) within six months after the making of the prohibition order; or
- (b) within three months after the making by the food business operator of a previous application for such a direction. Explanation.-For the purpose of this section,- (i) any reference above shall apply in relation to a manager of a food business as it applies in relation to the food business operator; and any reference to the food business operator of the business, or to the food business operator, shall be construed accordingly; (ii) "manager" , in relation to a food business, means any person who is entrusted by the food business operator with the day-to-day running of the business, or any part of the business.

**34. Emergency prohibition notices and orders.** - (1) If the Designated Officer is satisfied that the health risk condition exists with respect to any food business, he may, after a notice served on the food business operator (in this Act referred to as an "emergency prohibition notice"), apply to the Commissioner of Food Safety for imposing the prohibition.

(2) If the Commissioner of Food Safety is satisfied, on the application of such an officer, that the health risk condition exists with respect to any food business, he shall, by an order, impose the prohibition.

(3) The Designated Officer shall not apply for an emergency prohibition order unless, at least one day before the date of the application, he has served notice on the food business operator of the business of his intention to apply for the order.

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(4) As soon as practicable after the making of an emergency prohibition order, the Designated Officer shall require the Food Safety Officer to - (a) serve a copy of the order on the food business operator of the business; or (b) affix a copy of the order at a conspicuous place on such premises used for the purposes of that business; and any person who knowingly contravenes such an order shall be guilty of an offence and shall be punishable with imprisonment for a term which may extend to two years and with fine which may extend to two lakh rupees.

(5) An emergency prohibition order shall cease to have effect on the issue by the Designated Officer of a certificate to the effect that he is satisfied that the food business operator has taken sufficient measures for justifying the lifting of such order.

(6) The Designated Officer shall issue a certificate under sub-section (5) within seven days of an application by the food business operator for such a certificate and on his being not satisfied, the said officer shall give notice to the food business operator within a period of ten days indicating the reasons for such decision.

**35. Notification of food poisoning.** - The Food Authority may, by notification, require registered medical practitioners carrying on their profession in any local area specified in the notification, to report all occurrences of food poisoning coming to their notice to such officer as may be specified.

**36. Designated Officer.** - (1) The Commissioner of Food Safety shall, by order, appoint the Designated Officer, who shall not be below the rank of a Sub-Divisional Officer, to be in-charge of food safety administration in such area as may be specified by regulations.

(2) There shall be a Designated Officer for each district.

(3) The functions to be performed by the Designated Officer shall be as follows, namely:- (a) to issue or cancel licence of food business operators; (b) to prohibit the sale of any article of food which is in contravention of the provisions of this Act and rules and regulations made thereunder; (c) to receive report and samples of article of foods from Food Safety Officer under his jurisdiction and get them analysed; (d) to make recommendations to the Commissioner of Food Safety for sanction to launch prosecutions in case of contraventions punishable with imprisonment; (e) to sanction or launch prosecutions in cases of contraventions punishable with fine; (f) to maintain record of all inspections made by Food Safety Officers and action taken by them in the performance of their duties; (g) to get investigated any complaint which may be made in writing in respect of any contravention of the provisions of this Act and the rules and regulations made thereunder; (h) to investigate any complaint which may be made in writing against the Food Safety Officer; and (i) to perform such other duties as may be entrusted by the Commissioner of Food Safety.

**37. Food Safety Officer.** - (1) The Commissioner of Food Safety shall, by notification, appoint such persons as he thinks fit, having the qualifications prescribed by the Central Government, as Food Safety Officers for such local areas as he may assign to them for the purpose of performing functions under this Act and the rules and regulations made thereunder.

(2) The State Government may authorise any officer of the State Government having the qualifications prescribed under sub-section (1) to perform the functions of a Food Safety Officer within a specified jurisdiction.

**38. Powers of Food Safety Officer.** - (1) The Food Safety Officer may-

- (a) take a sample- (i) of any food, or any substance, which appears to him to be intended for sale, or to have been sold for human consumption; or (ii) of any article of food or substance which is found by him on or in any such premises; which he has reason to believe that it may be required as evidence in proceedings under any of the provisions of this Act or of the regulations or orders made thereunder; or
- (b) seize any article of food which appears to the Food Safety Officer to be in contravention of this Act or the regulations made thereunder; and
- (c) keep it in the safe custody of the food business operator such article of food after taking a sample; and in both cases send the same for analysis to a Food Analyst for the local area within which such sample has been taken: Provided that where the Food Safety Officer keeps such article in the safe custody of the food business operator, he may require the food business operator to execute a bond for a sum of money equal to the value of such article with one or more sureties as the Food Safety Officer deems fit and the food business operator shall execute the bond accordingly.

(2) The Food Safety Officer may enter and inspect any place where the article of food is manufactured, or stored for sale, or stored for the manufacture of any other article of food, or exposed or exhibited for sale and where any adulterant is manufactured or kept, and take samples of such articles of food or adulterant for analysis.

(3) Where any sample is taken, its cost calculated at the rate at which the article is usually sold to the public shall be paid to the person from whom it is taken.

(4) Where any article of food seized under clause (b) of sub-section (1) is of a perishable nature and the Food Safety Officer is satisfied that such article of food is so deteriorated that it is unfit for human consumption, the Food Safety Officer may, after giving notice in writing to the food business operator, cause the same to be destroyed.

(5) The Food Safety Officer shall, in exercising the powers of entry upon, and inspection of any place under this section, follow, as far as may be, the provisions

of the Code of Criminal Procedure, 1973 relating to the search or inspection of a place by a police officer executing a search warrant issued under that Code.

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(6) Any adulterant found in the possession of a manufacturer or distributor of, or dealer in, any article of food or in any of the premises occupied by him as such and for the possession of which he is unable to account to the satisfaction of the Food Safety Officer and any books of account or other documents found in his possession or control and which would be useful for, or relevant to, any investigation or proceeding under this Act, may be seized by the Food Safety Officer and a sample of such adulterant submitted for analysis to a Food Analyst: Provided that no such books of account or other documents shall be seized by the Food Safety Officer except with the previous approval of the authority to which he is subordinate.

(7) Where the Food Safety Officer takes any action under clause (a) of sub-section (1), or sub-section (2) or sub-section (4) or sub-section (6), he shall, call one or more persons to be present at the time when such action is taken and take his or their signatures.

(8) Where any books of account or other documents are seized under sub-section (6), the Food Safety Officer shall, within a period not exceeding thirty days from the date of seizure, return the same to the person from whom they were seized after copies thereof or extracts therefrom as certified by that person in such manner as may be prescribed by the Central Government have been taken: Provided that where such person refuses to so certify and a prosecution has been instituted against him under this Act, such books of account or other documents shall be returned to him only after copies thereof and extracts therefrom as certified by the court have been taken.

(9) When any adulterant is seized under sub-section (6), the burden of proving that such adulterant is not meant for purposes of adulteration shall be on the person from whose possession such adulterant was seized.

(10) The Commissioner of Food Safety may from time to time issue guidelines with regard to exercise of powers of the Food Safety Officer, which shall be binding: Provided that the powers of such Food Safety Officer may also be revoked for a specified period by the Commissioner of Food Safety.

**39. Liability of Food Safety Officer in certain cases.** - Any Food Safety Officer exercising powers under this Act or the rules and regulations made thereunder who- (a) vexatiously and without any reasonable ground seizes any article of food or adulterant; or (b) commits any other act to the injury of any person without having reason to believe that such act is necessary for the execution of his duty, shall be guilty of an offence under this Act and shall be liable to a penalty which may extend to one lakh rupees: Provided that in case any false complaint

is made against a Food Safety Officer and it is proved so, the complainant shall be guilty of an offence under this Act and shall be punishable with fine which shall not be less than fifty thousand rupees but may extend to one lakh rupees.

**40. Purchaser may have food analysed.** - (1) Nothing contained in this Act shall be held to prevent a purchaser of any article of food other than a Food Safety Officer from having such article analysed by the Food Analyst on payment of such fees and receiving from the Food Analyst a report of his analysis within such period as may be specified by regulations: Provided that such purchaser shall inform the food business operator at the time of purchase of his intention to have such article so analysed: Provided further that if the report of the Food Analyst shows that the article of food is not in compliance with the Act or the rules or regulations made thereunder, the purchaser shall be entitled to get refund of the fees paid by him under this section.

(2) In case the Food Analyst finds the sample in contravention of the provisions of this Act and rules and regulations made thereunder, the Food Analysts shall forward the report to the Designated Officer to follow the procedure laid down in section 42 for prosecution.

**41. Power of search, seizure, investigation, prosecution and procedure thereof.** - (1) Notwithstanding anything contained in sub-section (2) of section 31, the Food Safety Officer may search any place, seize any article of food or adulterant, if there is a reasonable doubt about them being involved in commission of any offence relating to food, and shall thereafter inform the Designated Officer of the actions taken by him in writing: Provided that no search shall be deemed to be irregular by reason only of the fact that witnesses for the search are not inhabitants of the locality in which the place searched is situated.

(2) Save as in this Act otherwise expressly provided, provisions of the Code of Criminal Procedure, 1973 relating to search, seizure, summon, investigation and prosecution, shall apply, as far as may be, to all action taken by the Food Safety Officer under this Act.

**42. Procedure for launching prosecution.** - (1) The Food Safety Officer shall be responsible for inspection of food business, drawing samples and sending them to Food Analyst for analysis.

(2) The Food Analyst after receiving the sample from the Food Safety Officer shall analyse the sample and send the analysis report mentioning method of sampling and analysis within fourteen days to Designated Officer with a copy to Commissioner of Food Safety.

(3) The Designated Officer after scrutiny of the report of Food Analyst shall decide as to whether the contravention is punishable with imprisonment or fine only

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and in the case of contravention punishable with imprisonment, he shall send his recommendations within fourteen days to the Commissioner of Food Safety for sanctioning prosecution.

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(4) The Commissioner of Food Safety shall, if he so deems fit, decide, within the period prescribed by the Central Government, as per the gravity of offence, whether the matter be referred to,- (a) a court of ordinary jurisdiction in case of offences punishable with imprisonment for a term up to three years; or (b) a Special Court in case of offences punishable with imprisonment for a term exceeding three years where such Special Court is established and in case no Special Court is established, such cases shall be tried by a court of ordinary jurisdiction.

(5) The Commissioner of Food Safety shall communicate his decision to the Designated Officer and the concerned Food Safety Officer who shall launch prosecution before courts of ordinary jurisdiction or Special Court, as the case may be; and such communication shall also be sent to the purchaser if the sample was taken under section 40.

## ANALYSIS OF FOOD

**43. Recognition and accreditation of laboratories, research institutions and referral food laboratory.** - (1) The Food Authority may notify food laboratories and research institutions accredited by National Accreditation Board for Testing and Calibration Laboratories or any other accreditation agency for the purposes of carrying out analysis of samples by the Food Analysts under this Act.

(2) The Food Authority shall, establish or recognise by notification, one or more referral food laboratory or laboratories to carry out the functions entrusted to the referral food laboratory by this Act or any rules and regulations made thereunder.

(3) The Food Authority may frame regulations specifying-

- (a) the functions of food laboratory and referral food laboratory and the local area or areas within which such functions may be carried out;
- (b) the procedure for submission to the said laboratory of samples of articles of food for analysis or tests, the forms of the laboratory's reports thereon and the fees payable in respect of such reports; and
- (c) such other matters as may be necessary or expedient to enable the said laboratory to carry out its functions effectively.

**44. Recognition of organisation or agency for food safety audit.** - The Food Authority may recognise any organisation or agency for the purposes of food safety audit and checking compliance with food safety management systems required under this Act or the rules and regulations made thereunder.

**45. Food Analysts.** - The Commissioner of Food Safety may, by notification, appoint such persons as he thinks fit, having the qualifications prescribed by the Central

Government, to be Food Analysts for such local areas as may be assigned to them by the Commissioner of Food Safety: Provided that no person, who has any financial interest in the manufacture or sale of any article of food shall be appointed to be a Food Analyst under this section: Provided further that different Food Analysts may be appointed for different articles of food.

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**46. Functions of Food Analyst.** - (1) On receipt of a package containing a sample for analysis from a Food Safety Officer or any other person, the Food Analyst shall compare the seal on the container and the outer cover with specimen impression received separately and shall note the conditions of the seal thereon: Provided that in case a sample container received by the Food Analyst is found to be in broken condition or unfit for analysis, he shall within a period of seven days from the date of receipt of such sample inform the Designated Officer about the same and send requisition to him for sending second part of the sample.

(2) The Food Analyst shall cause to be analysed such samples of article of food as may be sent to him by Food Safety Officer or by any other person authorised under this Act.

(3) The Food Analyst shall, within a period of fourteen days from the date of receipt of any sample for analysis, send- (i) where such sample is received under section 38 or section 47, to the Designated Officer, four copies of the report indicating the method of sampling and analysis; and (ii) where such sample is received under section 40, a copy of the report indicating the method of sampling and analysis to the person who had purchased such article of food with a copy to the Designated Officer: Provided that in case the sample can not be analysed within fourteen days of its receipt, the Food Analyst shall inform the Designated Officer and the Commissioner of Food Safety giving reasons and specifying the time to be taken for analysis.

(4) An appeal against the report of Food Analyst shall lie before the Designated Officer who shall, if he so decides, refer the matter to the referral food laboratory as notified by the Food Authority for opinion.

**47. Sampling and analysis.** - (1) When a Food Safety Officer takes a sample of food for analysis, he shall -

- (a) give notice in writing of his intention to have it so analysed to the person from whom he has taken the sample and to the person, if any, whose name, address and other particulars have been disclosed;
- (b) except in special cases as may be provided by rules made under this Act, divide the sample into four parts and mark and seal or fasten up each part in such a manner as its nature permits and take the signature or thumb impression of the person from whom the sample has been taken in such place and in such manner as may be prescribed by the Central

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Government: Provided that where such person refuses to sign or put his thumb impression, the Food Safety Officer shall call upon one or more witnesses and take his signature or thumb impression, in lieu of the signature or thumb impression of such person;

- (c) (i) send one of the parts for analysis to the Food Analyst under intimation to the Designated Officer; (ii) send two parts to the Designated Officer for keeping these in safe custody; and (iii) send the remaining part for analysis to an accredited laboratory, if so requested by the food business operator, under intimation to the Designated Officer: Provided that if the test reports received under sub-clauses (i) and (iii) are found to be at variance, then the Designated Officer shall send one part of the sample kept in his custody, to referral laboratory for analysis, whose decision thereon shall be final.
- (2) When a sample of any article of food or adulterant is taken, the Food Safety Officer shall, by the immediate succeeding working day, send the sample to the Food Analyst for the area concerned for analysis and report.
- (3) Where the part of the sample sent to the Food Analyst is lost or damaged, the Designated Officer shall, on a requisition made to him, by the Food Analyst or the Food Safety Officer, despatch one of the parts of the sample sent to him, to the Food Analyst for analysis.
- (4) An article of food or adulterant seized, unless destroyed, shall be produced before the Designated Officer as soon as possible and in any case not later than seven days after the receipt of the report of the Food Analyst: Provided that if an application is made to the Designated Officer in this behalf by the person from whom any article of food has been seized, the Designated Officer shall by order in writing direct the Food Safety Officer to produce such article before him within such time as may be specified in the order.
- (5) In case of imported articles of food, the authorised officer of the Food Authority shall take its sample and send to the Food Analyst of notified laboratory for analysis who shall send the report within a period of five days to the authorised officer.
- (6) The Designated Officer, the Food Safety Officer, the authorised officer and the Food Analyst shall follow such procedure as may be specified by regulations.

## OFFENCES AND PENALTIES

48. General provisions relating to offences. -(1) A person may render any article of food injurious to health by means of one or more of the following operations, namely:-

- (a) adding any article or substance to the food;
- (b) using any article or substance as an ingredient in the preparation of the food;

- (c) abstracting any constituents from the food; or
- (d) subjecting the food to any other process or treatment, with the knowledge that it may be sold or offered for sale or distributed for human consumption.

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(2) In determining whether any food is unsafe or injurious to health, regard shall be had to-

- (a) (i) the normal conditions of use of the food by the consumer and its handling at each stage of production, processing and distribution; (ii) the information provided to the consumer, including information on the label, or other information generally available to the consumer concerning the avoidance of specific adverse health effects from a particular food or category of foods not only to the probable, immediate or short-term or long-term effects of that food on the health of a person consuming it, but also on subsequent generations; (iii) to the probable cumulative toxic effects; (iv) to the particular health sensitivities of a specific category of consumers where the food is intended for that category of consumers; and (v) also to the probable cumulative effect of food of substantially the same composition on the health of a person consuming it in ordinary quantities;
- (b) the fact where the quality or purity of the article, being primary food, has fallen below the specified standard or its constituents are present in quantities not within the specified limits of variability, in either case, solely due to natural causes and beyond the control of human agency, then such article shall not be deemed to be unsafe or sub-standard or food containing extraneous matter. *Explanation.*- For the purposes of this section, "injury", includes any impairment, whether permanent or temporary, and "injurious to health" shall be construed accordingly.

**49. General provisions relating to penalty.** - While adjudging the quantum of penalty under this Chapter, the Adjudicating Officer or the Tribunal, as the case may be, shall have due regard to the following:-

- (a) the amount of gain or unfair advantage, wherever quantifiable, made as a result of the contravention,
- (b) the amount of loss caused or likely to cause to any person as a result of the contravention,
- (c) the repetitive nature of the contravention,
- (d) whether the contravention is without his knowledge, and
- (e) any other relevant factor.

**50. Penalty for selling food not of the nature or substance or quality demanded.** - Any person who sells to the purchaser's prejudice any food which is not in

compliance with the provisions of this Act or the regulations made thereunder, or of the nature or substance or quality demanded by the purchaser, shall be liable to a penalty not exceeding five lakh rupees.

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Provided that the persons covered under sub-section (2) of section 31, shall for such non-compliance be liable to a penalty not exceeding twenty five thousand rupees.

**51. Penalty for sub-standard food.** - Any person who whether by himself or by any other person on his behalf manufactures for sale or stores or sells or distributes or imports any article of food for human consumption which is sub-standard, shall be liable to a penalty which may extend to five lakh rupees.

**52. Penalty for misbranded food.** - (1) Any person who whether by himself or by any other person on his behalf manufactures for sale or stores or sells or distributes or imports any article of food for human consumption which is misbranded, shall be liable to a penalty which may extend to three lakh rupees.

(2) The Adjudicating Officer may issue a direction to the person found guilty of an offence under this section, for taking corrective action to rectify the mistake or such article of food shall be destroyed.

**53. Penalty for misleading advertisement.** - (1) Any person who publishes, or is a party to the publication of an advertisement, which- (a) falsely describes any food; or (b) is likely to mislead as to the nature or substance or quality of any food or gives false guarantee, shall be liable to a penalty which may extend to ten lakh rupees.

(2) In any proceeding the fact that a label or advertisement relating to any article of food in respect of which the contravention is alleged to have been committed contained an accurate statement of the composition of the food shall not preclude the court from finding that the contravention was committed.

**54. Penalty for food containing extraneous matter.** - Any person whether by himself or by any other person on his behalf manufactures for sale or stores or sells or distributes or imports any article of food for human consumption containing extraneous matter, shall be liable to a penalty which may extend to one lakh rupees.

**55. Penalty for failure to comply with the directions of Food Safety Officer.** - If a food business operator or importer without reasonable ground, fails to comply with the requirements of this Act or the rules or regulations or orders issued thereunder, as directed by the Food Safety Officer, he shall be liable to a penalty which may extend to two lakh rupees.

**56. Penalty for unhygienic or unsanitary processing or manufacturing of food.** - Any person who, whether by himself or by any other person on his behalf,

manufactures or processes any article of food for human consumption under unhygienic or unsanitary conditions, shall be liable to a penalty which may extend to one lakh rupees.

**57. Penalty for possessing adulterant.** - (1) Subject to the provisions of this Chapter, if any person who whether by himself or by any other person on his behalf, imports or manufactures for sale, or stores, sells or distribute any adulterant shall be liable- (i) where such adulterant is not injurious to health, to a penalty not exceeding two lakh rupees; (ii) where such adulterant is injurious to health, to a penalty not exceeding ten lakh rupees.

(2) In a proceeding under sub-section (1), it shall not be a defence that the accused was holding such adulterant on behalf of any other person.

**58. Penalty for contraventions for which no specific penalty is provided.** - Whoever contravenes any provisions of this Act or the rules or regulations made thereunder, for the contravention of which no penalty has been separately provided in this Chapter, shall be liable to a penalty which may extend to two lakh rupees.

**59. Punishment for unsafe food.** - Any person who, whether by himself or by any other person on his behalf, manufactures for sale or stores or sells or distributes or imports any article of food for human consumption which is unsafe, shall be punishable,- (i) where such failure or contravention does not result in injury, with imprisonment for a term which may extend to six months and also with fine which may extend to one lakh rupees; (ii) where such failure or contravention results in a non-grievous injury, with imprisonment for a term which may extend to one year and also with fine which may extend to three lakh rupees; (iii) where such failure or contravention results in a grievous injury, with imprisonment for a term which may extend to six years and also with fine which may extend to five lakh rupees; (iv) where such failure or contravention results in death, with imprisonment for a term which shall not be less than seven years but which may extend to imprisonment for life and also with fine which shall not be less than ten lakh rupees.

**60.** If a person without the permission of the Food Safety Officer, retains, removes or tampers with any food, vehicle, equipment, package or labelling or advertising material or other thing that has been seized under this Act, he shall be punishable with imprisonment for a term which may extend to six months and also with fine which may extend to two lakh rupees.

**61. Punishment for false information.** - If a person, in connection with a requirement or direction under this Act, provides any information or produces any document that the person knows is false or misleading, he shall be punishable with imprisonment for a term which may extend to three months and also with fine which may extend to two lakh rupees.

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**62. Punishment for obstructing or impersonating a Food Safety Officer.** - If a person without reasonable excuse, resists, obstructs, or attempts to obstruct, impersonate, threaten, intimidate or assault a Food Safety Officer in exercising his functions under this Act, he shall be punishable with imprisonment for a term which may extend to three months and also with fine which may extend to one lakh rupees.

**63. Punishment for carrying out a business without licence.** - If any person or food business operator (except the persons exempted from licensing under subsection (2) of section 31 of this Act), himself or by any person on his behalf who is required to obtain licence, manufacturers, sells, stores or distributes or imports any article of food without licence, shall be punishable with imprisonment for a term which may extend to six months and also with a fine which may extend to five lakh rupees.

**64. Punishment for subsequent offences.** - (1) If any person, after having been previously convicted of an offence punishable under this Act subsequently commits and is convicted of the same offence, he shall be liable to- (i) twice the punishment, which might have been imposed on a first conviction, subject to the punishment being maximum provided for the same offence; (ii) a further fine on daily basis which may extend up to one lakh rupees, where the offence is a continuing one; and (iii) his licence shall be cancelled.

(2) The Court may also cause the offender's name and place of residence, the offence and the penalty imposed to be published at the offender's expense in such newspapers or in such other manner as the court may direct and the expenses of such publication shall be deemed to be part of the cost attending the conviction and shall be recoverable in the same manner as a fine.

**65. Compensation in case of injury or death of consumer.** - (1) Without prejudice to the other provisions of this Chapter, if any person whether by himself or by any other person on his behalf, manufactures or distributes or sells or imports any article of food causing injury to the consumer or his death, it shall be lawful for the Adjudicating Officer or as the case may be, the court to direct him to pay compensation to the victim or the legal representative of the victim, a sum-

- (a) not less than five lakh rupees in case of death;
- (b) not exceeding three lakh rupees in case of grievous injury; and
- (c) not exceeding one lakh rupees, in all other cases of injury: Provided that the compensation shall be paid at the earliest and in no case later than six months from the date of occurrence of the incident: Provided further that in case of death, an interim relief shall be paid to the next of the kin within thirty days of the incident.

(2) Where any person is held guilty of an offence leading to grievous injury or death, the Adjudicating Officer or the court may cause the name and place of residence of the person held guilty, the offence and the penalty imposed to be published at the offender's expense in such newspapers or in such other manner as the Adjudicating Officer or the court may direct and the expenses of such publication shall be deemed to be part of the cost attending the conviction and shall be recoverable in the same manner as a fine.

(3) The Adjudicating Officer or the court may also,-

- (a) order for cancellation of licence, re-call of food from market, forfeiture of establishment and property in case of grievous injury or death of consumer;
- (b) issue prohibition orders in other cases.

**66. Offences by companies.** - (1) Where an offence under this Act which has been committed by a company, every person who at the time the offence was committed was in charge of, and was responsible to, the company for the conduct of the business of the company, as well as the company, shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly: Provided that where a company has different establishments or branches or different units in any establishment or branch, the concerned Head or the person in-charge of such establishment, branch, unit nominated by the company as responsible for food safety shall be liable for contravention in respect of such establishment, branch or unit: Provided further that nothing contained in this sub-section shall render any such person liable to any punishment provided in this Act, if he proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence.

(2) Notwithstanding anything contained in sub-section (1), where an offence under this Act has been committed by a company and it is proved that the offence has been committed with the consent or connivance of or is attributable to any neglect on the part of, any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer shall also be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly. Explanation.-For the purpose of this section,- (a) "company" means any body corporate and includes a firm or other association of individuals; and (b) "director", in relation to a firm, means a partner in the firm.

**67. Penalty for contravention of provisions of this Act in case of import of articles of food to be in addition to penalties provided under any other Act.** - (1) Any person who imports any article of food which is in contravention of the provisions of this Act, rules and regulations made thereunder, shall, in addition to any penalty to which he may be liable under the provisions of the Foreign Trade (Development

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and Regulation) Act, 1992 and the Customs Act, 1962 be also liable under this Act and shall be proceeded against accordingly.

(2) Any such article of food shall be destroyed or returned to the importer, if permitted by the competent authority under the Foreign Trade (Development and Regulation) Act, 1992 or the Customs Act, 1962, or any other Act, as the case may be.

**ADJUDICATION AND FOOD SAFETY APPELLATE TRIBUNAL**

**68. Adjudication.** - (1) For the purposes of adjudication under this Chapter, an officer not below the rank of Additional District Magistrate of the district where the alleged offence is committed, shall be notified by the State Government as the Adjudicating Officer for adjudication in the manner as may be prescribed by the Central Government.

(2) The Adjudicating Officer shall, after giving the person a reasonable opportunity for making representation in the matter, and if, on such inquiry, he is satisfied that the person has committed the contravention of provisions of this Act or the rules or the regulations made thereunder, impose such penalty as he thinks fit in accordance with the provisions relating to that offence.

(3) The Adjudicating Officer shall have the powers of a civil court and- (a) all proceedings before him shall be deemed to be judicial proceedings within the meaning of sections 193 and 228 of the Indian Penal Code; (b) shall be deemed to be a court for the purposes of sections 345 and 346 of the Code of Criminal Procedure, 1973.

(4) While adjudicating the quantum of penalty under this Chapter, the Adjudicating Officer shall have due regard to the guidelines specified in section 49.

**69. Power to compound offences.** - (1) The Commissioner of Food Safety may, by order, empower the Designated Officer, to accept from petty manufacturers who himself manufacture and sell any article of food, retailers, hawkers, itinerant vendors, temporary stall holders against whom a reasonable belief exists that he has committed an offence or contravention against this Act, payment of a sum of money by way of composition of the offence which such person is suspected to have committed.

(2) On the payment of such sum of money to such officer, the suspected person, if in custody, shall be discharged and no further proceedings in respect of the offence shall be taken against such person.

(3) The sum of money accepted or agreed to be accepted as composition under sub-section (1), shall not be more than one lakh rupees and due regard shall be made to the guidelines specified in section 49: Provided that no offence, for which

punishment of imprisonment has been prescribed under this Act, shall be compounded.

**70. Establishment of Food Safety Appellate Tribunal.** - (1) The Central Government or as the case may be, the State Government may, by notification, establish one or more tribunals to be known as the Food Safety Appellate Tribunal to hear appeals from the decisions of the Adjudicating Officer under section 68.

(2) The Central Government or the State Government, as the case may be, shall prescribe, the matters and areas in relation to which the Tribunal may exercise jurisdiction.

(3) The Tribunal shall consist of one person only (hereinafter referred to as the Presiding Officer of the Tribunal) to be appointed, by notification, by the Central Government or the State Government, as the case may be: Provided that no person shall be qualified for appointment as a Presiding Officer to the Tribunal unless he is or has been a District Judge.

(4) The qualifications, appointment, term of office, salary and allowances, resignation and removal of the Presiding Officer shall be such as may be prescribed by the Central Government.

(5) The procedure of appeal and powers of the Tribunal shall be such as may be prescribed by the Central Government.

**71. Procedure and powers of Tribunal.** - (1) The Tribunal shall not be bound by the procedure laid down by the Code of Civil Procedure, 1908 but shall be guided by the principles of natural justice and, subject to the other provisions of this Act and the rules made thereunder, the Tribunal shall have powers to regulate its own procedure including the place at which it shall have its sittings.

(2) The Tribunal shall have, for the purposes of discharging its functions under this Act, the same powers as are vested in a civil court under the Code of Civil Procedure, 1908, while trying a suit, in respect of the following matters, namely:-

(a) summoning and enforcing the attendance of any person and examining him on oath; (b) requiring the discovery and production of documents or other electronic records; (c) receiving evidence on affidavits; (d) issuing commissions for the examination of witnesses or documents; (e) reviewing its decisions; (f) dismissing an application for default or deciding it ex parte; (g) any other matter which may be prescribed by the Central Government.

(3) Every proceeding before the Tribunal shall be deemed to be a judicial proceeding within the meaning of sections 193 and 228, and for the purposes of section 196 of the Indian Penal Code, it shall be deemed to be a civil court for all the purposes of section 195 and Chapter XXVI of the Code of Criminal Procedure, 1973.

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(4) The appellant may either appear in person or authorise one or more legal practitioners or any of its officers to represent his case before the Tribunal.

(5) The provisions of the Limitation Act, 1963, shall, except as otherwise provided in this Act, apply to an appeal made to the Tribunal.

(6) Any person aggrieved by any decision or order of the Tribunal may file an appeal to the High Court within sixty days from the date of communication of the decision or order of the Tribunal to him on any question of fact or law arising out of such order: Provided that the High Court may, if it is satisfied that the appellant was prevented by sufficient cause from filing the appeal within the said period, allow it to be filed within a further period not exceeding sixty days.

**72. Civil court not to have jurisdiction.** - No civil court shall have jurisdiction to entertain any suit or proceeding in respect of any matter which an Adjudicating Officer or the Tribunal is empowered by or under this Act to determine and no injunction shall be granted by any court or other authority in respect of any action taken or to be taken in pursuance of any power conferred by or under this Act.

**73. Power of court to try cases summarily.** - Notwithstanding anything contained in the Code of Criminal Procedure, 1973, all offences not triable by a Special Court, shall be tried in a summary way by a Judicial Magistrate of the first class or by a Metropolitan Magistrate and the provisions of sections 262 to 265 (both inclusive) of the said Code shall, as far as may be, apply to such a trial: Provided that in the case of any conviction in a summary trial under this section, it shall be lawful for the Magistrate to pass a sentence of imprisonment for a term not exceeding one year: Provided further that when at the commencement of, or in the course of, a summary trial under this section, it appears to the Magistrate that the nature of the case is such that a sentence of imprisonment for a term exceeding one year may have to be passed or that it is, for any other reason, undesirable to try the case summarily, the Magistrate shall after hearing the parties, record an order to that effect and thereafter recall any witness who may have been examined and proceed to hear or rehear the case in the manner provided by the said Code.

**74. Special courts and Public Prosecutor.** - (1) Notwithstanding anything contained in this Act or in the Code of Criminal Procedure, 1973, the Central Government or the State Government in their respective jurisdictions may, if consider expedient and necessary in the public interest, for the purposes of the trial of offences relating to grievous injury or death of the consumer for which punishment of imprisonment for more than three years has been prescribed under this Act, constitute, by notification in the Official Gazette, as many Special Courts with the concurrence of the Chief Justice of the High Court as may be necessary for such area or areas and for exercising such jurisdiction, as may be specified in the notification.

(2) A Special Court may, on its own motion, or on an application made by the Public Prosecutor and if it considers it expedient or desirable so to do, sit for any of its proceedings at any place other than its ordinary place of sitting.

(3) The trial under this Act of any offence by a Special Court shall have precedence over the trial of any other case against the accused in any other court (not being a Special Court) and shall be concluded in preference to the trial of such other case and accordingly the trial of such other case shall remain in abeyance.

(4) For every Special Court, the Central Government or the State Government, as the case may be, shall appoint a person to be the Public Prosecutor and may appoint more than one person to be the Additional Public Prosecutors: Provided that the Central Government or the State Government, as the case may be, may also appoint for any case or class or group of cases, a Special Public Prosecutor.

(5) A person shall not be qualified to be appointed as a Public Prosecutor or an Additional Public Prosecutor or a Special Public Prosecutor under this section unless he has been in practice as an Advocate for not less than seven years or has held any post, for a period of not less than seven years, under the Union or a State, requiring special knowledge of law.

**75. Power to transfer cases to regular courts.** - Where, after taking cognizance of any offence, a Special Court is of the opinion that the offence is not triable by it, it shall, notwithstanding that it has no jurisdiction to try such offence, transfer the case for the trial of such offence to any court having jurisdiction under the Code of Criminal Procedure, 1973 and the court to which the case is transferred may proceed with the trial of the offence as if it had taken cognizance of the offence.

**76. Appeal.** - (1) Any person aggrieved by a decision or order of a Special Court may, on payment of such fee as may be prescribed by the Central Government and after depositing the amount, if any, imposed by way of penalty, compensation or damage under this Act, within forty-five days from the date on which the order was served, prefer an appeal to the High Court: Provided that the High Court may entertain any appeal after the expiry of the said period of forty-five days, if it is satisfied that the appellant was prevented by sufficient cause for filing the appeal within the said period.

(2) An appeal preferred under this section shall be disposed of by the High Court by a bench of not less than two judges.

**77. Time limit for prosecutions.** - Notwithstanding anything contained in this Act, no court shall take cognizance of an offence under this Act after the expiry of the period of one year from the date of commission of an offence: Provided that the Commissioner of Food Safety may, for reasons to be recorded in writing, approve prosecution within an extended period of up to three years.

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**78. Power of court to implead manufacturer, etc.** - Where at any time during the trial of any offence under this Act alleged to have been committed by any person, not being the importer, manufacturer, distributor or dealer of any article of food, the court, is satisfied, on the evidence adduced before it, that such importer, manufacturer, distributor or dealer is also concerned with that offence, then the court may, notwithstanding anything contained in sub-section (3) of section 319 of the Code of Criminal Procedure, 1973, or in section 71 of this Act, proceed against him as though a prosecution has been instituted under this Act.

**79. Magistrate's power to impose enhanced punishment.** - Notwithstanding anything contained in section 29 of the Code of Criminal Procedure, 1973, it shall be lawful for the court of ordinary jurisdiction to pass any sentence authorised by this Act, except a sentence of imprisonment for a term exceeding six years in excess of his powers under the said section.

**80. Defences which may or may not be allowed in prosecution under this Act.** -

*(A) Defence relating to publication of advertisements-*

(1) In any proceeding for an offence under this Act in relation to the publication of an advertisement, it is a defence for a person to prove that the person carried on the business of publishing or arranging for the publication of advertisements and that the person published or arranged for the publication of the advertisement in question in the ordinary course of that business.

(2) Clause (1) does not apply if the person- (a) should reasonably have known that the publication of the advertisement was an offence; or (b) had previously been informed in writing by the relevant authority that publication of such an advertisement would constitute an offence; or (c) is the food business operator or is otherwise engaged in the conduct of a food business for which the advertisements concerned were published.

*(B) Defence of due diligence-*

(1) In any proceedings for an offence, it is a defence if it is proved that the person took all reasonable precautions and exercised all due diligence to prevent the commission of the offence by such person or by another person under the person's control.

(2) Without limiting the ways in which a person may satisfy the requirements of clause (1), a person satisfies those requirements if it is proved- (a) that the commission of the offence was due to- (i) an act or default of another person; or (ii) reliance on information supplied by another person; and (b) (i) the person carried out all such checks of the food concerned as were reasonable in all the circumstances; or (ii) it was reasonable in all the circumstances to rely on checks carried out by the person who supplied such food to the person; and (c) that the person did not import the food into the jurisdiction from another country; and

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(d) in the case of an offence involving the sale of food, that- (i) the person sold the food in the same condition as and when the person purchased it; or (ii) the person sold the food in a different condition to that in which the person purchased it, but that the difference did not result in any contravention of this Act or the rules and regulations made thereunder; and (e) that the person did not know and had no reason to suspect at the time of commission of the alleged offence that the person's act or omission would constitute an offence under the relevant section.

(3) In sub-clause (a) of clause (2), another person does not include a person who was- (a) an employee or agent of the defendant; or (b) in the case of a defendant which is a company, a director, employee or agent of that company.

(4) Without limiting the ways in which a person may satisfy the requirements of clause (1) and item (i) of sub-clause (b) of clause (2), a person may satisfy those requirements by proving that- (a) in the case of an offence relating to a food business for which a food safety programme is required to be prepared in accordance with the regulations, the person complied with a food safety programme for the food business that complies with the requirements of the regulations, or (b) in any other case, the person complied with a scheme (for example, a quality assurance programme or an industry code of practice) that was- (i) designed to manage food safety hazards and based on national or international standards, codes or guidelines designed for that purpose, and (ii) documented in some manner.

(C) *Defence of mistaken and reasonable belief not available*- In any proceedings for an offence under the provisions of this Act, it is no defence that the defendant had a mistaken but reasonable belief as to the facts that constituted the offence.

(D) *Defence in respect of handling food*- In proceedings for an offence under section 56, it is a defence if it is proved that the person caused the food to which the offence relates to be destroyed or otherwise disposed of immediately after the food was handled in the manner that was likely to render it unsafe.

(E) *Defences of significance of the nature, substance or quality of food*- It shall be no defence in a prosecution for an offence pertaining to the sale of any unsafe or misbranded article of food to allege merely that the food business operator was ignorant of the nature, substance or quality of the food sold by him or that the purchaser having purchased any article for analysis was not prejudiced by the sale.

## FINANCE, ACCOUNTS, AUDIT AND REPORTS

**81. Budget of Food Authority.** - (1) The Food Authority shall prepare, in such form and at such time in each financial year as may be prescribed by the Central Government, its budget for the next financial year, showing the estimated receipts and expenditure of the Food Authority and forward the same to the Central Government.

(2) The Food Authority with the prior approval of the Central Government, shall adopt financial regulation which specifies in particular, the procedure for drawing up and implementing the Authority's budget.

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**82. Finances of the Food Authority.** - (1) The Central Government may, after due appropriation, make to the Food Authority grants of such sums of money as the Central Government may think fit.

(2) The Food Authority on the recommendation of the Central Advisory Committee shall specify a graded fee from licensed food business operators, accredited laboratories or food safety auditors to be charged by the Commissioner of Food Safety.

**83. Accounts and audit of Food Authority.** - (1) The Food Authority shall maintain proper accounts and relevant records and prepare an annual statement of accounts in such form as may be prescribed by the Central Government in consultation with the Comptroller and Auditor-General of India.

(2) The Comptroller and Auditor-General and any person appointed by him in connection with the audit of the accounts of the Food Authority under this Act shall have the same rights and privileges and authority in connection with such audit as the Comptroller and Auditor-General generally has in connection with the audit of Government accounts and, in particular, shall have the right to demand the production of books, accounts, connected vouchers and other documents and papers and to inspect any of the offices of the Food Authority.

(3) The accounts of the Food Authority, as certified by the Comptroller and Auditor-General or any other person appointed by him in this behalf, together with the audit report thereon shall be forwarded annually to the Central Government by the Food Authority and the Central Government shall cause the audit report to be laid, as soon as may be after it is received, before each House of Parliament.

**84. Annual report of Food Authority.** - (1) The Food Authority shall prepare once every year, in such form and at such time as may be prescribed by the Central Government, an annual report giving a summary of its activities during the previous year and copies of the report shall be forwarded to the Central Government and State Governments.

(2) A copy of the report received under sub-section (1) shall be laid, as soon as may be after it is received, before each House of Parliament.

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**85. Power of Central Government to issue directions to Food Authority and obtain reports and returns.**- (1) Without prejudice to the foregoing provisions of this Act, the Food Authority shall, in exercise of its powers and in performance of its

functions under this Act, be bound by such directions on questions of policy, other than those relating to technical and administrative matters, as the Central Government may give in writing to it from time to time: Provided that the Food Authority shall, as far as practicable, be given an opportunity to express its views before any direction is given under this sub-section.

(2) If any dispute arises between the Central Government and the Food Authority as to whether a question is or is not a question of policy, the decision of the Central Government thereon shall be final.

(3) The Food Authority shall furnish to the Central Government such returns or other information with respect to its activities as the Central Government may, from time to time, require.

**86. Power of Central Government to give directions to State Governments.** - The Central Government may give such directions, as it may deem necessary, to a State Government for carrying out all or any of the provisions of this Act and the State Government shall comply with such directions.

**87. Members, officers of Food Authority and Commissioner of Food Safety to be public servants.** - The Members, officers of the Food Authority and the Commissioners of Food Safety and their officers shall be deemed, when acting or purporting to act in pursuance of any of the provisions of this Act, to be public servants within the meaning of section 21 of the Indian Penal Code.

**88. Protection of action taken in good faith.** - No suit, prosecution or other legal proceedings shall lie against the Central Government, the State Government, the Food Authority and other bodies constituted under this Act or any officer of the Central Government, the State Government or any member, officer or other employee of such Authority and bodies or any other officer acting under this Act for anything which is in good faith done or intended to be done under this Act or the rules or regulations made thereunder.

**89. Overriding effect of this Act over all other food related laws.** - The provisions of this Act shall have effect notwithstanding anything inconsistent therewith contained in any other law for the time being in force or in any instrument having effect by virtue of any law other than this Act.

**90. Transfer of existing employees of Central Government Agencies governing various food related Acts or Orders to Food Authority.** - On and from the date of establishment of the Food Authority, every employee holding office under the Central Government Agencies administering food laws immediately before that date shall hold his office in the Food Authority by the same tenure and upon the same terms and conditions of service including remuneration, leave, provident fund, retirement and other terminal benefits as he would have held such office if

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the Food Authority had not been established and shall continue to do so as an employee of the Food Authority or until the expiry of the period of six months from that date if such employee opts not to be the employee of the Food Authority.

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**91. Power of Central Government to make rules.** - (1) The Central Government may, by notification in the Official Gazette, make rules for carrying out the provisions of this Act.

(2) In particular, and without prejudice to the generality of the foregoing power, such rules may provide for all or any of the following matters, namely:-

- (a) salary, terms and conditions of service of Chairperson and Members other than ex officio Members under sub-section (2) and the manner of subscribing to an oath of office and secrecy under sub-section (3) of section 7;
- (b) qualifications of Food Safety Officer under sub-section (1) of section 37;
- (c) the manner of taking the extract of documents seized under sub-clause (8) of section 38;
- (d) determination of cases for referring to appropriate courts and time-frame for such determination under sub-section (4) of section 42; (e) qualifications of Food Analysts under section 45;
- (f) the manner of sending sample for analysis and details of the procedure to be followed in this regard under sub-section (1) of section 47;
- (g) the procedure to be followed in adjudication of cases under sub-section (1) of section 68;
- (h) qualifications, terms of office, resignation and removal of Presiding Officer under sub-section (4), the procedure of appeal and powers of Tribunal under sub-section (5) of section 70;
- (i) any other matter relating to procedure and powers of Tribunal under clause (g) of sub-section (2) of section 71;
- (j) the fee to be paid for preferring an appeal to the High Court under sub-section (1) of section 76;
- (k) form and time of preparing budget under sub-section (1) of section 81;
- (l) form and statement of accounts under sub-section (1) of section 83;
- (m) the form and time for preparing annual report by Food Authority under sub-section (1) of section 84; and (n) any other matter which is required to be, or may be, prescribed or in respect of which provision is to be made by rules by the Central Government.

**92. Power of Food Authority to make regulations.** - (1) The Food Authority may, with the previous approval of the Central Government and after previous publication, by notification, make regulations consistent with this Act and the rules made thereunder to carry out the provisions of this Act.

(2) In particular, and without prejudice to the generality of the foregoing power, such regulations may provide for all or any of the following matters, namely:-

- (a) salaries and other conditions of service of officers and other employees of the Food Authority under sub-section (3) of section 9;
- (b) rules of procedure for transaction of business under sub-section (5) of section 11;
- (c) other functions of the Central Advisory Committee under sub-section (2) of section 12;
- (d) procedure of Scientific Committee and Panels under sub-section (4) of section 15;
- (e) notifying standards and guidelines in relation to articles of food meant for human consumption under sub-section (2) of section 16;
- (f) procedure to be followed by Food Authority for transaction of business at its meetings under sub-section (1) of section 17;
- (g) making or amending regulations in view of urgency concerning food safety or public health under clause (d) of sub-section (2) of section 18; (h) limits of additives under section 19; (i) limits of quantities of contaminants, toxic substance and heavy metals, etc., under section 20; (j) tolerance limit of pesticides, veterinary drugs residues, etc., under section 21; (k) the manner of marking and labelling of foods under section 23;
- (l) form in which guarantee shall be given under sub-section (4) of section 26;
- (m) conditions and guidelines relating to food recall procedures under sub-section (4) of section 28;
- (n) regulations relating to functioning of Food Safety Officer under sub-section (5) of section 29; (o) notifying the registering authority and the manner of registration; the manner of making application for obtaining licence, the fees payable therefor and the circumstances under which such licence may be cancelled or forfeited under section 31;
- (p) the respective areas of which the Designated Officer shall be in-charge for food safety administration under sub-section (1) of section 36;
- (q) procedure in getting food analysed, details of fees, etc., under sub-section (1) of section 40;
- (r) functions, procedure to be followed by food laboratories under sub-section (3) of section 43;
- (s) procedure to be followed by officials under sub-section (6) of section 47;
- (t) financial regulations to be adopted by the Food Authority in drawing up its budget under sub-section (2) of section 81; (u) issue guidelines or directions for participation in Codex Meetings and preparation of response

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to Codex matters; and (v) any other matter which is required to be, or may be, specified by regulations or in respect of which provision is to be made by regulations.

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**93. Laying of rules and regulations before Parliament.** - Every rule and every regulation made under this Act shall be laid, as soon as may be after it is made, before each House of Parliament, while it is in session, for a total period of thirty days which may be comprised in one session or in two or more successive sessions, and if, before the expiry of the session immediately following the session or the successive sessions aforesaid, both Houses agree in making any modification in the rule or regulation or both Houses agree that the rule or regulation should not be made, the rule or regulation shall thereafter have effect only in such modified form or be of no effect, as the case may be; so, however, that any such modification or annulment shall be without prejudice to the validity of anything previously done under that rule or regulation.

**94. Power of State Government to make rules.** - (1) Subject to the powers of the Central Government and the Food Authority to make rules and regulations respectively, the State Government may, after previous publication and with the previous approval of the Food Authority, by notification in the Official Gazette, make rules to carry out the functions and duties assigned to the State Government and the State Commissioner of Food Safety under this Act and the rules and regulations made thereunder.

(2) In particular and without prejudice to the generality of the foregoing power, such rules may provide for all or any of the following matters, namely:-

- (a) other functions of the Commissioner of Food Safety under clause (f) of sub-section (2) of section 30;
- (b) earmarking a fund and the manner in which reward shall be paid to a person rendering assistance in detection of offence or apprehension of offender under section 95; and
- (c) any other matter which is required to be, or may be prescribed or in respect of which provision is to be made by rules by the State Government.

(3) Every rule made by the State Government under this Act shall be laid, as soon as may be after it is made, before each House of the State Legislature where it consists of two Houses or where such State Legislature consists of one House, before that House.

**95. Reward by State Government.** - The State Government may empower the Commissioner of Food Safety to order payment of reward to be paid to a person who renders assistance in the detection of the offence or the apprehension of the offender, from such fund and in such manner as may be prescribed by the State Government.

**96. Recovery of penalty.** - A penalty imposed under this Act, if it is not paid, shall be recovered as an arrear of land revenue and the defaulters licence shall be suspended till the penalty is paid.

**97. Repeal and savings.** - (1) With effect from such date as the Central Government may appoint in this behalf, the enactment and Orders specified in the Second Schedule shall stand repealed: Provided that such repeal shall not affect:- (i) the previous operations of the enactment and Orders under repeal or anything duly done or suffered thereunder; or (ii) any right, privilege, obligation or liability acquired, accrued or incurred under any of the enactment or Orders under repeal; or (iii) any penalty, forfeiture or punishment incurred in respect of any offences committed against the enactment and Orders under repeal; or (iv) any investigation or remedy in respect of any such penalty, forfeiture or punishment, and any such investigation, legal proceedings or remedy may be instituted, continued or enforced and any such penalty, forfeiture or punishment may be imposed, as if this Act had not been passed:

(2) If there is any other law for the time being in force in any State, corresponding to this Act, the same shall upon the commencement of this Act, stand repealed and in such case, the provisions of section 6 of the General Clauses Act, 1897 shall apply as if such provisions of the State law had been repealed.

(3) Notwithstanding the repeal of the aforesaid enactment and Orders, the licences issued under any such enactment or Order, which are in force on the date of commencement of this Act, shall continue to be in force till the date of their expiry for all purposes, as if they had been issued under the provisions of this Act or the rules or regulations made thereunder.

(4) Notwithstanding anything contained in any other law for the time being in force, no court shall take cognizance of an offence under the repealed Act or Orders after the expiry of a period of three years from the date of the commencement of this Act.

**98. Transitory provisions for food standards.** - Notwithstanding the repeal of the enactment and Orders specified in the Second Schedule, the standards, safety requirements and other provisions of the Act and the rules and regulations made thereunder and Orders listed in that Schedule shall continue to be in force and operate till new standards are specified under this Act or rules and regulations made thereunder: Provided that anything done or any action taken under the enactment and Orders under repeal shall be deemed to have been done or taken under the corresponding provisions of this Act and shall continue in force accordingly unless and until superseded by anything done or by any action taken under this Act.

**99. Milk and Milk Products Order, 1992 shall be deemed to be regulations made under this Act.** - (1) On and from the date of commencement of this Act, the

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Milk and Milk Products Order, 1992 issued under the Essential Commodities Act, 1955 shall be deemed to be the Milk and Milk Products Regulations, 1992 issued by the Food Authority under this Act.

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(2) The Food Authority may, with the previous approval of the Central Government and after previous publication, by notification, amend the regulations specified in sub-section (1) to carry out the purposes of this Act.

**100. Amendments to the Infant Milk Substitutes, Feeding Bottles and Infant Foods (Regulation of Production, Supply and Distribution) Act, 1992.** - As from the notified day, the provisions of the Infant Milk Substitutes, Feeding Bottles and Infant Foods (Regulation of Production, Supply and Distribution) Act, 1992 (herein referred to as the principal Act) shall apply subject to the following amendments, namely:-

- (a) throughout the principal Act, any reference to "the Prevention of the Food Adulteration Act, 1954" shall be substituted by reference to "the Food Safety and Standards Act, 2006";
- (b) in section 12 of the principal Act, the reference to "any Food Inspector appointed under section 9 of the Prevention of the Food Adulteration Act, 1954" shall be substituted by reference to "any Food Safety Officer appointed under the Food Safety and Standards Act, 2006";
- (c) throughout the principal Act, any reference to "Food Inspector" shall be substituted by the expression "the Food Safety Officer"; and
- (d) in section 21 of the principal Act, in sub-section (1), the reference to clause (a) shall be substituted by the following, namely:- " (a) the Designated Officer or the Food Safety Officer directed under sub-section (5) of section 42 of the Food Safety and Standards Act, 2006; or "

**101. Power to remove difficulties.** - (1) If any difficulty arises in giving effect to the provisions of this Act, the Central Government may, by order published in the Official Gazette, make such provisions not inconsistent with the provisions of this Act, as may appear to be necessary, for removing the difficulty: Provided that no order shall be made under this section after the expiry of the period of three years from the date of commencement of this Act.

(2) Every order made under this section shall be laid, as soon as may be after it is made, before each House of Parliament.

### 3.4 FOOD SAFETY

Food safety is a scientific discipline describing handling, preparation, and storage of food in ways that prevent foodborne illness. This includes a number of routines that should be followed to avoid potentially severe health hazards. Food can transmit disease from person to person as well as serve as a growth medium for bacteria that can cause food poisoning. Debates on genetic food safety include

such issues as impact of genetically modified food on health of further generations and genetic pollution of environment, which can destroy natural biological diversity. In developed countries there are intricate standards for food preparation, whereas in lesser developed countries the main issue is simply the availability of adequate safe water, which is usually a critical item.

A little more than a decade after global warming, gradually disappearing rain forests and endangered species ruled our collective conscience, new concerns have started to dominate our concerns: pesticides, mad cow disease, e-coli genetically modified foods, fungicides, growth hormones and food safety.

### *Restaurant Food Safety*

In this first decade of the 21st century, food safety is the environmental issue (75 percent of North Americans claim to be concerned about the wholesomeness of the food they consume). Even a larger percentage is concerned about processed food, yet a huge proportion of the population buys processed and prepared food due to time constraints. These days, people are time poor but cash rich. Considering the fact that in the recent past more ground beef had to be recalled than anytime before 1990 shows how vulnerable we all are.

It used to be that food manufacturers wanting to export to Canada had to pass stringent health inspections carried out by specially trained officials before they were allowed to ship a unit of their product, but this policy has been relaxed. Also every slaughterhouse had to have an inspector (provincial or federal) but this policy has been relaxed in most cases.

These days the North American consumer has more opportunity to sample food from different part of the world. You can now buy haricot beans from Kenya, Kiwi from New Zealand, Israel, Chile, or Italy, pineapple from Thailand, herbs from Costa Rica, avocados from the Caribbean, avocado oil from New Zealand, papayas from Brazil, okra from India and mangoes from Central, America oysters from France, swordfish from Chile, cod from Norway and even dried fish from Maldives. Some of these foods may be contaminated due to illegal means of irrigation with untreated sewage.

Restaurants are just one link in the food-supply chain; their role against food borne illness is crucial. In Canada approximately 10,000 cases of food borne diseases are reported annually, of which 30 percent result in death. The Atlanta based Centre of Disease Control (CDC) estimates that about 70 percent of all food borne illness outbreaks occur in foodservice operation compared to 20 percent traced to homes. Food processors account for three percent but this figure is increasing.

It is obvious that the restaurant industry particularly the fast food industry must train all food handlers more vigorously, hire healthy individuals and take

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every possible precaution to serve wholesome foods. This will cost but it better to be safe than sorry.

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Ingesting food that has been contaminated by bacteria, viruses, parasites or chemicals causes food borne illness. Food-safety hazards can be introduced into food service operations in a number of ways, such as food, equipment, supplies and customers. The hazards may be biological (bacteria, viruses, parasites and fungi); chemical (cleaning supplies, pesticides, and food additives); or physical (dirt, broken glass and crockery that accidentally get into food).

Diseases can also be spread by cross-contamination, which is the transfer of harmful substances or microorganisms to food by a variety of means. Utensils, washcloths, and human hands can contaminate ready-to-eat foods. Contamination can also occur via food-to-food, such as when thawing meats drip on ready-to-eat foods.

The three main elements of the restaurant food safety system are: food microbiology, quality control and risk assessment.

The 7 steps of food safety are as follows

1. Assess hazards and potential risks.
2. Identify critical control points including cross contamination, cooking, cooling, hygiene.
3. Set up procedures to make sure safety is maintained at all critical control points.
4. Monitor critical control points and use the correct signs, tools, and training materials to ensure this.
5. Take corrective actions as soon as a critical control point is in jeopardy or when any violations are pointed out.
6. Set up a record-keeping system to log all of your flowcharts and temperature checks
7. Keep up with the system to make sure it is working.

Each food item served in restaurant will need its own flow chart, which looks at every step of the food's journey from being received into the restaurant from a purveyor to being served to a customer. The steps in between include storage, preparation, holding/display, service, cooling, storage of leftovers and reheating techniques. The Executive Chef will be responsible for these flow charts.

### **Avoiding Food Contamination**

There are many safety procedures to follow when preparing food in your restaurant. One of the most important is to thaw frozen foods properly. You can cook food from its frozen state or by refrigerating it at under 38 degrees F. You may also thaw under running water at a temperature of 70 degrees F. or below for up to two hours. A microwave is another acceptable way to thaw foods, but

only if the entire cooking period will be in the microwave or the food will be finished (immediately after microwaving) by another cooking method.

Food items such as meats and poultry must be cooked to the correct internal temperatures. Thermometers are the best way to ensure accuracy of these temps.

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### **Avoid Cross Contamination**

Cross contamination is all too common in kitchens today. Be sure to clean and sanitize any equipment used to prepare food between uses and be particularly vigilant when handling a potentially harmful food such as raw poultry, beef or fish.

There is a "danger zone" of temperature, 40 degrees F. – 140 degrees F., within which food bacteria multiply rapidly and can thrive. The temperature of food should be kept out of this zone as much as possible. The limit for time spent in the danger zone including all aspects of storage, preparation and service is 4 hours.

### **Food Storage**

Storage is another way to protect your food from becoming contaminated or spoiled. There are rules for this area as well. Use the "first in, first out" (FIFO in accounting) rule meaning that foods should be used in the order they are delivered. For instance, do not use the newest milk first if you still have two gallons that are good from your last delivery. Date goods and place the new behind the old on your storage shelves.

Keep all foods wrapped and clean. Each item in your walk-in refrigerator, freezer and your dry storage should be in a sealed labeled container or package with the contents and date received. Do not take a chance on questionable foods: "When in doubt, throw it out" is a great rule to live when it comes to food safety. Go through your refrigerator unit regularly and get rid of spoiled foods.

The refrigerator temperature must be below 38 degrees F. Items stored include meats, seafood, vegetables and dairy products. Keep a working thermometer in the unit at all times so you will know at a glance if there is a problem. You do not want to lose your entire inventory! Freezers should keep foods at below 0 degrees F. Most foods will not maintain their quality in a freezer so it should be used only as needed. Use fresh products whenever possible.

Items in dry storage should be kept between 50 – 70 degrees F with a relative humidity of 50 – 60%.

### **Street Foods Safety**

The growing street food sector in low-income countries offers easy access to inexpensive food as well as new job opportunities for urban residents. While this development is positive in many ways, it also presents new public health



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challenges for the urban population. Safe food hygiene is difficult to practice at street level, and outbreaks of diarrheal diseases have been linked to street food.

Because of socioeconomic changes in many countries, this sector has experienced significant growth during the past few decades. Urbanization and population growth, especially in developing countries, are expected to continue into the next century and street-vended foods, which are largely but not exclusively an urban phenomenon, will expand accordingly.

**Benefits of Street-Vended Foods**

Street-vended foods provide:

- a source of inexpensive, convenient and often nutritious food for urban and rural poor;
- a source of attractive and varied food for tourists and the economically advantaged;
- a major source of income for a vast number of persons, particularly women; and
- a chance for self-employment and the opportunity to develop business skills with low capital investment.

While street-vended foods are appreciated for their unique flavours as well as their convenience, they are also often essential for maintaining the nutritional status of the population.

Street food vending assures food security for low-income urban populations and provides a livelihood for a large number of workers who would otherwise be unable to establish a business for want of capital. Street food vending also offers business opportunities for developing entrepreneurs.

In contrast to these potential benefits, it is also recognized that street-food vendors are often poor and uneducated and lack appreciation for safe food handling. Consequently, street foods are perceived to be a major public health risk. If a community is to have the full benefits of street-vended foods with minimal risk of foodborne disease, government intervention is required to ensure that the standard of safety for such foods is the best attainable in the context of the prevailing local situation.

Street-vended foods may pose significant public health problems—

- Lack of basic infrastructure and services, such as potable water supplies.
- Difficulty in controlling the large numbers of street food vending operations because of their diversity, mobility and temporary nature.
- Insufficient resources for inspection and laboratory analysis.
- General lack of factual knowledge about the microbiological status or the precise epidemiological significance of many street-vended foods.

- Poor knowledge of street vendors in basic food safety measures.
- Inadequate public awareness of hazards posed by certain street foods.

In 1993, the World Health Organization through its six Regional Offices undertook a survey of its Member States to assess the current situation in regard to street-vended food and to obtain the views of responsible authorities concerning the hazards posed by street-vended foods and contributing factors, as well as approaches for managing these hazards. Over 100 countries participated in this survey which represents the most extensive report on street-vended food available to date. The survey (see summarized results in annex V) noted that almost all countries reported a wide variety of foods, types of preparation, facilities and infrastructure.

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### *Key findings of the WHO survey of street-vended foods*

- 74% of countries reported street-vended foods to be a significant part of the urban food supply;
- Street-vended foods included foods as diverse as meat, fish, fruits, vegetables, grains, cereals, frozen produce and beverages;
- Types of preparation included foods without any preparation (65%)\*, ready-to-eat food (97%) and food cooked on site (82%);
- Vending facilities varied from mobile carts to fixed stalls and food centres;
- Infrastructure developments were relatively limited with restricted access to potable water (47%), toilets (15%), refrigeration (43%) and washing and waste disposal facilities;
- The majority of countries reported contamination of food (from raw food, infected handlers and inadequately cleaned equipment) and time and temperature abuse to be the major factors contributing to foodborne disease; and
- Most countries reported insufficient inspection personnel, insufficient application of the HACCP concept and noted that registration, training and medical examinations were not amongst selected management strategies

\* percentage of countries reporting yes to question.

### *Requirements in the Hygienic Handling of Street-vended Foods*

To enable official recognition and control of street foods it may be appropriate to develop government guidelines or regulations specific to this food service sector. As stated in the preface of this document, many governments consider a Code of Hygienic Practice as an essential tool in this regard. If governments are considering the development of a Code of Hygienic Practice for street-vended foods, the following requirements focus on hygienic handling

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requirements to cover special needs<sup>3</sup> resulting from the preparation and/or sale of foods on streets or other public places, often by mobile hawkers or peddlers. It takes into account the principles enunciated in the Codex document, "The Recommended International Code of Practice - General Principles of Food Hygiene", proposed by the twenty-eighth and twenty-ninth sessions of the Codex Committee on Food Hygiene. The information is presented in a format similar to that used in draft codes prepared for the discussion of a number of regional Codex Coordinating Committees, however emphasis has been placed on matters that relate directly to food safety rather than on those that are mainly aesthetic in nature.

**General Requirements**

General issues commonly addressed in codes of practice or regulations include aspects such as licensing and display of notices. Where licences are included it may be appropriate to award them conditional to the commitment of the vendor to the preparation of safe food and subject to their knowledge of safe food-handling practices. Prior medical examination (clinical and laboratory) should not be a condition for licensing or for subsequent renewal of licence.

Requirements on display of notices should also focus on food safety messages. For example, it may be a requirement that vendors selling raw or partially processed animal products for immediate consumption be required to display a sign that informs consumers of the increased public health risk associated with consuming food in such states. Of course, authorities may consider it appropriate to require the display of other notices but care should be taken to avoid over-regulation in this regard.

**Raw materials**

Food is susceptible to contamination at all stages of the food chain. Raw materials are therefore important to the safety of street-vended food because of the biological, chemical and physical hazards that may be introduced to the vending operation and which may persist through preparation and processing.

The type and extent of biological contamination of raw materials used in street food vending will differ little from those used in other businesses involved in the food service sector. The greatest differences will be noted when vendors purchase raw materials of a lower grade because of their lower cost. Consequently, raw materials should be obtained from known and reliable sources and not from clandestine dealers (such as illegal slaughterers). Raw materials should also be observed for visible deterioration and off-odours. In addition, it may be necessary to examine potentially hazardous food for temperature abuse, including signs of thawing for frozen raw materials.

Raw materials also need to be examined for the presence of physical hazards and gross chemical contamination prior to purchase (although it should be noted

that chemical contamination can rarely be detected without laboratory analysis). Raw materials contaminated with obvious physical hazards should be avoided or the hazards removed. Control of chemical hazards in raw materials is often extremely difficult for street food vendors. Attention may be given to obtaining food colours and other additives from authorized dealers (where they exist), purchasing raw materials from reputable suppliers and examining foods for possible visible and olfactory signs of chemical contamination.

It should be assured that raw materials are not further exposed to contamination from accidental exposure to chemicals or growth of pathogens and toxin production during transport and storage. To protect against such hazards:

- (a) Materials, which will be consumed in their raw state, should be transported and stored separately from other raw materials and non-food items.
- (b) Materials should be transported in such a way as to limit pathogen growth or toxin formation by effectively controlling time of transportation and the temperature and water activity of such raw materials.

Vendors should pay particular attention to containers of pastes, sauces and other food additives, monitoring them for fungal growth and visible deterioration. Such ingredients should be replaced regularly to prevent growth and toxin formation.

### ***Water and Ice***

Water is a critical raw material in many street food vending operations. It may also be contaminated with biological, chemical or physical hazards. As such contaminated water will create a public health risk if it is:

- used for drinking purposes;
- used for washing of food, incorporated into food as an ingredient and used in the processing of food; or
- used in the washing of equipment, utensils and containers.

Freezing does not remove chemical hazards and should not be considered a safe process for the removal of biological hazards. Consequently contaminated ice may introduce hazards to food and beverages with which it is in contact.

One of the most critical problems in street food vending is the supply of water of acceptable quality and in sufficient quantities for drinking, washing, cleaning and other operations. The ambulant vendor can carry only limited supplies and even stationary food stalls may not have direct access to a water supply. Indeed, water is generally scarce in low-income areas in most developing countries. Water taps may run only for a few hours during the day and sometimes not for days. Street vendors in various parts of the world are known to wash their utensils, including those in which food has been served, in water which has been used previously, perhaps many times. Therefore, water supply needs close

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attention in street food operations. This is particularly true if contaminated water may be added to a food or applied to utensils without a subsequent step (eg heating or chemical sanitizing) to eliminate or reduce the potential hazards to an acceptable level.

As far as possible, the production and sales units should have their own supplies of potable<sup>5</sup> water whether it is from a central system or an individual source, such as a hand pump. If potable water is not available, a suitable source of safe<sup>6</sup> water should be used.

Water used for drinking and preparation of beverages should be potable. In any case, the quality of the water should not be inferior to that of drinking water available in the community. Special care should be taken to assure that such water is maintained in a sanitary state.

Water used for washing utensils, food and hands should be safe and should not be re-used. As far as possible, running water should be available for these purposes. If this is not feasible, a bucket or similar container can be used for washing, but it should be emptied and cleaned after each washing. Hot water, where available, makes cleaning and washing easier and more effective but is not generally available to street vendors.

Ice to be used in beverages and food should be prepared from potable water and should be transported and stored in a sanitary manner. Other items, such as food and beverages, should not be stored in the same container used to store ice intended for consumption.

### **Formulation**

The safety of some foods lie in their high levels of salt, sugar or acid or low moisture content. The formulation of such foods is often critical and street-food vendors and health authorities must pay particular attention the correct amounts of ingredients and monitor critical limits through taste, appearance, texture, odour, mixing time, pH, water activity, etc.

### ***Preparation and processing***

Consumption of raw or inadequately processed animal foods may prove a significant public health risk as such foods are frequently contaminated with pathogens and occasionally with toxic chemicals. Similarly, vegetables, fruits and grains may carry hazardous contaminants.

Preparation and processing should:

- be adequate to eliminate or reduce such hazards to an acceptable level;
- prevent growth of pathogens, production of toxic chemicals and the introduction of physical hazards; and
- ensure that foods are not recontaminated.

Preparation and processing is a critical area in the series of steps to which foods are subjected before their sale and consumption and is important in determining the safety of food.

Some vendors carry out the final preparation with cooking (e.g. frying, grilling, baking, etc.) in open stalls in front of their customers. This exposure tends to inspire confidence and, in many cases, improves the taste and enjoyment of food. However, this does not obviate the necessity of observing the basic rules of food safety which are very well stated in the Ten Golden Rules for Safe Food Preparation 7.

An important principle in preparing and processing food is to avoid direct and indirect contact between raw and cooked or prepared foods which will be consumed without further heating<sup>8</sup>. Indirect contact may be caused by improper storage practices, unclean hands and unwashed or soiled equipment and surfaces such as cutting boards and knives.

Foods to be eaten raw (e.g. salads and peeled or cut fruit) should be prepared with special attention to cleanliness. Grains (e.g. rice, pulses, beans, etc.), vegetables and some fruits (especially if they are to be consumed raw) should be washed sufficiently with safe water in an effort to reduce contamination on their surfaces to an acceptable level. During this process, street food vendors should examine the food for and remove any physical hazards. Where the available water is considered unsafe and there is no subsequent control of biological hazards it may be preferable to remove gross contamination without the use of water. The washing of cut fruit such as pineapples, melons, papaya etc. is not recommended where water is of uncertain safety.

If frozen foods are used it may be necessary to thaw them before cooking in order to ensure adequate heat penetration. Thawing may be omitted in special cases where the manufacturer recommends doing so.

If food is processed by heat treatment (e.g. frying, grilling, baking, etc.) it should be thoroughly cooked, which means that the temperature of all parts of the food reaches at least 70°C. The adequacy of the cooking process may be monitored by the observation of temperature, boiling (bubble formation) or changes in texture and colour.

Attention should also be paid to the possible chemical hazards produced by overcooking (e.g. charring) and excessive reuse of cooking oils. If food is processed by fermentation, acidic conditions should be achieved as rapidly as necessary to prevent growth of pathogens and toxin formation. Vendors should be encouraged to optimize parameters such as incubation time and temperature and addition of starter culture (e.g. back-slopping) to limit such hazards.

Transportation, handling and storage of prepared food Proper transport, handling and storage of prepared food is often critical to the safety of street-vended food. Improper practices may lead to toxin formation, pathogen growth or recontamination.

- The vehicle used for transport should be clean and should not carry animals, toxic substances or contaminating materials along with the

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- prepared food, unless equipped with a structural barrier to prevent cross-contamination.
- The time required to transport food between the preparation and vending units should be such that bacterial proliferation does not reach hazardous levels under the conditions of transport and eventual sale. Problems of transport are minimized if the point of sale is near the place of preparation.
  - Prepared foods served hot should be kept at a temperature of at least 60°C to prevent microbial growth, particularly if the sales period extends over 4-5 hours.
  - Prepared foods which are to be served cold and which may support the growth of pathogens should, if cooling capacity (ice of appropriate quality, refrigeration etc.) is available, be stored at less 10°C. If cooling capacity is unavailable to street food vendors they must regulate preparation and holding time prior to consumption to limit the opportunity for pathogens to reproduce. Chemical preservatives should not be used unless they are specifically approved.
  - Handling of cooked foods should be kept to a minimum to reduce the likelihood of introducing pathogens. Where possible vendors should use clean utensils rather than hands. Where it is impossible to avoid handling such foods, it is essential that the vendors limit the opportunity for any pathogens thus introduced, to reach an infective dose.
  - Most street vendors plan food preparation in such a way that prepared or semiprepared items are consumed by the end of the daily business period, but sometimes they do have leftovers. If the latter is a potentially hazardous food and no cold storage (<10°C) is possible, the vendors should be encouraged to discard it. If cold storage facilities are available, the food may be kept for sale after re-heating (>70°C) on the following day. However, it is preferable to discard leftovers, especially foods liable to support microbial growth.
  - If cold storage (refrigeration) is available, large quantities of hot food should not be put into the refrigerator in one batch as bacterial growth will occur in the centre of the food which remains warm (above 10°C). It is preferable to place food in smaller quantities in shallow containers to allow rapid cooling of all parts.
  - It is generally feasible to store dry, acidified and some fermented foods for varying periods in a cool, dry place protected from biological, chemical and physical hazards. Storage of pre-packed sterilized milk, bottled beverages and many canned foods present few hazards provided the packages were appropriately sealed during processing and remain intact and undamaged.

## Vending Units, Equipment and Utensils

As certain materials will leach hazardous chemicals into food the use of inappropriate equipment and utensils should be avoided, particularly with acidic food and beverages.

The design, construction and maintenance of vending units, equipment and utensils is also important to food safety. The use of inappropriate materials and the poor maintenance of materials may lead to the inability to effectively clean and sanitize surfaces. In turn this may then result in the build-up of residues of food leading to microbial growth and an increased likelihood of contamination. The appropriate use of equipment is also important to prevent cross-contamination from raw materials.

- Vending units should be designed and constructed so that they are easily cleaned and maintained. Equipment and surfaces used for food preparation should be such that they can be cleaned easily and preferably be made or covered with impervious materials. Preparation should not be carried out on or near the ground.
- Structurally, equipment, utensils and other containers should allow easy cleaning and should not have pitted, grooved or sculpted surfaces. They should not be used for purposes other than cooking, processing and keeping of food. They should be kept free from contamination from the environment. For example, bowls and dishes should be stored upside down to prevent the accumulation of dust and foreign matter.
- Equipment, utensils and other containers should be made of materials which do not release toxic or hazardous materials (copper, lead, cadmium etc.) into food and beverages, especially when foods are acidic. Similarly, chopping boards should be constructed and maintained so as to reduce the likelihood of contaminating foods with physical and biological hazards.
- If raw meats, poultry or fish are handled, their preparation (e.g. washing, cutting etc.) should be carried out using separate equipment and utensils (e.g. containers, cutting boards and knives), by sanitizing equipment and utensils between uses or by sequencing food preparation practices to minimize the opportunity for cross-contamination.
- Food should be held and transported in clean containers and protected from contamination through contact with unclean surfaces and exposure to undesirable or hazardous materials.

## Food Handlers

Food handlers may introduce biological hazards:

- when suffering from specified diseases;
- from organisms on the food handlers' skin or in their intestine and faeces;
- when respiratory tract organisms contaminate foods or food contact surfaces; and
- by cross-contamination after handling raw materials.

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Physical hazards may also be introduced by food handlers wearing jewelry, bandages or by careless food-handling practices. The term "food handler" applies to persons who prepare food and to those who sell it, if they are different persons.

- Food handlers should be educated, encouraged or supervised to stop their business promptly if at any time they suffer from jaundice, diarrhoea, vomiting, fever, sore throat with fever, discharges from ear, eye or nose or have visibly infected skin lesions (boils, cuts, etc.).
- Food handlers should wear clean and proper clothing according to prevailing local standards. (The requirement for food handlers to wear aprons of a particular colour or shade or to wear hair coverings should be tempered by the realization that it has more to do with food aesthetics and inspiring consumer confidence than food safety).
- Food handlers should wash their hands with soap and water after engaging in any activities that are likely to introduce biological, chemical or physical hazards (eg. after handling raw foods of animal origin, after using the toilet, after handling unsanitary objects such as garbage containers, after touching animals and after contact with toxic substances such as pesticides and disinfectants.) Particular attention should be given to this hygienic practice before handling ready to eat foods.

In the preparation and sale of food, food handlers should:

- refrain from unhygienic and unsightly practices, such as
  - chewing or smoking tobacco, chewing betel nut or chewing gum;
  - touching mouth, tongue, nose, eyes, etc.; and
  - spitting, sneezing and coughing on or near food.
- avoid contamination of food with physical hazards by
  - careful food handling practices;
  - protecting food from the environment; and
  - removing jewelry prior to handling food.

### Requirements at the Point of Sale

The sale of food represents the final stage in the chain of operations for street vending of foods and is of particular importance in assuring their safety. Preparation and sale may be carried out in the same place (particularly in stationary vending operations) or separately. Hygienic requirements are, however, similar in both cases.

- Food should be prepared and sold in a clean, well-lit place protected from strong sun, dust, rain and wind. It should be away from sources of contaminants such as solid and liquid wastes, and from animals, including pets as well as pests.
- Premises used for preparation, processing and sale should not be used for non-food practices which may lead to contamination of food with biological, chemical or physical hazards.

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- Sales points, stationary or ambulant, should be located in a place where risk of contamination from rubbish, sewerage and other noxious or toxic substances is absent or minimal. If such risks cannot be completely eliminated, food offered for sale should be suitably covered and protected from contamination.
- Food vendors should either sanitize eating and drinking utensils between use or use disposable utensils (preferably recyclable or biodegradable), wherever possible.
- When required, food should be wrapped in clean paper, plastic or other suitable material. Newsprint, used paper and other insanitary wrapping materials should not be used in direct contact with food.
- Vendors who are patronized by high risk groups (e.g. around schools, institutions for the elderly, hospitals etc.) should be particularly vigilant in controlling food safety. Such vendors should also receive more intense education, training and auditing by regulatory authorities.

**Cleaning and Sanitizing**

Vendors should employ cleaning procedures which ensure that vending unit, equipment and utensils are properly clean. Where sanitizing is required to control hazards, vendors should be educated regarding adequate steps and encouraged to adopt a suitable cleaning and sanitizing programme.

**Waste Disposal and Pest Control**

All waste should be handled and disposed of in such a manner as to avoid contamination of food and water and the environment. In particular, access to food waste by pests (insects and rodents) as well as by animals (dogs and cats) should be avoided. The following types of waste should, if possible, be disposed of separately:

- (a) Liquid waste (except oil and fat) should be emptied into the nearest sewer or drain. Some form of a trap should be used to ensure that only liquid waste is discharged into the sewer or the drain.
- (b) Remains of food may be separated and kept for feeding animals. Animals should not, however, be allowed to eat from utensils used to serve customers.
- (c) Other solid waste should be kept in covered containers to be removed at least once daily by the public garbage collection system. The containers should be cleaned daily.
- (d) Used oil and fat may be stored and re-processed for animal feed.

Pest infestations may pose a threat to the acceptability and safety of street-vended food. Consequently, the area should be kept clean and tidy, left-over food should not be kept and waste should be properly managed.

## Setting Priorities for Food Safety Interventions

### Introduction

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The requirements presented in the preceding section focus attention on raw materials and processes which need to be controlled to enhance food hygiene. They are fairly general, therefore they are applicable worldwide. While these recommendations provide a basis for the improvement of safety of street foods, and many of the recommendations may prove critical for safety, their application for ensuring safety has certain limitations:

- (i) they do not provide a mechanism for determining priority actions;
- (ii) the guidance is non-specific to foods, operations, special socioeconomic conditions where the food is prepared or the cultural factors leading to specific risky behaviour.

Therefore, it is recommended that authorities undertake Hazard Analysis and Critical Control Point (HACCP) studies to identify and integrate critical control measures into strategies for improving the safety of street foods.

The HACCP system is recognized by the Codex Alimentarius Commission as the most cost-effective approach for assuring food safety at all stages of the food supply. HACCP will enable the systematic identification of potential hazards and their control measures and permit a distinction between control measures related to aesthetics and environmental planning and management and those related to critical control points for food safety. HACCP also provides guidance in selection of enforcement and education priorities, rather than general sanitation and superficial improvements. Additionally, valuable information about food and processes will be obtained, and inspections to verify that the vendors are monitoring the critical control points will be more efficient than traditional inspections. The benefits derived from improved food safety should justify the time spent on the initial hazard analysis and verification. Additional benefits will ensue from inspections of foods and operations identified as hazardous rather than random inspections, when only a few high-risk foods or operations may be seen.

However, implementation of the HACCP approach will require a change in attitude by policy- and decision-makers and training of technical and inspection personnel in the application of HACCP to this sector.

### Benefits of the HACCP Approach

The application of HACCP for street-vended foods can address many of the difficulties identified above and offers additional benefits. While personnel will need to be trained in the conduct of HACCP studies, the HACCP approach has a number of important features, including:

- HACCP is a proactive approach which anticipates problems before they occur.

- HACCP provides control mechanisms which are rapid and easy to monitor.
- HACCP approaches to food safety assurance are inexpensive compared to chemical and microbiological methods of analysis.
- HACCP emphasizes monitoring of critical control points by persons directly involved with the food operation.
- HACCP can be used to predict potential hazards.
- HACCP focuses attention on controlling those aspects of the operation that are critical to safety and alleviates some of the resource constraints for inspection and training.
- HACCP studies can identify critical food safety risk factors which can be the basis for training and education of street food vendors as well as consumers. Contamination and epidemiological data on foodborne diseases are available, these should be taken into consideration. However, the inclusion of the HACCP approach as the basis of studies is vital, particularly in countries or areas where the availability of the former data is limited.

**NOTES****Participants in HACCP**

Successful HACCP initiatives require the cooperation of all parties involved and the recognition that they each have important roles to play. Although the industry is usually given the primary responsibility for the application of HACCP, in the case of street-vended foods the "industry" is comprised of a multitude of individuals who often lack the collective organization and resources to undertake HACCP studies.

Consequently, governments may need to assume this task, at least until sufficient experience is gained and adequate resources are available for the street vendors to take over. Government authorities at local and municipal levels have the opportunity to provide leadership in improving the safety of street-vended food by assuming this responsibility. With this in mind, the roles of each sector are set out over page:

The role of government is to conduct the HACCP in cooperation with street vendors. During the HACCP study, the government should make available people trained in conducting HACCP studies and provide resources for this purpose.

Wherever possible, a team of persons with knowledge and skills covering the following topics should be drawn together: ( i) basic principles of food microbiology; (ii) street food vending flow operations; (iii) important factors that cause and contribute to foodborne diseases; and, (iv) sources of contamination and modes of transmission of agents of foodborne disease. The skills of an anthropologist and a social scientist may be beneficial in the understanding of underlying factors leading to risky behaviours and in improving the effectiveness of communication.

The team leader, at least, should be trained in conducting HACCP studies. Ideally, the entire team should be so trained. Training considerations for HACCP

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are set out in other WHO documents.9, 17. In many instances, persons with the required knowledge and skills may not be available. Training, either on-the-job or abroad, may be necessary to develop the basic core of persons capable of conducting HACCP studies. Where human resources are limited and it proves impossible to draw together a team, it is even more imperative that the persons responsible for conducting HACCP studies in a community have the aforementioned knowledge and skills and access to as much data as possible regarding hazards and their control. It is also essential that the responsible persons make maximum use of the knowledge of the vendor.

After the HACCP study, the government should implement a food safety strategy based on the findings, including provision of appropriate education and training in safe food handling using the controls identified during the HACCP study.

The role of the vendors is to facilitate the HACCP process and implement the controls identified in the HACCP plan. During the HACCP study this will be achieved by providing the HACCP team with all the information necessary for the description of the product and the method of preparation as reflected in the flow diagram. Vendors also have an important role in ensuring that any proposed monitoring procedure and corrective action can be implemented effectively in practice.

After the HACCP study, vendors should implement the HACCP plan by monitoring the CCPs and taking corrective actions when necessary. Vendors should cooperate with the government in identifying new potential hazards, such as changes in sources of raw materials or preparation procedures.

### Setting Priorities for a HACCP Study

In most cases, a complete HACCP study cannot be done for every type of street food and, therefore, priorities must be set. Whenever possible, epidemiological data should be used in establishing priorities. High priority should be given to foods that are commonly implicated as vehicles of foodborne disease and to the types of vending operation where outbreaks of foodborne diseases have been reported. However, not all countries have foodborne disease surveillance programmes which could provide such data. In the absence of such data, priorities may be based on the following four risk factors:

#### *(a) Intrinsic properties of the foods involved*

Some foods may contain toxic chemicals or microbial pathogens or their toxins because of the practices involved in the production of the raw materials. For example, raw meats may be contaminated with microbial pathogens at the slaughtering stage and raw vegetables might be contaminated with microbial pathogens or toxic chemicals from fertilizers, pesticides etc. Food properties also relate primarily to characteristics of the food that may support the survival and/

or growth of microorganisms based on knowledge of microbial ecology and epidemiological history. The characteristics that are most useful are pH, water activity (a<sub>w</sub>), and redox potential (E<sub>h</sub>).

These factors influence growth of infectious or toxigenic microorganisms. Foods which are possibly hazardous because they readily support rapid and progressive growth of microorganisms, should be given high priority. Next, give priority to foods that can support growth of pathogens during prolonged storage periods. Food which are shelf-stable at ambient temperatures, such as those having a pH of 4.5 or less or a water activity below 0.85, can be assigned lower priority.

**(b) Preparation and handling**

Food operations that commonly contribute to the causation of foodborne illnesses are those which (a) prepare hazardous foods in advance of serving, (b) store foods in a manner that might allow microbial growth, and (c) inadequately reheat food to inactivate pathogens. On the other hand, food which is thoroughly cooked just before consumption is safe from biological hazards although chemicals and certain toxins would not be affected. Food which has been processed, even in a simple form such as fermentation, may be safe when held at ambient temperatures by street vendors. Similarly, commercially processed foods, especially those that are well packaged, may pose little hazard to the consumer when sold by street vendors.

**(c) Volume of food prepared**

The concern about volume of food prepared relates primarily to the amount of food prepared in advance of sales and consumption. In street vending operations, it can be indirectly measured by the average daily sales, the amount of prepared foods on display, and the duration of holding cooked foods on display.

**(d) Susceptibility of consumers**

Infants and children, pregnant women, the hospitalised, immuno-compromised persons and the elderly are more susceptible to foodborne diseases than the general population. In some countries, under-nourished or malnourished population groups frequently rely on street-vended food and are particularly susceptible to foodborne diseases. Those vendors who cater for these persons should be assigned higher priority than those serving the general public. Sometimes, this is due to location - for example, vendors outside schools. In other cases, certain foods may be favoured by a group. For example, pregnant women in some cultures may seek to consume certain types of street-vended foods for "medicinal" reasons.

**Food Safety in Hotels**

Whether the business is a restaurant, a school or a hotel, food safety regulations must be followed by each to ensure that customers are consuming food that is prepared in safe conditions, and is thoroughly cooked to prevent

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food poisoning. Many hotels practice such intense food safety procedures that even cleaning maids and maintenance personnel are required to be trained in food safety regulations.

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### **Personal Hygiene**

One of the most important food safety regulations in the hotel food industry deals with personal hygiene. All persons in the hotel who will be touching food items or items that will touch the food are required to wash their hands after using the rest room. Personal hygiene as a food safety regulation in hotels does not only govern hand washing but also the covering of hair and cuts on the body, wearing clean clothing to work, and covering the mouth and nose when sneezing or coughing and then washing the hands again.

### ***Cleaning and Disinfection***

Cleaning and disinfecting food preparation areas and items used in preparing food are very important to the food safety standards of a hotel. Items, such as preparation tables, stoves, ovens, knives, stirring utensils, grinding machines and juicing machines, all must be cleaned and disinfected to prevent bacteria from growing in or on the items and potentially causing food poisoning.

### ***Pest Control***

Making food safe in hotels does not simply mean using cleanliness when handling food or objects that will come into contact with the food. Food pests, such as roaches, flies and rodents, can contaminate any foods. Annual or more frequent visits from pest control services will help to prevent such problems and keep the food service sector of the hotel at top quality.

### ***Food Preparation***

The cooks preparing the food must learn the proper means of preparing dishes. They are required to throw away any expired foods, even if they are only a day past expiration date, and any foods that touch the floor or come into contact with a dirty surface. Cooks are also required to cook food thoroughly unless otherwise directed by the person who is requesting the food item.

### **Inspection**

The health department of the county in which the hotel is seated reserves the right to make surprise visits to the hotel or other food service business in order to ensure that the hotel staff is observing proper food safety procedures. Since inspections can be done at any time, it is important that all standards be met or the food service sector of the hotel could be shut down, causing the hotel to lose a significant amount of revenue.

### ***Food Safety in Hospital***

Food safety in healthcare is a daily challenge as there are many potential risks to hospital food at any point during its journey to the patient's tray. Large

volumes of food are prepared, brought in by contractors, distributed through long corridors, kept warm at safe temperatures, served to a large number of patients by many hands.

Food hygiene and food safety in hospitals and aged care facilities is ensured by adequate risk management that incorporates staff training, regular food safety auditing and testing, and a wide range of products and services that assist food service staff to adhere to food safety standards and procedures.

Food safety training is an important part of risk management programs, especially in an environment with high staff turnover and a trend to employ casual staff.

Food hygiene in hospital requires special attention to rigorous preventive measures to minimize the hazard of foodborne disease. Several reports document that the concentration of "consumers" at risk may provide a very favourable environment to the diffusion of enteric pathogens from a common source, such as a contaminated meal. In this context, the critical role of food handlers has been repeatedly emphasized. Of special concern in the nosocomial setting, the possible introduction of pathogens with low minimal infective doses, such as Norovirus, via food and/or an infected food handler, that may be followed by explosive secondary transmission chains with substantial impact on Public Health and economic resources.

The hospital food-service system, when contracted out to an external caterer, is considered one of the most complicated production processes within the hospitality sector. Indeed, the diffusion of compulsory competitive tendering, the increasingly demanding, bureaucratic hospital administration regimen, the stringent food costing, the standardization and mass production of meals, the frequent siting of hospitals at considerable distance from the production centre could arise negative effects on both the safety and quality of food. This outlines the need of a strict and systematic monitoring of potential food hazards.

However, in hospital catering, food handlers are very frequently nurses or domestic staff, who are involved in food operations and supervision functions without the preliminary and continuous food safety training and education courses that the European and national legislations mandate for "professional" food handlers. A frequent unawareness of foodborne disease hazards and prevention and control measures is also documented by various organisations.

Nevertheless, the implementation of the HACCP system, universally adopted as a proactive method to prevent foodborne disease, does require a team approach and an understanding of the rationale for monitoring procedures by all staff and underscores the need for continuous training. Providing tailored scientifically sound and updated knowledge and identifying factors that could contribute to generate positive attitude and motivate behaviour change in a definite

## NOTES



setting could help to minimize foodborne hazard in hospital catering and enhance the practical utility of hygiene training for the personnel involved in food service functions.

## NOTES

### *Food Sanitation Tips*

If you prepare or handle food that will be eaten, you must be sure you meet the highest standards of sanitation to make sure the food is safe to eat. While these standards are especially important if you work in a food-service operation, they are just as valid in your home kitchen, backyard barbecue, or at an office potluck.

The first part of sanitation involves your own personal hygiene:

- Don't handle food when you are sick.
- Cover cuts, burns, sores, and abrasions with a tight, dry, antiseptic bandage.
- Shower or bathe daily when you are handling food.
- Keep your clothes clean; wear an apron and change it if you wipe your hands on it or it becomes soiled.
- Keep your hair clean and tied back.
- Use soap and plenty of hot water to wash your hands frequently, especially after any act that might contaminate foods.

*What sort of acts might contaminate foods?* Touching your eyes, mouth, ears, nose or hair, smoking, eating or drinking, using the rest room, sneezing or coughing, using a tissue or handkerchief, handling raw food (such as unwashed fruits or vegetables or uncooked meat), taking out the trash, touching a pet or animal, or touching any dirty surfaces (such as wash cloths, money or credit cards, or soiled dishes or linen).

If you wear food handler gloves, throw them away after each use, or wash your gloved hands as thoroughly as you would wash your bare hands. Gloves can spread germs just as easily as bare hands.

As you prepare food:

- Keep raw food away from ready-to-eat or cooked food.
- Keep all food away from chemicals.
- Keep cold or frozen foods out of the refrigerator or freezer for as short a time as possible.
- Wash all raw fruits and vegetables before preparation.
- Cover food during preparation.
- When plating food, avoid handling tableware that may touch people's mouths.

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- Never plate food that has touched the floor, unwashed hands, or dirty equipment.
- Always use tongs or scoops when necessary. Wear latex gloves, and never touch prepared food with your hands.
- Wipe up spills promptly.
- Hold food at proper temperatures. Some safe holding temperatures for food are:
  - Stuffed meats and reheated leftovers: 165 degrees Fahrenheit (74 degrees Celsius) or above
  - Cold food: 40 degrees Fahrenheit (4 degrees Celsius) or below
  - Beef and other hot food: 140 degrees Fahrenheit (60 degrees Celsius) or above
  - Fish and poultry: 145 degrees Fahrenheit (63 degrees Celsius) or above
  - Cooked pork, pork products, hamburgers, and eggs: 155 degrees Fahrenheit (68 degrees Celsius)
- Clean and sanitize equipment and utensils after each changed use. This includes knives, cutting boards, and thermometers.

Storing food properly is also important:

- Do not refreeze food after it has thawed.
- Always label and date leftovers
- Store raw or thawing meats on the lowest refrigerator shelves
- Store shellfish in the original containers
- Always store food in food-grade containers and food wrap

Most harmful germs thrive in temperatures between 40 and 140 degrees Fahrenheit (4 and 60 degrees Celsius). This is known as the Temperature Danger Zone. However, that number may vary slightly as different health departments vary that amount by plus or minus 5 degrees. When you prepare food, keep it out of the Temperature Danger Zone as much as possible. Note that the Temperature Danger Zone includes room temperature. Whenever a potentially hazardous food (fish, beef, poultry, eggs, dairy products, shellfish, pork, some beans) has been in the Temperature Danger Zone for four hours or more, it should be thrown out.

Salmonella bacteria are the number one cause of foodborne infection in the United States. Typical sources of salmonella are meat, poultry, and eggs. Infection can be prevented by cooking food thoroughly and chilling leftovers rapidly.

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There are two special methods that can help raise the standards of sanitation in your kitchen. The first is the two-spoon tasting method. Use a clean spoon to scoop up the item you wish to taste. Pour that food into a second clean spoon and then taste it. Never taste food over an open container. This ensures that the spoon you taste from does not go back into the food you are preparing.

The second method is also one of the most effective ways of preventing the spread of germs: hand washing. Wet your hands with hot water and wash your hands and wrists with soap for at least 20 seconds. Scrub your nails with a nail brush. Rinse your hands with hot water for 20 seconds. Follow this procedure twice after using the restroom. Dry your hands using a single-use paper towel or an air dryer. Kitchen towels can retain germs.

The methods you use for thawing food is also an integral part of safe food handling. There are three safe ways of thawing frozen food: in a refrigerator, under running water, and in a microwave. Never thaw frozen food at room temperature. It runs the risk of contamination whenever it is left at room temperature.

When thawing frozen food in the refrigerator, remove the food from the freezer. Thaw only the amount of food you need. Place the wrapped food in a shallow container on the lowest shelf of the refrigerator. Do not unwrap the food for thawing. Make sure the refrigerator temperature is cold enough to keep the thawing food cooler than 40 degrees Fahrenheit (4 degrees Celsius). Leave the food in the refrigerator until it is totally thawed. Large amounts of food or food in boxes can take several days to fully thaw in the refrigerator.

When thawing frozen foods under running water, begin by removing only the amount of food you need from the freezer. Make sure the food is tightly wrapped or placed in a watertight container. Place the wrapped food or container under cold running water of 70 degrees Fahrenheit (21 degrees Celsius) or less. Make sure the water doesn't directly touch the food and that the food doesn't directly touch the sink. Leave the food under running water until it is completely thawed.

When thawing frozen food in a microwave oven, begin by removing only the amount of food you need from the freezer. Put the food in a microwave-safe container. Adjust the microwave setting according to the manufacturer's instructions. Start the microwave. Thaw food in a microwave oven only in emergencies. Cook food immediately after microwave thawing. Microwave cooking causes food to lose moisture and reduces its quality. Following these simple sanitation tips can reduce the chance that you or the people to whom you serve food will suffer from foodborne illnesses.

### **3.5 FOOD SAFETY AWARENESS PROGRAMMES**

Anyone who consumes goods is a consumer. Consumers get exploited in the market. They respond to advertisements and buy goods. Generally

advertisements do not give all the information that a consumer needs to know or wants to know about a product. Some of the common methods of exploitation are—

1. Under weight and under measurements –not measured or weighed correctly
2. Substandard Quality –defective home appliances and medicines beyond expiry date
3. High prices—charging above the retail price
4. Duplicate Articles—selling fake items in the name of the original
5. Adulteration and Impurity—is done to get higher profits
6. Lack of safety Devices—absence of inbuilt safeguards in appliances
7. Artificial Scarcity—hoarding and black marketing
8. False and Incomplete Information—misleading information on quality, durability, and safety.
9. Unsatisfactory after sales Service—high cost items like electronics and cars require constant and regular service.
10. Rough behaviour and Undue conditions—harassment in getting LPG connection or a telephone connection.

## NOTES

### ***Factors Causing Exploitation of Consumers***

1. Limited Information—providing full and correct information will help in the choice
2. Limited Supplies—when goods and services are in short supply then price shoots up
3. Limited Competition.—single producer may manipulate the market in terms of price and stocks.
4. Low Literacy.—illiteracy leads to exploitation. Hence Consumer Awareness is essential.

### ***Rise of Consumer Awareness***

Kautilya was one of the earliest to write in his Arthashastra about the need for Consumer awareness and protection. With the growth of private sector there is a greater need for discipline and regulation of the market. Consumers must be aware of the sale and purchase of goods, the health and security aspects also. Ensuring the safety of food items sold in the market is essential these days.

Legal measures for consumer safety and consumer awareness must be uniform, and transparent in terms of prices, quality of goods, and stocks. Consumers must have the tools to combat malpractices and protect their rights.

### ***Rights and Duties of Consumers***

As codified under the Indian Laws the Consumers have the following

#### ***Rights***

1. Right to Safety—to protect against hazardous goods

**NOTES**

2. **Right to be Informed**—about price, quality, purity
3. **Right to Choose**—access to a variety of goods and services at competitive prices.
4. **Right to be Heard**—consumers interest and welfare must be taken care of
5. **Right to seek Redressal**—protection against unfair trade practices and settling genuine grievances.
6. **Right to Consumer Education.**—Knowledge about goods and issues related to consumers.

***Duties***

1. Get a bill for every important purchase and also the Warranty card
2. Check the ISI mark or Agmark on the goods
3. Form consumer awareness groups
4. Make a complaint on genuine grievances.
5. Consumers must know to exercise their rights.

***Consumer Protection Measure***

**1. Legislation Concerning Consumer Rights.**

The Consumer Protection Act 1986 provides for consumer disputes redressal at the state and national level. With the help of this law the agencies can solve grievances in a speedy, simple and inexpensive manner. A separate department of consumer affairs was set up at the state and central government. A three tier system of consumer courts at the National, State and District levels were set up. These agencies have done good work by handling lakhs of cases.

**2. Public Distribution System.**

To protect the poor from price rise and black marketing the government food security to the poor by supplying essentials through the ration or Fair price shops.

**3. Standardisation of Products.**

These are done to assure the quality of products. The ISI stamp on goods is placed by the Bureau of Indian standards. This caters to industrial and consumer goods. These goods can be trusted to conform to specific standards. A mark is meant for Agricultural products.

At the International level the International Organisation for Standardisation (ISO) located in Geneva sets common standards. The FAO and WHO provide food standards.

**Legal Formalities for Filing a Complaint.**

The complaint can be written on plain paper. The supporting documents like the warranty card must be attached. A lawyer is not required. We can argue our case.



## SUMMARY

### NOTES

1. Hygiene refers to the set of practices associated with the preservation of health and healthy living. Hygiene is a concept related to medicine, as well as to personal and professional care practices related to most aspects of living.
2. Foodborne illness (also foodborne disease and colloquially referred to as food poisoning) is any illness resulting from the consumption of contaminated food.
3. There are two types of food poisoning: food infection and food intoxication. Food infection refers to the presence of bacteria or other microbes which infect the body after consumption. Food intoxication refers to the ingestion of toxins contained within the food, including bacterially produced exotoxins, which can happen even when the microbe that produced the toxin is no longer present or able to cause infection.
4. The Food Standards Agency carries out a range of work to make sure food is safe to eat, including funding research on chemical, microbiological and radiological safety, as well as food hygiene and allergy.
5. The Food Safety and Standards Authority of India is an autonomous statutory Authority set up under the Food Safety and Standards Act, 2006 for laying down science based standards for articles of food and to regulate their manufacture, storage, distribution, sale and import, to ensure availability of safe and wholesome food for human consumption.
6. Cross contamination is all too common in kitchens today. Be sure to clean and sanitize any equipment used to prepare food between uses and be particularly vigilant when handling a potentially harmful food such as raw poultry, beef or fish.
7. Food safety training is an important part of risk management programs, especially in an environment with high staff turnover and a trend to employ casual staff. Food hygiene in hospital requires special attention to rigorous preventive measures to minimize the hazard of foodborne disease.

## GLOSSARY

**Cross-contamination:** refers to simply transfer of harmful microorganisms or substances to food and covers a multitude of potential food handling errors in all stages of food flow.

**Hygiene:** refers to the set of practices associated with the preservation of health and healthy living.

**Medical hygiene:** pertains to the hygiene practices related to the administration of medicine, and medical care.

**Body hygiene:** pertains to hygiene practices performed by an individual to care for one's bodily health and well being, through cleanliness.

**Foodborne illness:** (also foodborne disease and colloquially referred to as food poisoning) is any illness resulting from the consumption of contaminated food.

**Infectious dose:** the amount of agent that must be consumed to give rise to symptoms of foodborne illness.

**Food safety:** a scientific discipline describing handling, preparation, and storage of food in ways that prevent foodborne illness.

## NOTES

### REVIEW QUESTIONS

1. Why should the food borne diseases be prevented?
2. Discuss any two food borne illness and their prevention.
3. How is food service operation regulated in india?
4. How should food handlers take care of food safety? Point out.
5. Discuss the basic requirements to keep food safety in hotel.
6. What are the five most important food sanitation requirements?

### FURTHER READINGS

Caswell, J. (2000) "Economic approaches to measuring the significance of food safety in international trade" *International Journal of Food Microbiology* 62, pp. 261-266

Caswell, J. (1998) "Valuing the benefits and costs of improved food safety and nutrition"

Holleran, E., M. Bredahl, L. Zaibet (1999) "Private incentives for adopting food safety and quality assurance" *Food Policy* 24, pp. 669-683

Horton, L.R. (1998) "Food from developing countries: Steps to improve compliance" *Food and Drug Law Journal* 53(1), pp. 139-171

"Prevention and control of foodborne salmonellosis through the application of the hazard analysis critical control point (HACCP) system". Report of an ICMSF ad hoc Committee, WHO/CDS/VPH85.65, WHO, Geneva (1986).

Ramesh V. Bhat and R. Nagesswara Rao (1996), *Food safety*, Bappco (Ltd), Mysore, Bangalore.

Ramesh, V. Bhat and R. Nagesswar Rao (1992), *Food safety in public catering*, NIN, ICMR, Hyderabad.



## UNIT—IV

### NOTES

# FINANCIAL AND PERSONNEL MANAGEMENT

### OBJECTIVES

After going through this unit, students will be able to:

- explain financial management and planning;
- point out the importance of financial management;
- discuss the concept of cost accounting;
- understand cost reduction and cost control;
- state the method of costing;
- describe the concept of book keeping;
- explain the concept of personnel management;
- define human resource management.

### STRUCTURE

#### 4.1 Introduction

#### 4.2 Financial Management: Levels

- Characteristics of Sound Financial Plan
- Main Aspects of Financial Planning
- Responsibility of Financial Management

#### 4.3 Cost Accounting

- Objectives of Cost Accounting
- Concept of Cost
  - Elements of Cost
  - Classification of Cost
- Cost Reduction and Cost Control
- Techniques of Costing
- Principles of Cost Control
- Bookkeeping

#### 4.4 Personnel management

- Human Resource Management
- Summary
- Glossary
- Review Questions
- Further Readings

## **4.1 INTRODUCTION**

Financial management entails planning for the future of a person or a business enterprise to ensure a positive cash flow. It includes the administration and maintenance of financial assets. Besides, financial management covers the process of identifying and managing risks.

The primary concern of financial management is the assessment rather than the techniques of financial quantification. A financial manager looks at the available data to judge the performance of enterprises. Managerial finance is an interdisciplinary approach that borrows from both managerial accounting and corporate finance.

Some experts refer to financial management as the science of money management. The primary usage of this term is in the world of financing business activities. However, financial management is important at all levels of human existence because every entity needs to look after its finances.

## **4.2 FINANCIAL MANAGEMENT: LEVELS**

Broadly speaking, the process of financial management takes place at two levels. At the individual level, financial management involves tailoring expenses according to the financial resources of an individual. Individuals with surplus cash or access to funding invest their money to make up for the impact of taxation and inflation. Else, they spend it on discretionary items. They need to be able to take the financial decisions that are intended to benefit them in the long run and help them achieve their financial goals.

From an organizational point of view, the process of financial management is associated with financial planning and financial control. Financial planning seeks to quantify various financial resources available and plan the size and timing of expenditures. Financial control refers to monitoring cash flow. Inflow is the amount of money coming into a particular company, while outflow is a record of the expenditure being made by the company. Managing this movement of funds in relation to the budget is essential for a business.

At the corporate level, the main aim of the process of managing finances is to achieve the various goals a company sets at a given point of time. Businesses also seek to generate substantial amounts of profits, following a particular set of financial processes.

Financial managers aim to boost the levels of resources at their disposal. Besides, they control the functioning on money put in by external investors. Providing investors with sufficient amount of returns on their investments is one of the goals that every company tries to achieve. Efficient financial management ensures that this becomes possible.

## **NOTES**

Strong financial management in the business arena requires managers to be able to:

**NOTES**

1. Interpret financial reports including income statements, Profits and Loss or P&L, cash flow statements and balance sheet statements
2. Improve the allocation of working capital within business operations
3. Review and fine tune financial budgeting, and revenue and cost forecasting
4. Look at the funding options for business expansion, including both long and short term financing
5. Review the financial health of the company or business unit using ratio analyses, such as the gearing ratio, profit per employee and weighted cost of capital
6. Understand the various techniques using in project and asset valuations
7. Apply critical financial decision making techniques to assess whether to proceed with an investmtn
8. Understand valuations frameworks for businesses, portfolios and intangible assets

Finance is considered to be the life blood of business. Financial management is concerned with procurement and utilisation of funds in a proper way. Therefore, financial management enjoys great importance in an organisation. Financial management is crucial for the success of a business. Financial management is important because of the following advantages:

1. Financial management helps in obtaining sufficient funds at a minimum cost.
2. Financial management ensures effective utilisation of funds. Financial management tries to invest funds in various assets with a view to maximise the return on shareholder's investment.
3. Financial management tries to generate sufficient profits to finance expansion and modernisation of the enterprise and secure stable growth.
4. Financial management ensures safety of funds through creation of reserves, re-investment of profits, etc.

The primary aim of financial management is to maximise the wealth of shareholders. Shareholders are interested in wealth maximisation which depends upon the market price of the shares. If the market price of the shares increases, there is appreciation in the shareholders' wealth and vice versa. Thus the major goal of financial management is to maximise market price of equity shares of the company. This goal could be achieved by taking financial decision which are desirable for the growth of the company. The finance manager in a company makes decisions for the shareholders. He must implement financial decision which will ultimately prove gainful from the point of view of shareholder. The

shareholders gain if the value of shares increases in the market. However, this maximisation of the price of company's equity shares should be in the long run.

Besides wealth maximisation, the other objectives of financial management are as follows:

- (i) To procure sufficient funds for the business.
- (ii) To ensure effective utilisation of funds.
- (iii) To ensure safety of funds.
- (iv) To attain optimum capital structure.
- (v) To ensure adequate return to the shareholders.

Importance of finance cannot be over-emphasised. It is, indeed, the key to successful business operations. Without proper administration of finance, no business enterprise can reach its full potentials for growth and success. Money is a universal lubricant which keeps the enterprise dynamic-develops product, keeps men and machines at work, encourages management to make progress and creates values. The importance of financial administration can be discussed under the following heads:-

- (i) **Success of Promotion Depends on Financial Administration.** One of the most important reasons of failures of business promotions is a defective financial plan. If the plan adopted fails to provide sufficient capital to meet the requirement of fixed and fluctuating capital and particularly, the latter, or it fails to assume the obligations by the corporations without establishing earning power, the business cannot be carried on successfully. Hence sound financial plan is very necessary for the success of business enterprise.
- (ii) **Smooth Running of an Enterprise.** Sound Financial planning is necessary for the smooth running of an enterprise. Money is to an enterprise, what oil is to an engine. As, Finance is required at each stage of an enterprise, i.e., promotion, incorporation, development, expansion and administration of day-to-day working etc., proper administration of finance is very necessary. Proper financial administration means the study, analysis and evaluation of all financial problems to be faced by the management and to take proper decision with reference to the present circumstances in regard to the procurement and utilisation of funds.
- (iii) **Financial Administration Co-ordinates Various Functional Activities.** Financial administration provides complete co-ordination between various functional areas such as marketing, production etc. to achieve the organisational goals. If financial management is defective, the efficiency of all other departments can, in no way, be maintained. For example, it is very necessary for the finance-department to provide finance for the purchase of raw materials and meeting the other day-to-day expenses for the smooth running of the production unit. If financial department fails

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in its obligations, the Production and the sales will suffer and consequently, the income of the concern and the rate of profit on investment will also suffer. Thus Financial administration occupies a central place in the business organisation which controls and co-ordinates all other activities in the concern.

- (iv) **Focal Point of Decision Making.** Almost, every decision in the business is taken in the light of its profitability. Financial administration provides scientific analysis of all facts and figures through various financial tools, such as different financial statements, budgets etc., which help in evaluating the profitability of the plan in the given circumstances, so that a proper decision can be taken to minimise the risk involved in the plan.
- (v) **Determinant of Business Success.** It has been recognised, even in India that the financial manager plays a very important role in the success of business organisation by advising the top management the solutions of the various financial problems as experts. They present important facts and figures regarding financial position and the performance of various functions of the company in a given period before the top management in such a way so as to make it easier for the top management to evaluate the progress of the company to amend suitably the principles and policies of the company. The financial managers assist the top management in its decision making process by suggesting the best possible alternative out of the various alternatives of the problem available. Hence, financial management helps the management at different level in taking financial decisions.
- (vi) **Measure of Performance.** The performance of the firm can be measured by its financial results, i.e, by its size of earnings. Riskiness and profitability are two major factors which jointly determine the value of the concern. Financial decisions which increase risks will decrease the value of the firm and on the other hand, financial decisions which increase the profitability will increase value of the firm. Risk and profitability are two essential ingredients of a business concern.

### **Characteristics of a Sound Financial Plan**

The success of a business very much depends upon a financial plan (capital plan) based upon certain basic principles of corporation finance.

The essential characteristics of an ideal capital plan may briefly be summarised as follows:-

- (1) **Simplicity.** The capital plan of a company should be as simple as possible. By 'simplicity' we mean that the plan should be easily understandable to all and it should be free from complications, and/or suspicion-arising

statements. At the time of formulating capital structure of a company or issuing various securities to the public, it should be borne in mind that there would be no confusion in the mind of investors about their nature and profitability.

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- (2) **Foresight.** The planner should always keep in mind not only the needs of 'today' but also the needs of 'tomorrow' so that a sound capital structure (financial plan) may be formed. Capital requirements of a company can be estimated by the scope of operations and it must be planned in such a way that needs for capital may be predicted as accurately as possible. Although, it is difficult to predict the demand of the product yet it cannot be an excuse for the promoters to use foresight to the best advantage in building the capital structure of the company.
- (3) **Flexibility.** The capital structure of a company must be flexible enough to meet the capital requirements of the company. The financial plan should be chalked out in such a way that both increase and decrease in capital may be feasible. The company may require additional capital for financing scheme of modernisation, automation, betterment of employees etc. It is not difficult to increase the capital. It may be done by issuing fresh shares or debentures to the public or raising loans from special financial institutions, but reduction of capital is really a ticklish problem and needs statesman like dexterity.
- (4) **Intensive use.** Effective use of capital is as much necessary as its procurement. Every 'paisa' should be used properly for the prosperity of the enterprise. Wasteful use of capital is as bad as inadequate capital. There must be 'fair capitalisation' i.e., company must procure as much capital as requires nothing more and nothing less. Over-capitalisation and under capitalisation are both danger signals. Hence, there should neither be surplus nor deficit capital but procurement of adequate capital should be aimed at and every effort be made to make best use of it.
- (5) **Liquidity.** Liquidity means that a reasonable amount of current assets must be kept in the form of liquid cash so that business operations may be carried on smoothly without any shock to them due to shortage of funds. This cash ratio to current ratio to current assets depends upon a number of factors, e.g., the nature and size of the business, credit standing, goodwill and money market conditions etc.
- (6) **Economy.** The cost of capital procurement should always be kept in mind while formulating the financial plan. It should be the minimum possible. Dividend or interests to be paid to share holder (ordinary and preference) should not be a burden to the company in any way. But the cost of capital is not the only criterion, other factors should also be given due importance.

## Main Aspects of Financial Planning

There are mainly three aspects:

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- (1) **Determining Financial Objectives.** The main aspect of financial planning is to determine the long-term and the short-term financial objectives. Determining of financial objectives is necessary to achieve the basic objectives of the firm. Financial objectives guide the financial authorities in performing their duties well. Financial objectives may be long-term and short-term. The long-term financial objective of the firm should be to utilise the productive resources of the firm effectively and economically. The effective utilisation of all other productive factors is possible only if there is a regular supply of funds at minimum cost. Thus long term financial objectives include (a) proper capitalisation, i.e., to estimate the amount of capital to be raised and (b) determining the capital structure, i.e, the form, relationship and proportionate amount of securities to be issued.
- (2) **Formulating Financial Policies.** The second aspect of financial planning is to formulate certain policies to be followed by the financial authorities with regard to the administration of capital to achieve the long-term and the short-term financial objectives of the firm. The following financial policies maybe important in regard to-
  - i. Policies regarding estimation of capital requirements.
  - ii. Policies regarding relationship between the company and creditors.
  - iii. Policies regarding the form and proportionate amount of securities to be issued.
  - iv. Policies and guidelines regarding sources of raising capital.
  - v. Policies regarding distribution of earnings.
- (3) **Developing Financial Procedures.** The third aspect of financial planning is to develop the procedure for performing the financial activities. For this purpose, financial activities should be sub-divided into smaller activities and powers, duties and responsibilities be delegated to the sub-ordinate officers. Proper control on financial performance should also be administered. Financial control is possible by establishing standards for evaluating the performance and comparing the actual performance with the standard so established. Stern steps should be taken to control any deviations from or inconsistencies in predetermined objectives, policies and programmes. Various methods are used for this purpose such as budgetary control, cost-control, analysis and interpretation of financial accounts etc.

### **Responsibility of Financial Management**

The responsibilities of financial management or financial manager vary widely from one business unit to another, depending upon the size and the nature of the business.

In the light of this wide diversity of organisational practices, it is not surprising to find that in most of the company, financial officer is responsible for the routine finance functions. The main responsibilities of the financial officer are as follows:

- (1) **Financial Planning.** The main responsibility of the chief financial officer in a large concern is to forecast the needs and sources of finance and ensure the adequate supply cash at proper time for the smooth running of the business. He is to see that cash inflow and outflow must be uninterrupted and continuous. For this purpose, financial planning is necessary, i.e., he must decide the time when he needs money, the sources of supply of money and the investment patterns so that the company may meet its obligations properly and maintain its goodwill in the market. The financial manager is also to see that there is no surplus money in the business which earns nothing.
- (2) **Raising of Necessary Funds.** The second main responsibility of the financial officer is to see the nature of the need, i.e., whether finances are required for long-term or for short-term. He must assess the alternative sources of supply of finance taking into view the cost of raising funds, its effect on various concerned parties, i.e. shareholders, creditors, employees and the society, control and risk in financing and elasticity in capital structure etc.
- (3) **Controlling the Use of Funds.** The financial manager is also responsible for the proper utilization of funds. Assets must be used effectively so as to earn higher profits; inflow and outflow of cash must be controlled in a manner so as to meet the current as well as future obligations; unnecessary expenditure should be curtailed and there should be left no possibility for misappropriation of money.
- (4) **Disposition of Profits.** Appropriation of profits is one of the main responsibilities of the financial manager. He is to advise to the top executive as how much of the profits should be retained in the business as reserves for future expansion; how much to be used in repaying the debts; and how much to be distributed to the shareholders as dividend. On the basis of the advice given by the financial manager, the resolutions regarding depreciations, reserves, general reserves and distribution of dividends are carried out in the meeting of the board of directors of the company.
- (5) **Other Responsibilities.** Over and above, the responsibilities stated above, there are certain other responsibilities of the financial manager. These are:

### **NOTES**



**NOTES**

- (a) **Responsibility to owners.** Shareholders or stock-holders are the real owners of the concern. Financial manager has the prime responsibility to those who have committed funds to the enterprise. He should not only maintain the financial health of the enterprise, but should also help to produce a rate of earning that will reward the owners adequately for the risk capital they provide.
- (b) **Legal Obligations.** Financial manager is also under an obligation to consider the enterprise in the light of its legal obligations. A host of laws, taxes and rules and regulations cover nearly every move and policy. Good financial management help to develop a sound legal framework.
- (c) **Responsibilities of Employees.** The financial management must try to produce a healthy going concern capable of maintaining regular employment at satisfactory rate of pay under favourable working conditions. The long term financial interests of management, employees and owners are common.
- (d) **Responsibilities to Customers.** In order to make the payments of its customers' bill, the effective financial management is necessary. Sound financial management ensures the creditors continued supply of raw material.
- (e) **Wealth Maximization.** Prof. Solomon of Stanford University has argued that the main goal of the finance function is wealth maximization. The other goals may be achieved automatically.

In the light of the above discussion, we can conclude that the main responsibility of the financial manager is not only to maintain the financial health of the organisation but also to increase the economic welfare of the shareholders by utilizing the funds in an effective manner.

In order to determine and take a dispassionate view about what lies beneath the surface of accounting figures, a financial analyst has to make use of different management accounting techniques. Cost techniques have a precedence over the other techniques since accounting treatment of cost is often both complex and financially significant. For example, if a firm proposes to increase its output by 10%, is it reasonable to expect total cost to increase by less than 10%, exactly 10% or more than 10%? Such questions are concerned with the cost behavior, i.e. the way costs change with the levels of activity. The answers to these questions are very much pertinent for a management accountant or a financial analyst since

they are basic for a firm's projections and profits which ultimately become the basis of all financial decisions. It is, therefore, necessary for a financial analyst to have a reasonably good working knowledge about the basic cost concepts and patterns of cost behavior. All these come within the ambit of cost accounting.

### 4.3. COST ACCOUNTING

Previously, cost accounting was merely considered to be a technique for the ascertainment of costs of products or services on the basis of historical data. In course of time, due to competitive nature of the market, it was realized that ascertaining of cost is not so important as controlling costs. Hence, cost accounting started to be considered more as a technique for cost control as compared to cost ascertainment.

Due to the technological developments in all fields, cost reduction has also come within the ambit of cost accounting. Cost accounting is, thus, concerned with recording, classifying and summarizing costs for determination of costs of products or services, planning, controlling and reducing such costs and furnishing of information to management for decision making.

According to Charles T. Horngren, cost accounting is a quantitative method that accumulates, classifies, summarizes and interprets information for the following three major purposes:

- Operational planning and control
- Special decisions
- Product decisions

According to the Chartered Institute of Management Accountants, London, cost accounting is the process of accounting for costs from the point at which its expenditure is incurred or committed to the establishment of the ultimate relationship with cost units. In its widest sense, it embraces the preparation of statistical data, the application of cost control methods and the ascertainment of the profitability of the activities carried out or planned.

Cost accounting, thus, provides various information to management for all sorts of decisions. It serves multiple purposes on account of which it is generally indistinguishable from management accounting or so-called internal accounting. Wilmot has summarized the nature of cost accounting as "the analyzing, recording, standardizing, forecasting, comparing, reporting and recommending" and the role of a cost accountant as "a historian, news agent and prophet." As a historian, he should be meticulously accurate and sedulously impartial. As a news agent, he should be up to date, selective and pithy. As a prophet, he should combine knowledge and experience with foresight and courage.

## **Objectives of Cost Accounting**

The main objectives of cost accounting can be summarized as follows:

### **1. Determining Selling Price**

Business enterprises run on a profit-making basis. It is, thus, necessary that revenue should be greater than expenditure incurred in producing goods and services from which the revenue is to be derived. Cost accounting provides various information regarding the cost to make and sell such products or services. Of course, many other factors such as the condition of market, the area of distribution, the quantity which can be supplied etc. are also given due consideration by management before deciding upon the price but the cost plays a dominating role.

### **2. Determining and Controlling Efficiency**

Cost accounting involves a study of various operations used in manufacturing a product or providing a service. The study facilitates measuring the efficiency of an organization as a whole or department-wise as well as devising means of increasing efficiency.

Cost accounting also uses a number of methods, e.g., budgetary control, standard costing etc. for controlling costs. Each item viz. materials, labor and expenses is budgeted at the commencement of a period and actual expenses incurred are compared with budget. This greatly increases the operating efficiency of an enterprise.

### **3. Facilitating Preparation of Financial and Other Statements**

The third objective of cost accounting is to produce statements whenever is required by management. The financial statements are prepared under financial accounting generally once a year or half-year and are spaced too far with respect to time to meet the needs of management. In order to operate a business at a high level of efficiency, it is essential for management to have a frequent review of production, sales and operating results. Cost accounting provides daily, weekly or monthly volumes of units produced and accumulated costs with appropriate analysis. A developed cost accounting system provides immediate information regarding stock of raw materials, work-in-progress and finished goods. This helps in speedy preparation of financial statements.

### **4. Providing Basis for Operating Policy**

Cost accounting helps management to formulate operating policies. These policies may relate to any of the following matters:

- o Determination of a cost-volume-profit relationship
- o Shutting down or operating at a loss

## **NOTES**

- o Making for or buying from outside suppliers
- o Continuing with the existing plant and machinery or replacing them by improved and economic ones

## NOTES

### **Concept of Cost**

Cost accounting is concerned with cost and therefore is necessary to understand the meaning of term cost in a proper perspective.

In general, cost means the amount of expenditure (actual or notional) incurred on, or attributable to a given thing.

However, the term cost cannot be exactly defined. Its interpretation depends upon the following factors:

- The nature of business or industry
- The context in which it is used

In a business where selling and distribution expenses are quite nominal the cost of an article may be calculated without considering the selling and distribution overheads. At the same time, in a business where the nature of a product requires heavy selling and distribution expenses, the calculation of cost without taking into account the selling and distribution expenses may prove very costly to a business. The cost may be factory cost, office cost, cost of sales and even an item of expense. For example, prime cost includes expenditure on direct materials, direct labor and direct expenses. Money spent on materials is termed as cost of materials just like money spent on labor is called cost of labor and so on. Thus, the use of term cost without understanding the circumstances can be misleading.

Different costs are found for different purposes. The work-in-progress is valued at factory cost while stock of finished goods is valued at office cost. Numerous other examples can be given to show that the term "cost" does not mean the same thing under all circumstances and for all purposes. Many items of cost of production are handled in an optional manner which may give different costs for the same product or job without going against the accepted principles of cost accounting. Depreciation is one of such items. Its amount varies in accordance with the method of depreciation being used. However, endeavor should be, as far as possible, to obtain an accurate cost of a product or service.

### **Elements of Cost**

Following are the three broad elements of cost:

#### **1. Material**

The substance from which a product is made is known as material. It may be in a raw or a manufactured state. It can be direct as well as indirect.

##### **a. Direct Material**

**NOTES**

The material which becomes an integral part of a finished product and which can be conveniently assigned to specific physical unit is termed as direct material. Following are some of the examples of direct material:

- All material or components specifically purchased, produced or requisitioned from stores
- Primary packing material (e.g., carton, wrapping, cardboard, boxes etc.)
- Purchased or partly produced components

Direct material is also described as process material, prime cost material, production material, stores material, constructional material etc.

*b. Indirect Material*

The material which is used for purposes ancillary to the business and which cannot be conveniently assigned to specific physical units is termed as indirect material. Consumable stores, oil and waste, printing and stationery material etc. are some of the examples of indirect material.

Indirect material may be used in the factory, office or the selling and distribution divisions.

**2. Labor**

For conversion of materials into finished goods, human effort is needed and such human effort is called labor. Labor can be direct as well as indirect.

*a. Direct Labor*

The labor which actively and directly takes part in the production of a particular commodity is called direct labor. Direct labor costs are, therefore, specifically and conveniently traceable to specific products.

Direct labor can also be described as process labor, productive labor, operating labor, etc.

*b. Indirect Labor*

The labor employed for the purpose of carrying out tasks incidental to goods produced or services provided, is indirect labor. Such labor does not alter the construction, composition or condition of the product. It cannot be practically traced to specific units of output. Wages of storekeepers, foremen, timekeepers, directors' fees, salaries of salesmen etc, are examples of indirect labor costs.

Indirect labor may relate to the factory, the office or the selling and distribution divisions.

**3. Expenses**

Expenses may be direct or indirect.

*a. Direct Expenses*

These are the expenses that can be directly, conveniently and wholly allocated to specific cost centers or cost units. Examples of such expenses are as follows:

- Hire of some special machinery required for a particular contract
- Cost of defective work incurred in connection with a particular job or contract etc.

Direct expenses are sometimes also described as chargeable expenses.

*b. Indirect Expenses*

These are the expenses that cannot be directly, conveniently and wholly allocated to cost centers or cost units. Examples of such expenses are rent, lighting, insurance charges etc.

**4. Overhead**

The term overhead includes indirect material, indirect labor and indirect expenses. Thus, all indirect costs are overheads.

A manufacturing organization can broadly be divided into the following three divisions:

- o Factory or works, where production is done
- o Office and administration, where routine as well as policy matters are decided
- o Selling and distribution, where products are sold and finally dispatched to customers

Overheads may be incurred in a factory or office or selling and distribution divisions. Thus, overheads may be of three types:

*d. Factory Overheads*

They include the following things:

- Indirect material used in a factory such as lubricants, oil, consumable stores etc.
- Indirect labor such as gatekeeper, timekeeper, works manager's salary etc.
- Indirect expenses such as factory rent, factory insurance, factory lighting etc.

*e. Office and Administration Overheads*

They include the following things:

- Indirect materials used in an office such as printing and stationery material, brooms and dusters etc.
- Indirect labor such as salaries payable to office manager, office accountant, clerks, etc.

**NOTES**

**NOTES**

- Indirect expenses such as rent, insurance, lighting of the office

*f. Selling and Distribution Overheads*

They include the following things:

- Indirect materials used such as packing material, printing and stationery material etc.
- Indirect labor such as salaries of salesmen and sales manager etc.
- Indirect expenses such as rent, insurance, advertising expenses etc.

*Elements of Cost*

- Direct material
- Direct labor
- Direct expenses
- Overheads
- Factory overheads
- Selling and distribution overheads
- Office and administration overheads
- Indirect material
- Indirect labor
- Indirect expenses
- Indirect material
- Indirect labor
- Indirect expenses
- Indirect material
- Indirect labor
- Indirect expenses

*Components of Total Cost*

1. *Prime Cost*

Prime cost consists of costs of direct materials, direct labors and direct expenses. It is also known as basic, first or flat cost.

2. *Factory Cost*

Factory cost comprises prime cost and, in addition, works or factory overheads that include costs of indirect materials, indirect labors and indirect expenses incurred in a factory. It is also known as works cost, production or manufacturing cost.

### 3. Office Cost

Office cost is the sum of office and administration overheads and factory cost. This is also termed as administration cost or the total cost of production.

### 4. Total Cost

Selling and distribution overheads are added to the total cost of production to get total cost or the cost of sales.

## NOTES

### **Classification of Cost**

Cost may be classified into different categories depending upon the purpose of classification. Some of the important categories in which the costs are classified are as follows:

#### **1. Fixed, Variable and Semi-Variable Costs**

The cost which varies directly in proportion with every increase or decrease in the volume of output or production is known as variable cost. Some of its examples are as follows:

- Wages of laborers
- Cost of direct material
- Power

The cost which does not vary but remains constant within a given period of time and a range of activity inspite of the fluctuations in production is known as fixed cost. Some of its examples are as follows:

- Rent or rates
- Insurance charges
- Management salary

The cost which does not vary proportionately but simultaneously does not remain stationary at all times is known as semi-variable cost. It can also be named as semi-fixed cost. Some of its examples are as follows:

- Depreciation
- Repairs

Fixed costs are sometimes referred to as "period costs" and variable costs as "direct costs" in system of direct costing. Fixed costs can be further classified into:

- Committed fixed costs
- Discretionary fixed costs

Committed fixed costs consist largely of those fixed costs that arise from the possession of plant, equipment and a basic organization structure. For example,



**NOTES**

once a building is erected and a plant is installed, nothing much can be done to reduce the costs such as depreciation, property taxes, insurance and salaries of the key personnel etc. without impairing an organization's competence to meet the long-term goals.

Discretionary fixed costs are those which are set at fixed amount for specific time periods by the management in budgeting process. These costs directly reflect the top management policies and have no particular relationship with volume of output. These costs can, therefore, be reduced or entirely eliminated as demanded by the circumstances. Examples of such costs are research and development costs, advertising and sales promotion costs, donations, management consulting fees etc. These costs are also termed as managed or programmed costs.

In some circumstances, variable costs are classified into the following:

- Discretionary cost
- Engineered cost

The term discretionary costs is generally linked with the class of fixed cost. However, in the circumstances where management has predetermined that the organization would spend a certain percentage of its sales for the items like research, donations, sales promotion etc., discretionary costs will be of a variable character.

Engineered variable costs are those variable costs which are directly related to the production or sales level. These costs exist in those circumstances where specific relationship exists between input and output. For example, in an automobile industry there may be exact specifications as one radiator, two fan belts, one battery etc. would be required for one car. In a case where more than one car is to be produced, various inputs will have to be increased in the direct proportion of the output.

Thus, an increase in discretionary variable costs is due to the authorization of management whereas an increase in engineered variable costs is due to the volume of output or sales.

## **2. Product Costs and Period Costs**

The costs which are a part of the cost of a product rather than an expense of the period in which they are incurred are called as "product costs." They are included in inventory values. In financial statements, such costs are treated as assets until the goods they are assigned to are sold. They become an expense at that time. These costs may be fixed as well as variable, e.g., cost of raw materials and direct wages, depreciation on plant and equipment etc.

The costs which are not associated with production are called period costs. They are treated as an expense of the period in which they are incurred. They

may also be fixed as well as variable. Such costs include general administration costs, salaries salesmen and commission, depreciation on office facilities etc. They are charged against the revenue of the relevant period. Differences between opinions exist regarding whether certain costs should be considered as product or period costs. Some accountants feel that fixed manufacturing costs are more closely related to the passage of time than to the manufacturing of a product. Thus, according to them variable manufacturing costs are product costs whereas fixed manufacturing and other costs are period costs. However, their view does not seem to have been yet widely accepted.

## **NOTES**

### **3. Direct and Indirect Costs**

The expenses incurred on material and labor which are economically and easily traceable for a product, service or job are considered as direct costs. In the process of manufacturing of production of articles, materials are purchased, laborers are employed and the wages are paid to them. Certain other expenses are also incurred directly. All of these take an active and direct part in the manufacture of a particular commodity and hence are called direct costs.

The expenses incurred on those items which are not directly chargeable to production are known as indirect costs. For example, salaries of timekeepers, storekeepers and foremen. Also certain expenses incurred for running the administration are the indirect costs. All of these cannot be conveniently allocated to production and hence are called indirect costs.

### **4. Decision-Making Costs and Accounting Costs**

Decision-making costs are special purpose costs that are applicable only in the situation in which they are compiled. They have no universal application. They need not tie into routine-financial accounts. They do not and should not conform the accounting rules. Accounting costs are compiled primarily from financial statements. They have to be altered before they can be used for decision-making. Moreover, they are historical costs and show what has happened under an existing set of circumstances. Decision-making costs are future costs. They represent what is expected to happen under an assumed set of conditions. For example, accounting costs may show the cost of a product when the operations are manual whereas decision-making cost might be calculated to show the costs when the operations are mechanized.

### **5. Relevant and Irrelevant Costs**

Relevant costs are those which change by managerial decision. Irrelevant costs are those which do not get affected by the decision. For example, if a manufacturer is planning to close down an unprofitable retail sales shop, this will affect the wages payable to the workers of a shop. This is relevant in this connection since they will disappear on closing down of a shop. But prepaid rent of a shop or

unrecovered costs of any equipment which will have to be scrapped are irrelevant costs which should be ignored.

#### **6. Shutdown and Sunk Costs**

#### **NOTES**

A manufacturer or an organization may have to suspend its operations for a period on account of some temporary difficulties, e.g., shortage of raw material, non-availability of requisite labor etc. During this period, though no work is done yet certain fixed costs, such as rent and insurance of buildings, depreciation, maintenance etc., for the entire plant will have to be incurred. Such costs of the idle plant are known as shutdown costs.

Sunk costs are historical or past costs. These are the costs which have been created by a decision that was made in the past and cannot be changed by any decision that will be made in the future. Investments in plant and machinery, buildings etc. are prime examples of such costs. Since sunk costs cannot be altered by decisions made at the later stage, they are irrelevant for decision-making.

An individual may regret for purchasing or constructing an asset but this action could not be avoided by taking any subsequent action. Of course, an asset can be sold and the cost of the asset will be matched against the proceeds from sale of the asset for the purpose of determining gain or loss. The person may decide to continue to own the asset. In this case, the cost of asset will be matched against the revenue realized over its effective life. However, he/she cannot avoid the cost which has already been incurred by him/her for the acquisition of the asset. It is, as a matter of fact, sunk cost for all present and future decisions.

#### **7. Controllable and Uncontrollable Costs**

Controllable costs are those costs which can be influenced by the ratio or a specified member of the undertaking. The costs that cannot be influenced like this are termed as uncontrollable costs.

A factory is usually divided into a number of responsibility centers, each of which is in charge of a specific level of management. The officer incharge of a particular department can control costs only of those matte\$ which come directly under his control, not of other matte\$. For example, the expenditure incurred by tool room is controlled by the foreman incharge of that section but the share of the tool room expenditure which is apportioned to a machine shop cannot be controlled by the foreman of that shop. Thus, the difference between controllable and uncontrollable costs is only in relation to a particular individual or level of management. The expenditure which is controllable by an individual may be uncontrollable by another individual.

#### **8. Avoidable or Escapable Costs and Unavoidable or Inescapable Costs**

Avoidable costs are those which will be eliminated if a segment of a business (e.g., a product or department) with which they are directly related is discontinued.

## **NOTES**

Unavoidable costs are those which will not be eliminated with the segment. Such costs are merely reallocated if the segment is discontinued. For example, in case a product is discontinued, the salary of a factory manager or factory rent cannot be eliminated. It will simply mean that certain other products will have to absorb a large amount of such overheads. However, the salary of people attached to a product or the bad debts traceable to a product would be eliminated. Certain costs are partly avoidable and partly unavoidable. For example, closing of one department of a store might result in decrease in delivery expenses but not in their altogether elimination.

It is to be noted that only avoidable costs are relevant for deciding whether to continue or eliminate a segment of a business.

### **9. Imputed or Hypothetical Costs**

These are the costs which do not involve cash outlay. They are not included in cost accounts but are important for taking into consideration while making management decisions. For example, interest on capital is ignored in cost accounts though it is considered in financial accounts. In case two projects require unequal outlays of cash, the management should take into consideration the capital to judge the relative profitability of the projects.

### **10. Differentials, Incremental or Decrement Cost**

The difference in total cost between two alternatives is termed as differential cost. In case the choice of an alternative results in an increase in total cost, such increased costs are known as incremental costs. While assessing the profitability of a proposed change, the incremental costs are matched with incremental revenue.

### **11. Out-of-Pocket Costs**

Out-of-pocket cost means the present or future cash expenditure regarding a certain decision that will vary depending upon the nature of the decision made. For example, a company has its own trucks for transporting raw materials and finished products from one place to another. It seeks to replace these trucks by keeping public carriers. In making this decision, of course, the depreciation of the trucks is not to be considered but the management should take into account the present expenditure on fuel, salary to drive\$ and maintenance. Such costs are termed as out-of-pocket costs.

### **12. Opportunity Cost**

Opportunity cost refers to an advantage in measurable terms that have foregone on account of not using the facilities in the manner originally planned. For example, if a building is proposed to be utilized for housing a new project plant, the likely revenue which the building could fetch, if rented out, is the opportunity cost which should be taken into account while evaluating the

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profitability of the project. Suppose, a manufacturer is confronted with the problem of selecting anyone of the following alternatives:

- a. Selling a semi-finished product at \$. 2 per unit
- b. Introducing it into a further process to make it more refined and valuable  
Alternative (b) will prove to be remunerative only when after paying the cost of further processing, the amount realized by the sale of the product is more than \$. 2 per unit. Also, the revenue of \$. 2 per unit is foregone in case alternative (b) is adopted. The term "opportunity cost" refers to this alternative revenue foregone.

**13. Traceable, Untraceable or Common Costs**

The costs that can be easily identified with a department, process or product are termed as traceable costs. For example, the cost of direct material, direct labor etc. The costs that cannot be identified so are termed as untraceable or common costs. In other words, common costs are the costs incurred collectively for a number of cost centers and are to be suitably apportioned for determining the cost of individual cost centers. For example, overheads incurred for a factory as a whole, combined purchase cost for purchasing several materials in one consignment etc.

Joint cost is a kind of common cost. When two or more products are produced out of one material or process, the cost of such material or process is called joint cost. For example, when cottonseeds and cotton fibers are produced from the same material, the cost incurred till the split-off or separation point will be joint costs.

**14. Production, Administration and Selling and Distribution Costs**

A business organization performs a number of functions, e.g., production, illustration, selling and distribution, research and development. Costs are to be curtailed for each of these functions. The Chartered Institute of Management accountants, London, has defined each of the above costs as follows:

*i. Production Cost*

The cost of sequence of operations which begins with supplying materials, labor and services and ends with the primary packing of the product. Thus, it includes the cost of direct material, direct labor, direct expenses and factory overheads.

*ii. Administration Cost*

The cost of formulating the policy, directing the organization and controlling the operations of an undertaking which is not related directly to a production, selling, distribution, research or development activity or function.

iii. *Selling Cost*

It is the cost of selling to create and stimulate demand (sometimes termed as marketing) and of securing orders.

iv. *Distribution Cost*

It is the cost of sequence of operations beginning with making the packed product available for dispatch and ending with making the reconditioned returned empty package, if any, available for reuse.

v. *Research Cost*

It is the cost of searching for new or improved products, new application of materials, or new or improved methods.

vi. *Development Cost*

The cost of process which begins with the implementation of the decision to produce a new or improved product or employ a new or improved method and ends with the commencement of formal production of that product or by the method.

vii. *Pre-Production Cost*

The part of development cost incurred in making a trial production as preliminary to formal production is called pre-production cost.

## 15. Conversion Cost

The cost of transforming direct materials into finished products excluding direct material cost is known as conversion cost. It is usually taken as an aggregate of total cost of direct labor, direct expenses and factory overheads.

### *Cost Unit and Cost Center*

The technique of costing involves the following:

- Collection and classification of expenditure according to cost elements
- Allocation and apportionment of the expenditure to the cost centers or cost units or both

### **Cost Unit**

While preparing cost accounts, it becomes necessary to select a unit with which expenditure may be identified. The quantity upon which cost can be conveniently allocated is known as a unit of cost or cost unit. The Chartered Institute of Management Accountants, London defines a unit of cost as a unit of quantity of product, service or time in relation to which costs may be ascertained or expressed.

Unit selected should be unambiguous, simple and commonly used. Following are the examples of units of cost:

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(i) Brick works	per 1000 bricks made
(ii) Collieries	per ton of coal raised
(iii) Textile mills	per yard or per lb. of cloth manufactured or yarn spun
(iv) Electrical companies	per unit of electricity generated
(v) Transport companies	per passenger km.
(vi) Steel mills	per ton of steel made

**Cost Center**

According to the Chartered Institute of Management Accountants, London, cost center means "a location, person or item of equipment (or group of these) for which costs may be ascertained and used for the purpose of cost control." Thus, cost center refers to one of the convenient units into which the whole factory or an organization has been appropriately divided for costing purposes. Each such unit consists of a department, a sub-department or an item or equipment or machinery and a person or a group of persons. Sometimes, closely associated departments are combined together and considered as one unit for costing purposes. For example, in a laundry, activities such as collecting, sorting, marking and washing of clothes are performed. Each activity may be considered as a separate cost center and all costs relating to a particular cost center may be found out separately.

Cost centers may be classified as follows:

- Productive, unproductive and mixed cost centers
- Personal and impersonal cost centers
- Operation and process cost centers

Productive cost centers are those which are actually engaged in making products. Service or unproductive cost centers do not make the products but act as the essential aids for the productive centers. The examples of such service centers are as follows:

- Administration department
- Repairs and maintenance department
- Stores and drawing office department

Mixed costs centers are those which are engaged sometimes on productive and other times on service works. For example, a tool shop serves as a productive cost center when it manufactures dies and jigs to be charged to specific jobs or orders but serves as servicing cost center when it does repairs for the factory.

Impersonal cost center is one which consists of a department, a plant or an item of equipment whereas a personal cost center consists of a person or a group

of persons. In case a cost center consists of those machines or persons which carry out the same operation, it is termed as operation cost center. If a cost center consists of a continuous sequence of operations, it is called process cost center.

In case of an operation cost center, cost is analyzed and related to a series of operations in sequence such as in chemical industries, oil refineries and other process industries. The objective of such an analysis is to ascertain the cost of each operation irrespective of its location inside the factory.

## NOTES

### ***Cost Estimation and Cost Ascertainment***

Cost estimation is the process of pre-determining the cost of a certain product job or order. Such pre-determination may be required for several purposes. Some of the purposes are as follows:

- Budgeting
- Measurement of performance efficiency
- Preparation of financial statements (valuation of stocks etc.)
- Make or buy decisions
- Fixation of the sale prices of products

Cost ascertainment is the process of determining costs on the basis of actual data. Hence, the computation of historical cost is cost ascertainment while the computation of future costs is cost estimation.

Both cost estimation and cost ascertainment are interrelated and are of immense use to the management. In case a concern has a sound costing system, the ascertained costs will greatly help the management in the process of estimation of rational accurate costs which are necessary for a variety of purposes stated above. Moreover, the ascertained cost may be compared with the pre-determined costs on a continuing basis and proper and timely steps be taken for controlling costs and maximizing profits.

### ***Cost Allocation and Cost Apportionment***

Cost allocation and cost apportionment are the two procedures which describe the identification and allotment of costs to cost centers or cost units. Cost allocation refers to the allotment of all the items of cost to cost centers or cost units whereas cost apportionment refers to the allotment of proportions of items of cost to cost centers or cost units. Thus, the former involves the process of charging direct expenditure to cost centers or cost units whereas the latter involves the process of charging indirect expenditure to cost centers or cost units.

For example, the cost of labor engaged in a service department can be charged wholly and directly but the canteen expenses of the factory cannot be charged directly and wholly. Its proportionate share will have to be found out.



Charging of costs in the former case will be termed as "allocation of costs" whereas in the latter, it will be termed as "apportionment of costs."

## NOTES

### ***Cost Reduction and Cost Control***

Cost reduction and cost control are two different concepts. Cost control is achieving the cost target as its objective whereas cost reduction is directed to explore the possibilities of improving the targets. Thus, cost control ends when targets are achieved whereas cost reduction has no visible end. It is a continuous process. The difference between the two can be summarized as follows:

- i. Cost control aims at maintaining the costs in accordance with established standards whereas cost reduction is concerned with reducing costs. It changes all standards and endeavors to improve them continuously.
- ii. Cost control seeks to attain the lowest possible cost under existing conditions whereas cost reduction does not recognize any condition as permanent since a change will result in lowering the cost.
- iii. In case of cost control, emphasis is on past and present. In case of cost reduction, emphasis is on the present and future.
- iv. Cost control is a preventive function whereas cost reduction is a correlative function. It operates even when an efficient cost control system exists.

### ***Installation of Costing System***

The installation of a costing system requires careful consideration of the following two interrelated aspects:

- Overcoming the practical difficulties while introducing a system
- Main considerations that should govern the installation of such a system

### ***Practical Difficulties***

The important difficulties in the installation of a costing system and the suggestions to overcome them are as follows:

#### ***a. Lack of Support from Top Management***

Often, the costing system is introduced at the behest of the managing director or some other director without taking into confidence other members of the top management team. This results in opposition from various managers as they consider it interference as well as an uncalled check of their activities. They, therefore, resist the additional work involved in the cost accounting system.

This difficulty can be overcome by taking the top management into confidence before installing the system. A sense of cost consciousness has to be instilled in their minds.

### ***b. Resistance from the Staff***

The existing financial accounting staff may offer resistance to the system because of a feeling of their being declared redundant under the new system.

This fear can be overcome by explaining the staff that the costing system would not replace but strengthen the existing system. It will open new areas for development which will prove beneficial to them.

### ***c. Non-Cooperation at Other Levels***

The foreman and other supervisory staff may resent the additional paper work and may not cooperate in providing the basic data which is essential for the success of the system.

This needs re-orientation and education of employees. They have to be told of the advantages that will accrue to them and to the organization as a whole on account of efficient working of the system.

### ***d. Shortage of Trained Staff***

Costing is a specialized job in itself. In the beginning, a qualified staff may not be available. However, this difficulty can be overcome by giving the existing staff requisite training and recruiting additional staff if required.

### ***e. Heavy Costs***

The costing system will involve heavy costs unless it has been suitably designed to meet specific requirements. Unnecessary sophistication and formalities should be avoided. The costing office should serve as a useful service department.

## **Main Considerations**

In view of the above difficulties and suggestions, following should be the main considerations while introducing a costing system in a manufacturing organization:

### **1. Product**

The nature of a product determines to a great extent the type of costing system to be adopted. A product requiring high value of material content requires an elaborate system of materials control. Similarly, a product requiring high value of labor content requires an efficient time keeping and wage systems. The same is true in case of overheads.

### **2. Organization**

The existing organization structure should be distributed as little as possible. It becomes, therefore, necessary to ascertain the size and type of organization before introducing the costing system. The scope of authority of each executive, the sources from which a cost accountant has to derive information and reports to be submitted at various managerial levels should be carefully gone through.

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**3. Objective**

The objectives and information which management wants to achieve and acquire should also be taken care of. For example, if a concern wants to expand its operations, the system of costing should be designed in a way so as to give maximum attention to production aspect. On the other hand, if a concern were not in a position to sell its products, the selling aspect would require greater attention.

**4. Technical Details**

The system should be introduced after a detailed study of the technical aspects of the business. Efforts should be made to secure the sympathetic assistance and support of the principal members of the supervisory staff and workmen.

**5. Informative and Simple**

The system should be informative and simple. In this connection, the following points may be noted:

- (i) It should be capable of furnishing the fullest information required regularly and systematically, so that continuous study or check-up of the progress of business is possible.
- (ii) Standard printed forms can be used so as to make the information detailed, clear and intelligible. Over-elaboration which will only complicate matters should be avoided.
- (iii) Full information about departmental outputs, processes and operations should be clearly presented and every item of expenditure should be properly classified.
- (iv) Data, complete and reliable in all respects should be provided in a lucid form so that the measurement of the variations between actual and standard costs is possible.

**6. Method of Maintenance of Cost Records**

A choice has to be made between integral and non-integral accounting systems. In case of integral accounting system, no separate sets of books are maintained for costing transactions but they are interlocked with financial transactions into one set of books.

In case of non-integral system, separate books are maintained for cost and financial transactions. At the end of the accounting period, the results shown by two sets of books are reconciled. In case of a big business, it will be appropriate to maintain a separate set of books for cost transactions.

### 7. Elasticity

The costing system should be elastic and capable of adapting to the changing requirements of a business.

It may, therefore, be concluded from the above discussion that costing system introduced in any business will not be a success in case of the following circumstances:

1. If it is unduly complicated and expensive
2. If a cost accountant does not get the cooperation of his/her staff
3. If cost statements cannot be reconciled with financial statements
4. If the results actually achieved are not compared with the expected ones

### Methods of Costing

Costing can be defined as the technique and process of ascertaining costs. The principles in every method of costing are same but the methods of analyzing and presenting the costs differ with the nature of business. The methods of job costing are as follows:

#### 1. Job Costing

The system of job costing is used where production is not highly repetitive and in addition consists of distinct jobs so that the material and labor costs can be identified by order number.

This method of costing is very common in commercial foundries and drop forging shops and in plants making specialized industrial equipments. In all these cases, an account is opened for each job and all appropriate expenditure is charged thereto.

#### 2. Contract Costing

Contract costing does not in principle differ from job costing. A contract is a big job whereas a job is a small contract. The term is usually applied where large-scale contracts are carried out. In case of ship-builders, printers, building contractors etc., this system of costing is used. Job or contract is also termed as terminal costing.

#### 3. Cost Plus Costing

In contracts where in addition to cost, an agreed sum or percentage to cover overheads and fit is paid to a contractor, the system is termed as cost plus costing. The term cost here includes materials, labor and expenses incurred directly in the process of production. The system is used generally in cases where government happens to be the party to give contract.

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**4. Batch Costing**

This method is employed where orders or jobs are arranged in different batches after taking into account the convenience of producing articles. The unit of cost is a batch or a group of identical products instead of a single job order or contract. This method is particularly suitable for general engineering factories which produce components in convenient economic batches and pharmaceutical industries.

**5. Process Costing**

If a product passes through different stages, each distinct and well defined, it is desired to know the cost of production at each stage. In order to ascertain the same, process costing is employed under which a separate account is opened for each process.

This system of costing is suitable for the extractive industries, e.g., chemical manufacture, paints, foods, explosives, soap making etc.

**6. Operation Costing**

Operation costing is a further refinement of process costing. The system is employed in the industries of the following types:

- a. The industry in which mass or repetitive production is carried out
- b. The industry in which articles or components have to be stocked in semi-finished stage to facilitate the execution of special orders, or for the convenience of issue for later operations

The procedure of costing is broadly the same as process costing except that in this case, cost unit is an operation instead of a process. For example, the manufacturing of handles for bicycles involves a number of operations such as those of cutting steel sheets into proper strips molding, machining and finally polishing. The cost to complete these operations may be found out separately.

**7. Unit Costing (Output Costing or Single Costing)**

In this method, cost per unit of output or production is ascertained and the amount of each element constituting such cost is determined. In case where the products can be expressed in identical quantitative units and where manufacture is continuous, this type of costing is applied. Cost statements or cost sheets are prepared in which various items of expense are classified and the total expenditure is divided by the total quantity produced in order to arrive at per unit cost of production. The method is suitable in industries like brick making, collieries, flour mills, paper mills, cement manufacturing etc.

## 8. Operating Costing

This system is employed where expenses are incurred for provision of services such as those tendered by bus companies, electricity companies, or railway companies. The total expenses regarding operation are divided by the appropriate units (e.g., in case of bus company, total number of passenger/kms.) and cost per unit of service is calculated.

## 9. Departmental Costing

The ascertainment of the cost of output of each department separately is the objective of departmental costing. In case where a factory is divided into a number of departments, this method is adopted.

## 10. Multiple Costing (Composite Costing)

Under this system, the costs of different sections of production are combined after finding out the cost of each and every part manufactured. The system of ascertaining cost in this way is applicable where a product comprises many assailable parts, e.g., motor cars, engines or machine tools, typewrite\$, radios, cycles etc.

As various components differ from each other in a variety of ways such as price, materials used and manufacturing processes, a separate method of costing is employed in respect of each component. The type of costing where more than one method of costing is employed is called multiple costing.

It is to be noted that basically there are only two methods of costing viz. job costing and process costing. Job costing is employed in cases where expenses are traceable to specific jobs or orders, e.g., house building, ship building etc. In case where it is impossible to trace the prime cost of the items for a particular order because of the reason that their identity gets lost while manufacturing operations, process costing is used. For example, in a refinery where several tons of oil is being produced at the same time, the prime cost of a specific order of 10 tons cannot be traced. The cost can be found out only by finding out the cost per ton of total oil produced and then multiplying it by ten.

It may, therefore, be concluded that the methods of batch contract and cost plus costing are only the variants of job costing whereas the methods of unit, operation and operating costing are the variants of process costing.

### **Techniques of Costing**

Besides the above methods of costing, following are the types of costing techniques which are used by management only for controlling costs and making some important managerial decisions. As a matter of fact, they are not independent methods of cost finding such as job or process costing but are basically costing techniques which can be used as an advantage with any of the methods discussed above.

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**1. Marginal Costing**

Marginal costing is a technique of costing in which allocation of expenditure to production is restricted to those expenses which arise as a result of production, e.g., materials, labor, direct expenses and variable overheads. Fixed overheads are excluded in cases where production varies because it may give misleading results. The technique is useful in manufacturing industries with varying levels of output.

**2. Direct Costing**

The practice of charging all direct costs to operations, processes or products and leaving all indirect costs to be written off against profits in the period in which they arise is termed as direct costing. The technique differs from marginal costing because some fixed costs can be considered as direct costs in appropriate circumstances.

**3. Absorption or Full Costing**

The practice of charging all costs both variable and fixed to operations, products or processes is termed as absorption costing.

**4. Uniform Costing**

A technique where standardized principles and methods of cost accounting are employed by a number of different companies and firms is termed as uniform costing. Standardization may extend to the methods of costing, accounting classification including codes, methods of defining costs and charging depreciation, methods of allocating or apportioning overheads to cost centers or cost units. The system, thus, facilitates inter-firm comparisons, establishment of realistic pricing policies, etc.

***Systems of Costing***

It has already been stated that there are two main methods used to determine costs. These are:

- Job cost method
- Process cost method

It is possible to ascertain the costs under each of the above methods by two different ways:

- Historical costing
- Standard costing

**Historical Costing**

Historical costing can be of the following two types in nature:

- Post costing
- Continuous costing

### *Post Costing*

Post costing means ascertainment of cost after the production is completed. This is done by analyzing the financial accounts at the end of a period in such a way so as to disclose the cost of the units which have been produced.

For instance, if the cost of product A is to be calculated on this basis, one will have to wait till the materials are actually purchased and used, labor actually paid and overhead expenditure actually incurred. This system is used only for ascertaining the costs but not useful for exercising any control over costs, as one comes to know of things after they had taken place. It can serve as guidance for future production only when conditions in future continue to be the same.

### *Continuous Costing*

In case of this method, cost is ascertained as soon as a job is completed or even when a job is in progress. This is done usually before a job is over or product is made. In the process, actual expenditure on materials and wages and share of overheads are also estimated. Hence, the figure of cost ascertained in this case is not exact. But it has an advantage of providing cost information to the management promptly, thereby enabling it to take necessary corrective action on time. However, it neither provides any standard for judging current efficiency nor does it disclose what the cost of a job ought to have been.

### **Standard Costing**

Standard costing is a system under which the cost of a product is determined in advance on certain pre-determined standards. With reference to the example given in post costing, the cost of product A can be calculated in advance if one is in a position to estimate in advance the material labor and overheads that should be incurred over the product. All this requires an efficient system of cost accounting. However, this system will not be useful if a vigorous system of controlling costs and standard costs are not in force. Standard costing is becoming more and more popular nowadays.

### ***Principles of Cost Control***

Cost is important to all industry. Costs can be divided into two general classes; absolute costs and relative costs. Absolute cost measures the loss in value of assets. Relative cost involves a comparison between the chosen course of action and the course of action that was rejected. This cost of the alternative action - the action not taken - is often called the "opportunity cost".

The accountant is primarily concerned with the absolute cost. However, the forest engineer, the planner, the manager needs to be concerned with the alternative cost - the cost of the lost opportunity. Management has to be able to make comparisons between the policy that should be chosen and the policy that should be rejected. Such comparisons require the ability to predict costs, rather than merely record costs.

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Cost data are, of course, essential to the technique of cost prediction. However, the form in which much cost data are recorded limits accurate cost prediction to the field of comparable situations only. This limitation of accurate cost prediction may not be serious in industries where the production environment changes little from month to month or year to year. In harvesting, however, identical production situations are the exception rather than the rule. Unless the cost data are broken down and recorded as unit costs, and correlated with the factors that control their values, they are of little use in deciding between alternative procedures. Here, the approach to the problem of useful cost data is that of identification, isolation, and control of the factors affecting cost.

### *Basic Classification of Costs*

Costs are divided into two types: variable costs, and fixed costs. Variable costs vary per unit of production. For example, they may be the cost per cubic meter of wood yarded, per cubic meter of dirt excavated, etc. Fixed costs, on the other hand, are incurred only once and as additional units of production are produced, the unit costs fall. Examples of fixed costs would be equipment move-in costs and road access costs.

### *Total Cost and Unit-Cost Formulas*

As harvesting operations become more complicated and involve both fixed and variable costs, there usually is more than one way to accomplish a given task. It may be possible to change the quantity of one or both types of cost, and thus to arrive at a minimum total cost. Mathematically, the relationship existing between volume of production and costs can be expressed by the following equations:

$$\text{Total cost} = \text{fixed cost} + \text{variable cost} \times \text{output}$$

$$\text{Unit cost} = \frac{\text{fixed cost}}{\text{output}} + \text{variable cost}$$

In symbols using the first letters of the cost elements and N for the output or number of units of production, these simple formulas are

$$C = F + NV$$

$$UC = F/N + V$$

### *Breakeven Analysis*

A breakeven analysis determines the point at which one method becomes superior to another method of accomplishing some task or objective. Breakeven analysis is a common and important part of cost control.

One illustration of a breakeven analysis would be to compare two methods of road construction for a road that involves a limited amount of cut-and-fill earthwork. It would be possible to do the earthwork by hand or by bulldozer. If

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the manual method were adopted, the fixed costs would be low or non-existent. Payment would be done on a daily basis and would call for direct supervision by a foreman. The cost would be calculated by estimating the time required and multiplying this time by the average wages of the men employed. The men could also be paid on a piece-work basis. Alternatively, this work could be done by a bulldozer which would have to be moved in from another site. Let us assume that the cost of the hand labor would be \$0.60 per cubic meter and the bulldozer would cost \$0.40 per cubic meter and would require \$100 to move in from another site. The move-in cost for the bulldozer is a fixed cost, and is independent of the quantity of the earthwork handled. If the bulldozer is used, no economy will result unless the amount of earthwork is sufficient to carry the fixed cost plus the direct cost of the bulldozer operation.

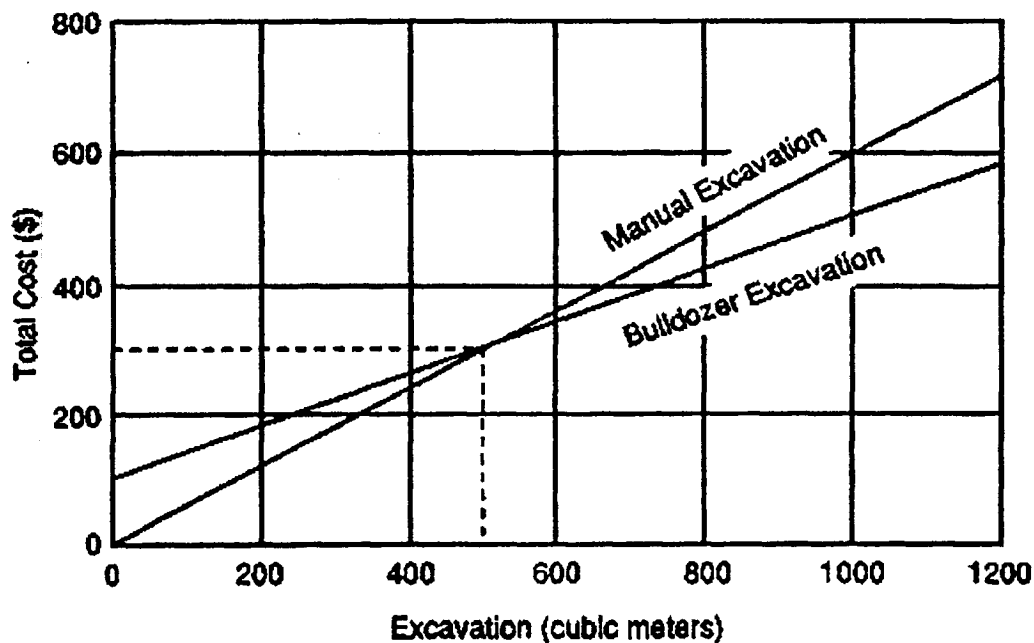


Fig. 1. Breakeven Example for Excavation.

If, on a set of coordinates, cost in dollars is plotted on the vertical axis and units of production on the horizontal axis, we can indicate fixed cost for any process by a horizontal line parallel to the x-axis. If variable cost per unit output is constant, then the total cost for any number of units of production will be the sum of the fixed cost and the variable cost multiplied by the number of units of production, or  $F + NV$ . If the cost data for two processes or methods, one of which has a higher variable cost, but lower fixed cost than the other are plotted on the same graph, the total cost lines will intersect at some point. At this point the levels of production and total cost are the same. This point is known as the "breakeven" point, since at this level one method is as economical as the other. Referring to Fig. 1 the breakeven point at which quantity the bulldozer alternative

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and the manual labor alternative become equal is at 500 cubic meters. We could have found this same result algebraically by writing  $F + NV = F' + NV'$  where  $F$  and  $V$  are the fixed and variable costs for the manual method, and  $F'$  and  $V'$  are the corresponding values for the bulldozer method. Since all values are known except  $N$ , we can solve for  $N$  using the formula  $N = (F' - F) / (V - V')$

$$N = \frac{100 - 0}{0.6 - 0.4} = 500$$

### Pricing

There are many ways in which the price of a product can be determined. The following are the foremost strategies that businesses are likely to use.

#### Competition-based pricing

Setting the price based upon prices of the similar competitor products.

Competitive pricing is based on three types of competitive product:

- Products have lasting distinctiveness from competitor's product. Here we can assume
  - o The product has low price elasticity.
  - o The product has low cross elasticity.
  - o The demand of the product will rise.
- Products have perishable distinctiveness from competitor's product, assuming the product features are medium distinctiveness.
- Products have little distinctiveness from competitor's product. assuming that:
  - o The product has high price elasticity.
  - o The product has some cross elasticity.
  - o No expectation that demand of the product will rise.

The pricing is done based on these three factors.

#### Cost-plus pricing

Cost-plus pricing is the simplest pricing method. The firm calculates the cost of producing the product and adds on a percentage (profit) to that price to give the selling price. This method although simple has two flaws; it takes no account of demand and there is no way of determining if potential customers will purchase the product at the calculated price.

$$\text{Price} = \text{Cost of Production} + \text{Margin of Profit.}$$

#### Creaming or skimming

Selling a product at a high price, sacrificing high sales to gain a high profit, therefore 'skimming' the market. Usually employed to reimburse the cost of investment of the original research into the product - commonly used in electronic

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markets when a new range, such as DVD players, are firstly dispatched into the market at a high price. This strategy is often used to target "early adopters" of a product/service. These early adopters are relatively less price sensitive because either their need for the product is more than others or they understand the value of the product better than others. This strategy is employed only for a limited duration to recover most of investment made to build the product. To gain further market share, a seller must use other pricing tactics such as economy or penetration.

**Limit pricing**

A limit price is the price set by a monopolist to discourage economic entry into a market, and is illegal in many countries. The limit price is the price that the entrant would face upon entering as long as the incumbent firm did not decrease output. The limit price is often lower than the average cost of production or just low enough to make entering not profitable. The quantity produced by the incumbent firm to act as a deterrent to entry is usually larger than would be optimal for a monopolist, but might still produce higher economic profits than would be earned under perfect competition. The problem with limit pricing as strategic behavior is that once the entrant has entered the market, the quantity used as a threat to deter entry is no longer the incumbent firm's best response. This means that for limit pricing to be an effective deterrent to entry, the threat must in some way be made credible. A way to achieve this is for the incumbent firm to constrain itself to produce a certain quantity whether entry occurs or not. An example of this would be if the firm signed a union contract to employ a certain (high) level of labor for a long period of time.

**Loss leader**

In the majority of cases, this pricing strategy is illegal under EU and US Competition rules. No market leader would wish to sell below cost unless this is part of its overall strategy. The idea of selling at a loss may appear to be in the public interest and therefore not often challenged. Only when the leader pushes up prices, it then becomes suspicious. Loss leadership can be similar to predatory pricing or cross subsidization; both seen as anti-competitive practices.

**Market-oriented pricing**

Setting a price based upon analysis and research compiled from the targeted market. Also with the cost price.

**Penetration pricing**

The price is deliberately set at low level to gain customer's interest and establishing a foot-hold in the market.

## **Price Discrimination**

Setting a different price for the same product in different segments to the market. For example, this can be for different ages or for different opening times, such as cinema tickets. Market orientated pricing is also a very simple form of pricing used by very new businesses. What it involves is, setting the price of your product/service according to research conducted on your target market.

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#### **Premium Pricing**

Premium pricing is the practice of keeping the price of a product or service artificially high in order to encourage favorable perceptions among buyers, based solely on the price. The practice is intended to exploit the (not necessarily justifiable) tendency for buyers to assume that expensive items enjoy an exceptional reputation or represent exceptional quality and distinction.

#### **Predatory pricing**

Aggressive pricing intended to drive out competitors from a market. It is illegal in some places.

#### **Contribution margin-based pricing**

Contribution margin-based pricing maximizes the profit derived from an individual product, based on the difference between the product's price and variable costs (the product's contribution margin per unit), and on one's assumptions regarding the relationship between the product's price and the number of units that can be sold at that price.

The product's contribution to total firm profit (i.e., to operating income) is maximized when a price is chosen that maximizes the following: (contribution margin per unit) X (number of units sold).

#### **Psychological pricing**

Pricing designed to have a positive psychological impact. For example, selling a product at \$3.95 or \$3.99, rather than \$4.

#### **Dynamic pricing**

A flexible pricing mechanism made possible by advances in information technology, and employed mostly by Internet based companies. By responding to market fluctuations or large amounts of data gathered from customers - ranging from where they live to what they buy to how much they have spent on past purchases-dynamic pricing allows online companies to adjust the prices of identical goods to correspond to a customer's willingness to pay. The airline industry is often cited as a dynamic pricing success story. In fact, it employs the technique so artfully that most of the passengers on any given airplane have paid different ticket prices for the same flight.

### **Price leadership**

An observation made of oligopic business behavior in which one company, usually the dominant competitor among several, leads the way in determining prices, the others soon following.

### **Target pricing**

Pricing method whereby the selling price of a product is calculated to produce a particular rate of return on investment for a specific volume of production. The target pricing method is used most often by public utilities, like electric and gas companies, and companies whose capital investment is high, like automobile manufacturers.

Target pricing is not useful for companies whose capital investment is low because, according to this formula, the selling price will be understated. Also the target pricing method is not keyed to the demand for the product, and if the entire volume is not sold, a company might sustain an overall budgetary loss on the product.

### **Absorption pricing**

Method of pricing in which all costs are recovered. The price of the product includes the variable cost of each item plus a proportionate amount of the fixed costs. A form of cost plus pricing

### **Marginal-cost pricing**

In business, the practice of setting the price of a product to equal the extra cost of producing an extra unit of output. By this policy, a producer charges, for each product unit sold, only the addition to total cost resulting from materials and direct labour. Businesses often set prices close to marginal cost during periods of poor sales. If, for example, an item has a marginal cost of \$1.00 and a normal selling price is \$2.00, the firm selling the item might wish to lower the price to \$1.10 if demand has waned. The business would choose this approach because the incremental profit of 10 cents from the transaction is better than no sale at all.

### ***The 9 Laws of Price Sensitivity***

In their book, "The Strategy and Tactics of Pricing", Thomas Nagle and Reed Holden outline 9 laws or factors that influence a buyer's price sensitivity with respect to a given purchase. The authors recommend that these 9 factors play an integral role in the development of any pricing strategy.

#### **(1) Reference Price Effect**

Buyer's price sensitivity for a given product increases the higher the product's price relative to perceived alternatives. Perceived alternatives can vary by buyer segment, by occasion, and other factors.

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**(2) Difficult Comparison Effect**

Buyers are less sensitive to the price of a known / more reputable product when they have difficulty comparing it to potential alternatives.

**(3) Switching Costs Effect**

The higher the product-specific investment a buyer must make to switch suppliers, the less price sensitive that buyer is when choosing between alternatives.

**(4) Price-Quality Effect**

Buyers are less sensitive to price the more that higher prices signal higher quality. Products for which this effect is particularly relevant include: image products, exclusive products, and products with minimal cues for quality.

**(5) Expenditure Effect**

Buyers are more price sensitive when the expense accounts for a large percentage of buyers' available income or budget.

**(6) End-Benefit Effect**

The effect refers to the relationship a given purchase has to a larger overall benefit, and is divided into two parts:

*Derived demand:* The more sensitive buyers are to the price of the end benefit, the more sensitive they will be to the prices of those products that contribute to that benefit.

*Price proportion cost:* The price proportion cost refers to the percent of the total cost of the end benefit accounted for by a given component that helps to produce the end benefit (e.g., think CPU and PCs). The smaller the given components share of the total cost of the end benefit, the less sensitive buyers will be to the component's price.

**(7) Shared-cost Effect**

The smaller the portion of the purchase price buyers must pay for themselves, the less price sensitive they will be.

**(8) Fairness Effect**

Buyers are more sensitive to the price of a product when the price is outside the range they perceive as "fair" or "reasonable" given the purchase context.

**(9) The Framing Effect**

Buyers are more price sensitive when they perceive the price as a loss rather than a forgone gain, and they have greater price sensitivity when the price is paid separately rather than as part of a bundle.

## **Book-Keeping**

Bookkeeping is the recording of financial transactions. Transactions include sales, purchases, income, and payments by an individual or organization. Bookkeeping is usually performed by a bookkeeper. Bookkeeping should not be confused with accounting. The accounting process is usually performed by an accountant. The accountant creates reports from the recorded financial transactions recorded by the bookkeeper. There are some common methods of bookkeeping such as the Single-entry bookkeeping system and the Double-entry bookkeeping system. But while these systems may be seen as "real" bookkeeping, any process that involves the recording of financial transactions is a bookkeeping process.

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### **Book-Keeper**

A bookkeeper (or book-keeper), also known as an accounting clerk or accounting technician, is a person who records the day-to-day financial transactions of an organisation. A bookkeeper is usually responsible for writing the "daybooks." The daybooks consist of purchase, sales, receipts, and payments. The bookkeeper is responsible for ensuring all transactions are recorded in the correct daybook, suppliers ledger, customer ledger, and general ledger. The bookkeeper brings the books to the trial balance stage. An accountant may prepare the income statement and balance sheet using the trial balance and ledgers prepared by the bookkeeper.

### **Book-Keeping Systems**

Two common bookkeeping systems used by businesses and other organizations are the single-entry bookkeeping system and the double-entry bookkeeping system. Single-entry bookkeeping uses only income and expense accounts, recorded primarily in a revenue and expense journal. Single-entry bookkeeping is adequate for many small businesses. Double-entry bookkeeping requires posting (recording) each transaction twice, using debits and credits.

### **Single-entry System**

The primary bookkeeping record in single-entry bookkeeping is the cash book, which is similar to a checking (chequing) account register but allocates the income and expenses to various income and expense accounts. Separate account records are maintained for petty cash, accounts payable and receivable, and other relevant transactions such as inventory and travel expenses.

### **Single account Bookkeeping**

Simple bookkeeping for individuals and families involves recording income, expenses, and current balance in a cash record book or a checking account register.

### **Double-entry System**

#### **Daybooks**

A daybook is a descriptive and chronological (diary-like) record of day-to-day financial transactions also called a book of original entry. The daybook's details



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must be entered formally into journals to enable posting to ledgers. Daybooks include:

- Sales daybook, for recording all the sales invoices.
- Sales credits daybook, for recording all the sales credit notes.
- Purchases daybook, for recording all the purchase invoices.
- Purchases credits daybook, for recording all the purchase credit notes.
- Cash daybook, usually known as the cash book, for recording all money received as well as money paid out. It may be split into two daybooks: receipts daybook for money received in, and payments daybook for money paid out.

### *Petty cash book*

A petty cash book is a record of small value purchases usually controlled by imprest system.

### **Journals**

A journal is a formal and chronological record of financial transactions before their values are accounted in general ledger as debits and credits. If daybooks are not kept, the journals are books of original entry, where the transactions are first recorded, hence often considered synonymous with daybooks. Special journals include: sales, purchases, cash receipts, cash disbursements, and payroll. A general journal is a record of the entries not included in other journals.

### **Ledgers**

A ledger (also known as a book of final entry) is a record of accounts, each recorded individually (on a separate page) with its balance. Unlike the journal listing chronologically all financial transactions without balances, the ledger summarizes values of one type of financial transactions per account, which constitute the basis for the balance sheet and income statement. Ledgers include:

- Customer ledger, for financial transactions with a customer (sometimes called a sales ledger).
- Supplier ledger, for financial transactions with a supplier (sometimes called a purchase ledger).
- General (nominal) ledger representing assets, liabilities, income, and expenses.

### **Chart of Accounts**

A chart of accounts is a list of the accounts codes that can be identified with numeric, alphabetical, or alphanumeric codes allowing the account to be located in the general ledger.

### Computerized Bookkeeping

Computerized bookkeeping removes many of the paper "books" that are used to record transactions and usually enforces double entry bookkeeping. Computer software increases the speed at which bookkeeping can be performed.

### NOTES

## 4.4 PERSONNEL MANAGEMENT

Personnel Management is an important aspect of educational administration for achieving the educational goals. This Education Department constitutes nearly one-third of the total government employees in the state. It involves a systematic process of recruitment, selection and posting of employees and pre-service and in-service training programmes for them.

### *Recruitment and Selection.*

The recruitment and selection of educational administrators/teachers/ clerical posts is done in two ways - one is by transfer or promotion from the feeder category and another is by direct recruitment. Generally 33% of vacancies are reserved for women. But in elementary schools 50% of vacancies are filled up by women teachers. The remaining 50% is generally filled up from among all. Direct Recruitment procedure given separately.

### *Postings and Transfers:*

All kinds of posting and transfer of teachers in all kinds of schools are made through counseling methods in a transparent and clean manner without giving any room for complaints.

The following are the welfare scheme for the Staff.

1. Pension Scheme for all Govt. & Aided school teachers.
2. Medical, Educational assistance through National Foundation for Teacher's Welfare fund.
3. Award for best Teachers
4. The age of retirement for teacher is 58 which is common to all. However the employment is extended till the end of the academic year if the teacher retires actually in the middle of the academic year.

In all organizations, there should be someone concerned with the welfare and performance of persons who are a part of the operation. When an individual or a team of individuals takes on this task of seeing to programs and setting policies that impact everyone associated with the company, they are engaged in the process of personnel management, sometimes referred to as human resources (HR) management.

The function of a personnel manager usually begins with the staffing process. The manager may be focused on screening and interviewing applicants, with an eye to placing individuals with the right skill sets in the right position within the

company. Along with placement, the HR manager may also oversee, or at least be involved in, the creation of entry level training programs, as well as continuing education opportunities for existing employees.

## **NOTES**

Determining company policies and procedures as they relate to personnel is another important aspect of the personnel management process. HR functions often include drafting vacation, sick leave, and bereavement policies that apply to all employees. The personnel management team is also often responsible for managing any healthcare program provided to the employees as well.

One aspect of company organization that needs the input of effective personnel management is the drafting of a company handbook. Establishing operation policies and procedures, requirements for employment, commendation and disciplinary procedures, and even something as simple as a dress code has to be compared with state and federal guidelines before the handbook is ready for release to the company at large. Personnel managers and the HR staff are ideal for drafting and reviewing the company handbook.

Sometimes overlooked in the course of personnel management is the emotional welfare of the employees. Increasingly, more personnel managers understand that a well-adjusted employee is an asset to the company. To this end, many people in charge of personnel management try to provide opportunities for employees who are in need of counseling to receive support from the company.

This support often involves scheduling time during working hours for the counseling sessions, and perhaps picking up the cost if insurance does not cover counseling. As with continuing educational programs, counseling is seen as another way that the company invests in the future relationship between the employee and the employer. A good HR manager understands this and will strive to make sure this sort of support is available.

Depending on the size of the organization, it may be possible for one person to handle all personnel management functions. As a company grows, it may be necessary to expand from a single personnel manager to a full-fledged personnel management, or Human Resources team. By understanding the needs of the company at each point in its growth, management can readily see to the addition to the Human Resources team over time.

### ***Human Resource Management***

Human resource management (HRM) is the strategic and coherent approach to the management of an organization's most valued assets - the people working there who individually and collectively contribute to the achievement of the objectives of the business. The terms "human resource management" and "human

resources" (HR) have largely replaced the term "personnel management" as a description of the processes involved in managing people in organizations. In simple sense, HRM means employing people, developing their resources, utilizing, maintaining and compensating their services in tune with the job and organizational requirement.

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### Features

Its features include:

- Organizational management
- Personnel administration
- Manpower management
- Industrial management

But these traditional expressions are becoming less common for the theoretical discipline. Sometimes even employee and industrial relations are confusingly listed as synonyms, although these normally refer to the relationship between management and workers and the behavior of workers in companies.

The theoretical discipline is based primarily on the assumption that employees are individuals with varying goals and needs, and as such should not be thought of as basic business resources, such as trucks and filing cabinets. The field takes a positive view of workers, assuming that virtually all wish to contribute to the enterprise productively, and that the main obstacles to their endeavors are lack of knowledge, insufficient training, and failures of process.

HRM is seen by practitioners in the field as a more innovative view of workplace management than the traditional approach. Its techniques force the managers of an enterprise to express their goals with specificity so that they can be understood and undertaken by the workforce, and to provide the resources needed for them to successfully accomplish their assignments. As such, HRM techniques, when properly practiced, are expressive of the goals and operating practices of the enterprise overall. HRM is also seen by many to have a key role in risk reduction within organizations. Synonyms such as personnel management are often used in a more restricted sense to describe activities that are necessary in the recruiting of a workforce, providing its members with payroll and benefits, and administering their work-life needs. So if we move to actual definitions, Torrington and Hall (1987) define personnel management as being:

"a series of activities which: first enable working people and their employing organisations to agree about the objectives and nature of their working relationship and, secondly, ensures that the agreement is fulfilled" (p. 49).— While Miller (1987) suggests that HRM relates to:

".....those decisions and actions which concern the management of employees at all levels in the business and which are related to the implementation of strategies directed towards creating and sustaining competitive advantage"

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### Functions

The Human Resources Management (HRM) function includes a variety of activities, and key among them is deciding what staffing needs you have and whether to use independent contractors or hire employees to fill these needs, recruiting and training the best employees, ensuring they are high performers, dealing with performance issues, and ensuring your personnel and management practices conform to various regulations. Activities also include managing your approach to employee benefits and compensation, employee records and personnel policies. Usually small businesses (for-profit or nonprofit) have to carry out these activities themselves because they can't yet afford part- or full-time help. However, they should always ensure that employees have — and are aware of — personnel policies which conform to current regulations. These policies are often in the form of employee manuals, which all employees have.

Note that some people distinguish a difference between HRM (a major management activity) and HRD (Human Resource Development, a profession). Those people might include HRM in HRD, explaining that HRD includes the broader range of activities to develop personnel inside of organizations, including, eg, career development, training, organization development, etc.

There is a long-standing argument about where HR-related functions should be organized into large organizations, eg, "should HR be in the Organization Development department or the other way around?"

The HRM function and HRD profession have undergone tremendous change over the past 20-30 years. Many years ago, large organizations looked to the "Personnel Department," mostly to manage the paperwork around hiring and paying people. More recently, organizations consider the "HR Department" as playing a major role in staffing, training and helping to manage people so that people and the organization are performing at maximum capability in a highly fulfilling manner.

### Job Analysis

Job Analysis refers to various methodologies for analyzing the requirements of a job.

### Purpose

The main purpose of conducting job analysis is to prepare job description and job specification which in turn helps to hire the right quality of workforce

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into the organization. The general purpose of job analysis is to document the requirements of a job and the work performed. Job and task analysis is performed as a basis for later improvements, including: definition of a job domain; describing a job; developing performance appraisals, selection systems, promotion criteria, training needs assessment, and compensation plans.

In the fields of Human Resources (HR) and Industrial Psychology, job analysis is often used to gather information for use in personnel selection, training, classification, and/or compensation.

The field of vocational rehabilitation uses job analysis to determine the physical requirements of a job to determine whether an individual who has suffered some diminished capacity is capable of performing the job with, or without, some accommodation.

Professionals developing certification exams use job analysis (often called something slightly different, such as "task analysis") to determine the elements of the domain which must be sampled in order to create a content valid exam. When a job analysis is conducted for the purpose of valuing the job (i.e., determining the appropriate compensation for incumbents) this is called "job evaluation."

**Methods**

There are several ways to conduct a job analysis, including: interviews with incumbents and supervisors, questionnaires (structured, open-ended, or both), observation, critical incident investigations, and gathering background information such as duty statements or classification specifications. In job analysis conducted by HR professionals, it is common to use more than one of these methods.

For example, the job analysts may tour the job site and observe workers performing their jobs.

During the tour the analyst may collect materials that directly or indirectly indicate required skills (duty statements, instructions, safety manuals, quality charts, etc).

The analyst may then meet with a group of workers or incumbents. And finally, a survey may be administered. In these cases, job analysts typically are industrial/organizational psychologists or Human Resource Officers who have been trained by, and are acting under the supervision of an industrial psychologist.

In the context of vocational rehabilitation, the primary method is direct observation and may even include video recordings of incumbents involved in the work. It is common for such job analysts to use scales and other apparatus to

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collect precise measures of the amount of strength or force required for various tasks. Accurate, factual evidence of the degree of strength required for job performance is needed to justify that a disabled worker is legitimately qualified for disability status. In the United States, billions of dollars are paid to disabled workers by private insurers and the federal government (primarily through the Social Security Administration).

Disability determination is, therefore, often a fairly "high-stakes" decision. Job analysts in these contexts typically come from a health occupation such as occupational or physical therapy.

Questionnaires are the most common methodology employed by certification test developers, although the content of the questionnaires (often lists of tasks that might be performed) are gathered through interviews or focus groups. Job analysts can at times operate under the supervision of a psychometrician.

### What Aspects of a Job Are Analyzed?

Job Analysis should collect information on the following areas:

- **Duties and Tasks.** The basic unit of a job is the performance of specific tasks and duties. Information to be collected about these items may include: frequency, duration, effort, skill, complexity, equipment, standards, etc.
- **Environment.** This may have a significant impact on the physical requirements to be able to perform a job. The work environment may include unpleasant conditions such as offensive odors and temperature extremes. There may also be definite risks to the incumbent such as noxious fumes, radioactive substances, hostile and aggressive people, and dangerous explosives.
- **Tools and Equipment.** Some duties and tasks are performed using specific equipment and tools. Equipment may include protective clothing. These items need to be specified in a Job Analysis.
- **Relationships.** Supervision given and received. Relationships with internal or external people.
- **Requirements.** The knowledges, skills, and abilities (KSA's) required to perform the job. While an incumbent may have higher KSA's than those required for the job, a Job Analysis typically only states the minimum requirements to perform the job.





## SUMMARY

### NOTES

1. Financial management entails planning for the future of a person or a business enterprise to ensure a positive cash flow. It includes the administration and maintenance of financial assets. Besides, financial management covers the process of identifying and managing risks.
2. The main aspect of financial planning is to determine the long-term and the short-term financial objectives. Determining of financial objectives is necessary to achieve the basic objectives of the firm.
3. Cost accounting, thus, provides various information to management for all sorts of decisions. It serves multiple purposes on account of which it is generally indistinguishable from management accounting or so-called internal accounting.
4. Cost reduction and cost control are two different concepts. Cost control is achieving the cost target as its objective whereas cost reduction is directed to explore the possibilities of improving the targets.
5. A breakeven analysis determines the point at which one method becomes superior to another method of accomplishing some task or objective. Breakeven analysis is a common and important part of cost control.
6. Bookkeeping is the recording of financial transactions. Transactions include sales, purchases, income, and payments by an individual or organization. Bookkeeping is usually performed by a bookkeeper.
7. Personnel Management is an important aspect of educational administration for achieving the educational goals. It involves a systematic process of recruitment, selection and posting of employees and pre-service and in-service training programmes.

## GLOSSARY

**Financial management:** it is associated with financial planning and financial control.

**Financial planning:** it seeks to quantify various financial resources available and plan the size and timing of expenditures.

**Financial control:** refers to monitoring cash flow. Inflow is the amount of money coming into a particular company, while outflow is a record of the expenditure being made by the company.

**Cost accounting:** it is concerned with cost and the appropriation of cost.

**Cost:** the amount of expenditure (actual or notional) incurred on, or attributable to a given thing.

**Prime cost:** consists of costs of direct materials, direct labors and direct expenses.

**Factory cost:** comprises prime cost and, in addition, works or factory overheads that include costs of indirect materials, indirect labors and indirect expenses incurred in a factory.

**Office cost:** it is the sum of office and administration overheads and factory cost.

**Bookkeeping:** the recording of financial transactions. Transactions include sales, purchases, income, and payments by an individual or organization.

**Personnel Management:** an important aspect of educational administration for achieving the educational goals.

**Human resource management (HRM):** it is a strategy and coherent approach to the management of an organization's most valued assets- the people working there who individually and collectively contribute to the achievement of the objectives of the business.

## NOTES

### REVIEW QUESTIONS

1. What are the primary significances of financial management?
2. Examine the three most important aspects of financial planning.
3. What are the main responsibilities of financial management?
4. What are the main purposes of cost accounting?
5. Define bookkeeping. What is the importance of it?
6. Explain the principles of cost control.
7. Write a short note on "Human Resource Management".

### FURTHER READINGS

Human Resources Management by Wendell L. French, Hardcover: 726 pages, Publisher: Houghton Mifflin Company

Modern Human Relations at Work by Richard M. Hodgetts, Kathryn W. Hegar, Hardcover: 512 pages, Publisher: South-Western College

Organizational Behavior: Managing People and Organizations by Gregory Moorhead, Hardcover: 628 pages, Publisher: Houghton Mifflin Company

Gitman, Lawrence (2003), Principles of Managerial Finance, 10th edition, Addison-Wesley Publishing, 2003

Weston, Fred and Brigham, Eugene (1972), Managerial Finance, Dryden Press, Hinsdale Illinois, 1972

Chen, Henry editor, (1967), Frontiers of Managerial Finance, Gulf Publishing, Houston Texas, 1967

Brigham, Eugene and Johnson, Ramon (1980), Issues in Managerial Finance, Holt Rinehart and Winston Publishers, Hindale Illinois, 1908