

# **ROLE OF EDUCATION AND TRAINING IN INCULCATING FOOD SAFETY CULTURE IN FOOD HANDLERS AND CONSUMERS**

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# FOOD ENVIRONMENT

**Food processing operations have moved out of individual households.**

Processed foods

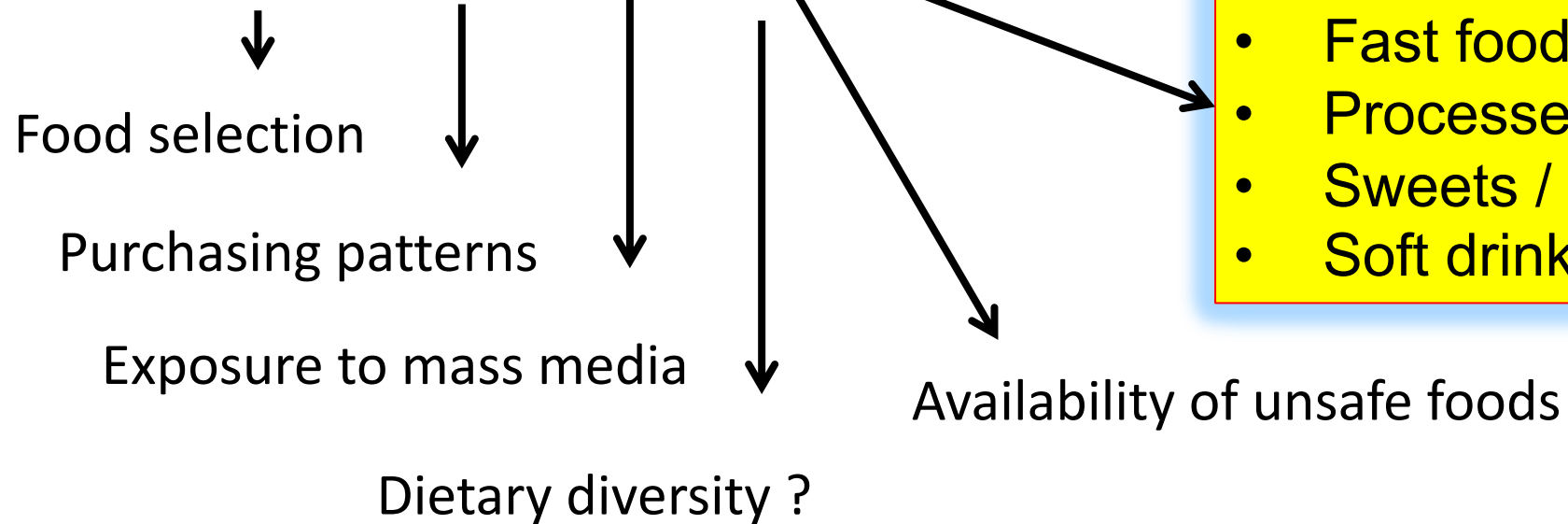
- Organized sector
- Unorganized sector

Hospitality industry  
Eating away from homes

- Agriculture: Demand and supply pattern
- Dietary and nutrition transition
- Lifestyle and Health
- Medical care

# THE FOOD BEHAVIOUR TRANSITION

## FOOD BEHAVIOUR



Easy access to

- Fast food vendors
- Processed foods
- Sweets / bakeries
- Soft drinks.

## REDUCTION

- Healthy foods
- Healthy ingredients

## INCREASE

- Highly processed foods
- Fats and sweets
- Sugar and salt
- Animal foods
- Chemicals

# THE CONFUSED CONSUMER

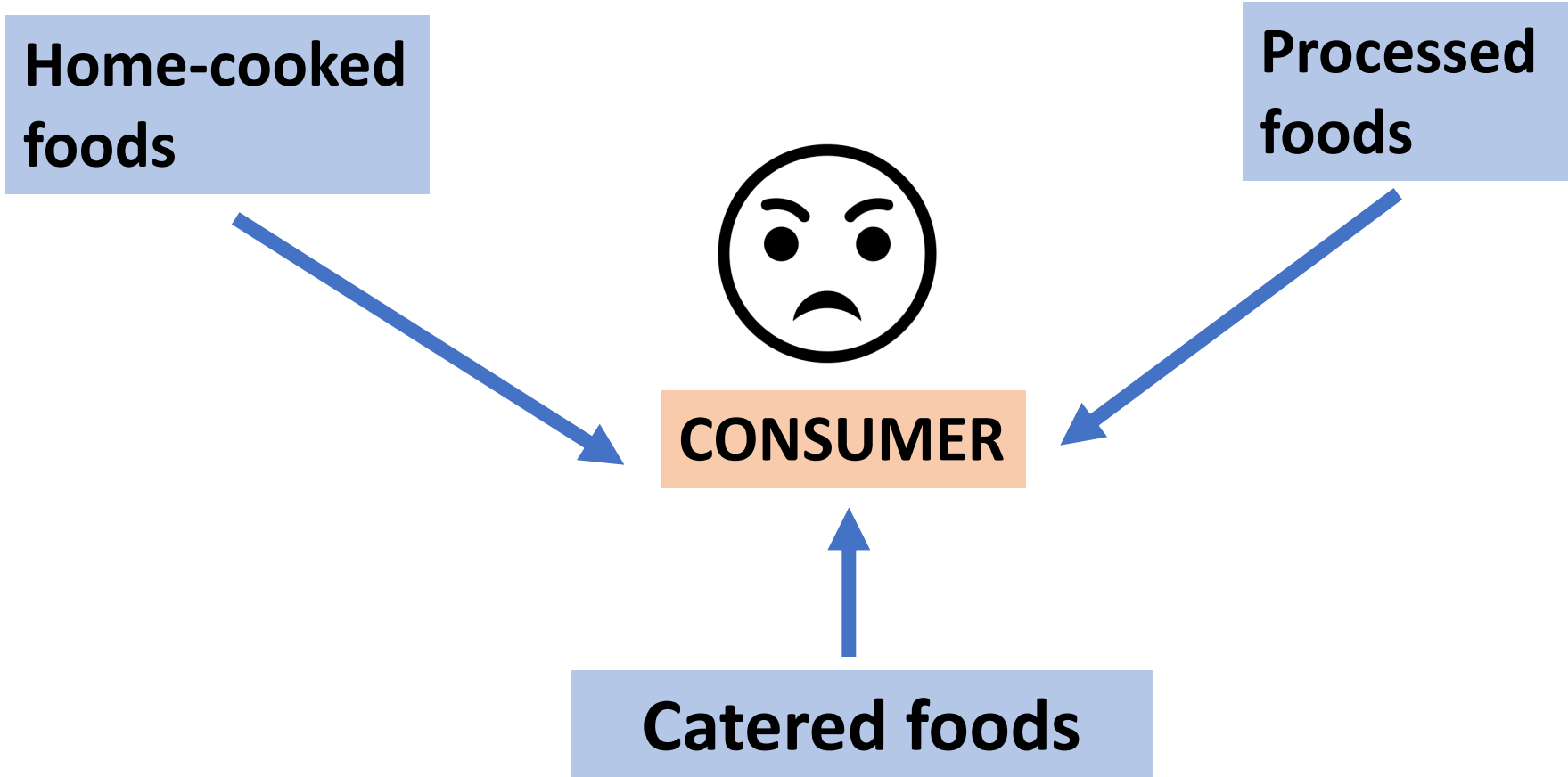
Home-cooked  
foods

Processed  
foods



CONSUMER

Catered foods



## Food choices - dictated by

- Taste
- Availability
- Affordability
- Convenience
- Nutrition
- Health

**Safety?**



**CONSUMER'S KNOWLEDGE  
AND AWARENESS LEVELS**

**Safety should be  
the first priority.**

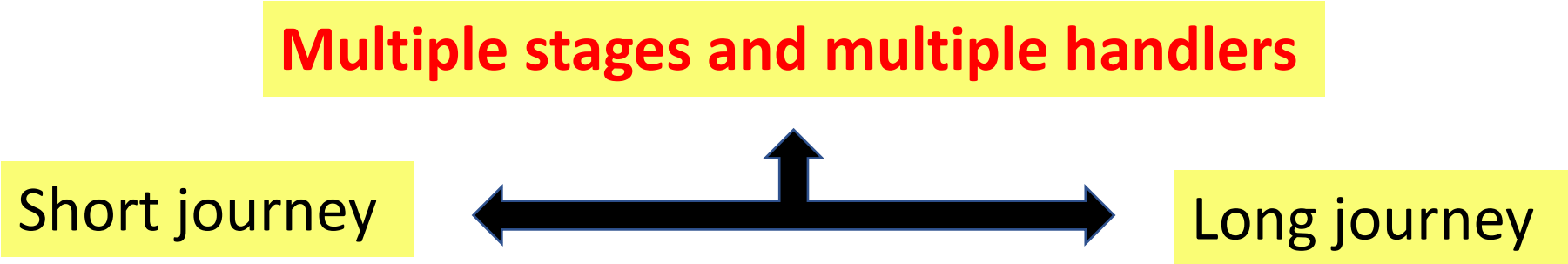


**Important from Public  
health point of view.**

**Nutrition is important too!!**

# FOOD HANDLERS IN THE FOOD SUPPLY CHAIN

The journey of agricultural commodities from farm - from the stage of harvest to the ready-to-eat end product.




Farmer, transporter, retailer, food processor, multiple food business operators, consumer .....

*Food can get contaminated at any point in the supply chain.*

## The safety concerns

- Growing with pesticides, chemical fertilizers
- Contaminated produce – grown in unclean water
- Non-permitted additives
- Unsafe catered foods
- Adulteration
- Unsafe packaging
- Use of plastics
- Use of antibiotics and hormones for animal foods
- Fraudulent practices (expired date products)



Eating away from home : Major change in food behavior observed both in urban and rural population.

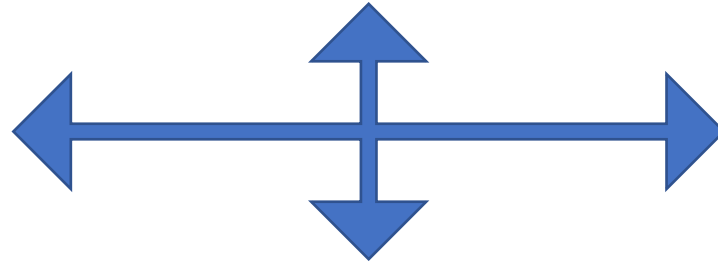
- Affordability
- Increase in FBO
- More number of working women
- Easy access to processed and catered foods
- Online order and Home deliveries of food
- Availability of services - 24x7.
- Exposure to internet and mass media – advertisements.

**Safety and nutritional composition of foods - Hidden quality**



**The need for education and training**

Food handler



Consumer

**FOOD SAFETY CULTURE**

**Knowledge, practice and attitude**

**Behaviour change  
Habit/practice**

**Education, training and re-training**

## Adopting food safety culture: The underlying issues

Social issues - Resource poor diverse setting

- Poverty
- Ignorance
- Living environs
- Water resources
- Sanitation facilities

Low Literacy levels

- Illiterate
- 4-8 years of schooling
- 10-12 years of schooling
- Graduate.

Health literacy?  
Nutrition literacy?

No formal training in food handling

**A food handler may not be equipped to adopt food safety culture.**

**Food and water borne infections are one of the leading causes of illness among young and old alike, specially in developing countries.**

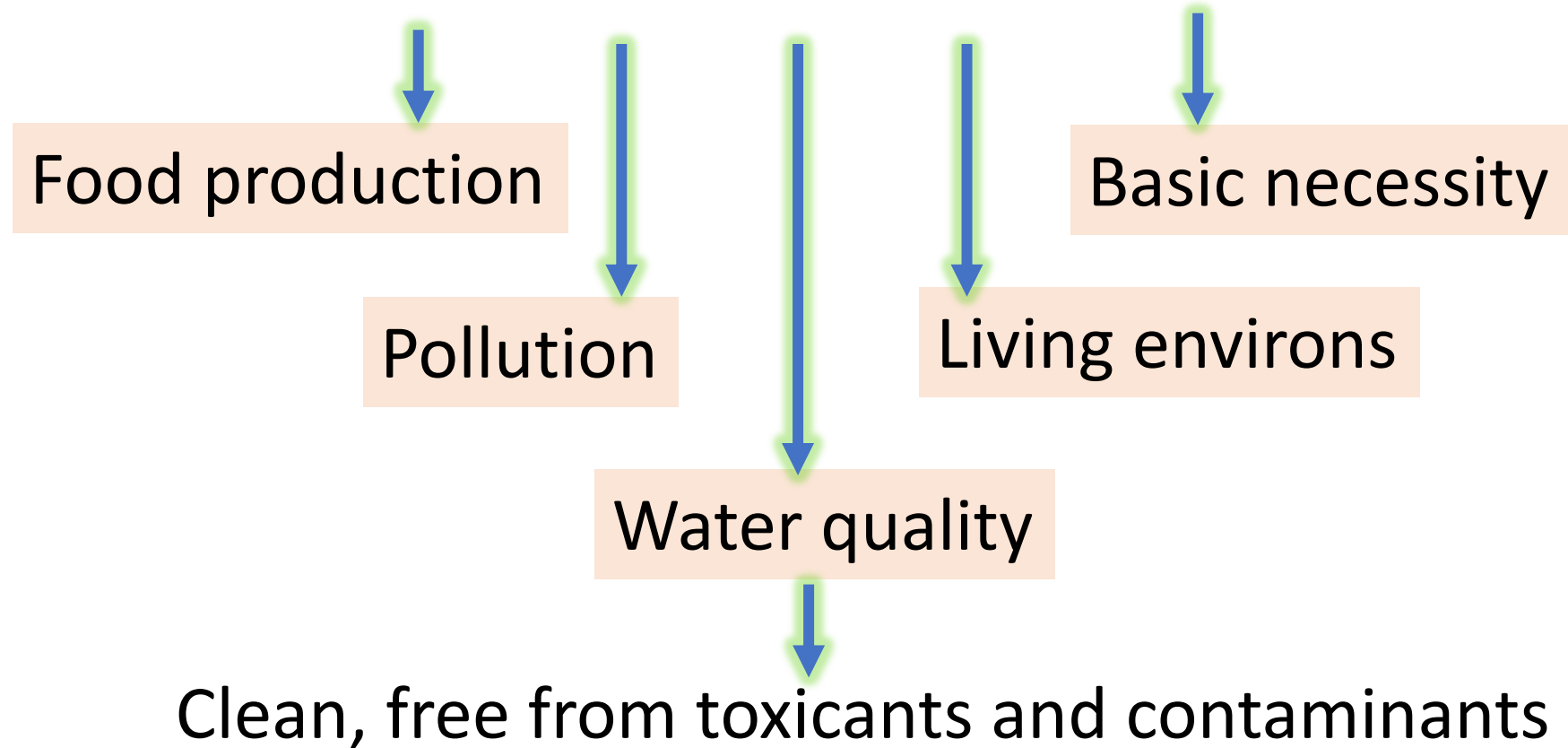
In India, Foodborne diseases cost around \$28 billion every year  
(Rs. 1,78,100 crore).

(Food for all- partnership of World Bank Group & Netherlands Govt.).

Tip of the iceberg as incidences are underreported.

**Appropriate food safety measures can help to mitigate these.**

# WATER LINKAGES TO FOOD SAFETY



Adequate and safe water needed for improved health.

**Water and Malnutrition:** GI diseases caused due to poor hygiene inhibit nutrient absorption.

- 4.2 billion – without safe sanitation services.
- 3 billion – do not have basic handwashing facility.

Improved water /sanitation/ hygiene has potential to prevent -

- 9.1% of global disease burden (least estimate)
- 6.3% of all deaths. (WHO)

Sadoff & Smith, IFPRI Blogposts, June 2020,

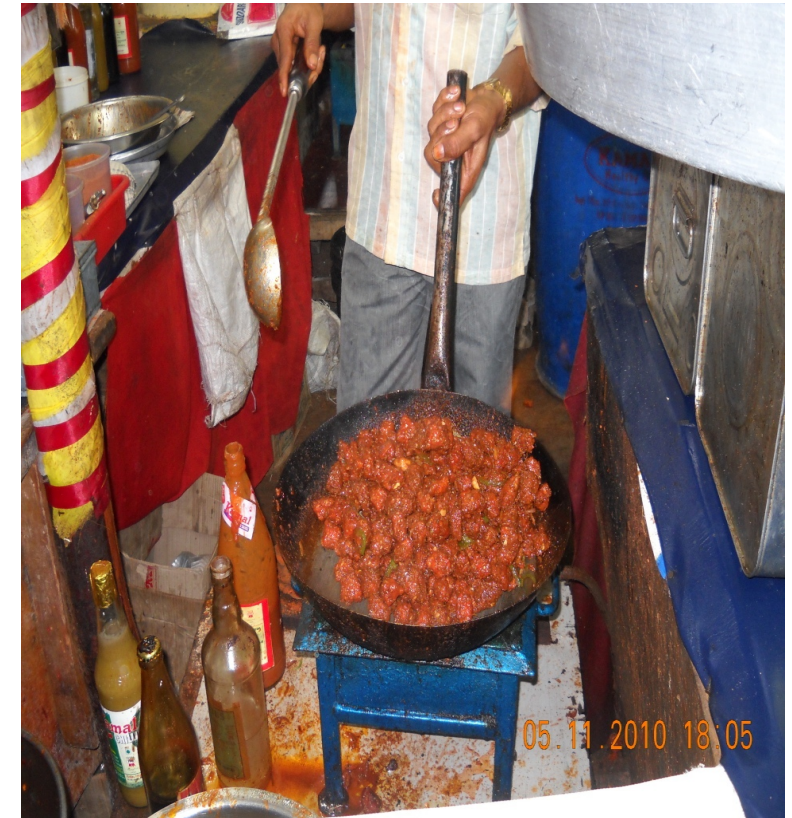
***World Economic Forum 2020 Global Risk report – Risk from water crisis is more than the risk from infections, diseases or food crisis.***

# OUR EXPERIENCES.....



## For effective training

- Trainee characteristics
- Training design
- Work environment.



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## Multiple Awareness creation and Training programs for Qualitative improvement of diets and food services

Consumers/ Community	Foodservice providers
School children – Integrating food safety in school systems through various modes	Education program for cooks and helpers of mid day school meal program
Parents of pre-school children – Safety and nutrition of packed school meals	Education and training for cooks of residential schools of Karnataka state
Popular lectures on food safety	Street food vendors
School children from rural area – Hygiene and drinking water quality	Food handlers from Restaurants, Catering facilities, Hospital food service, School foodservice, Food courts in shopping centers, etc.
Health workers - Safe & Nutritious foods	
Community workers	

## COMMUNITY: Role of water in health - Hygienic habits related to water

### Study

**Participants:** School children from 5 villages.

**Tools and techniques:** Education regarding role of water in health, specifically, hygiene related to water, Washing hands, drinking clean water.

### Results:

- Increase in knowledge and awareness regarding hygiene and using clean water.
- Significant reduction in overall morbidity, specifically in helminthic infection by over 70% as evidenced by fecal examination.



# FOODSERVICE PROVIDERS: Mid-day Meal Program - Operational constraints and impact of training on food handlers

Area: 20 Schools, each 300-600 children [10 Rural and 10 Urban]

Initial assessment

Training program for cooks and teachers in multiple sessions in food safety & nutrition

Follow-up assessment after 3 months

Improvements in Multiple sectors

- Infra-structural facilities
- Hygienic Practices
- Food storage
- Serving of Food
- Nutrition, Kitchen garden
- Water supply and washing facilities
- Handling food waste

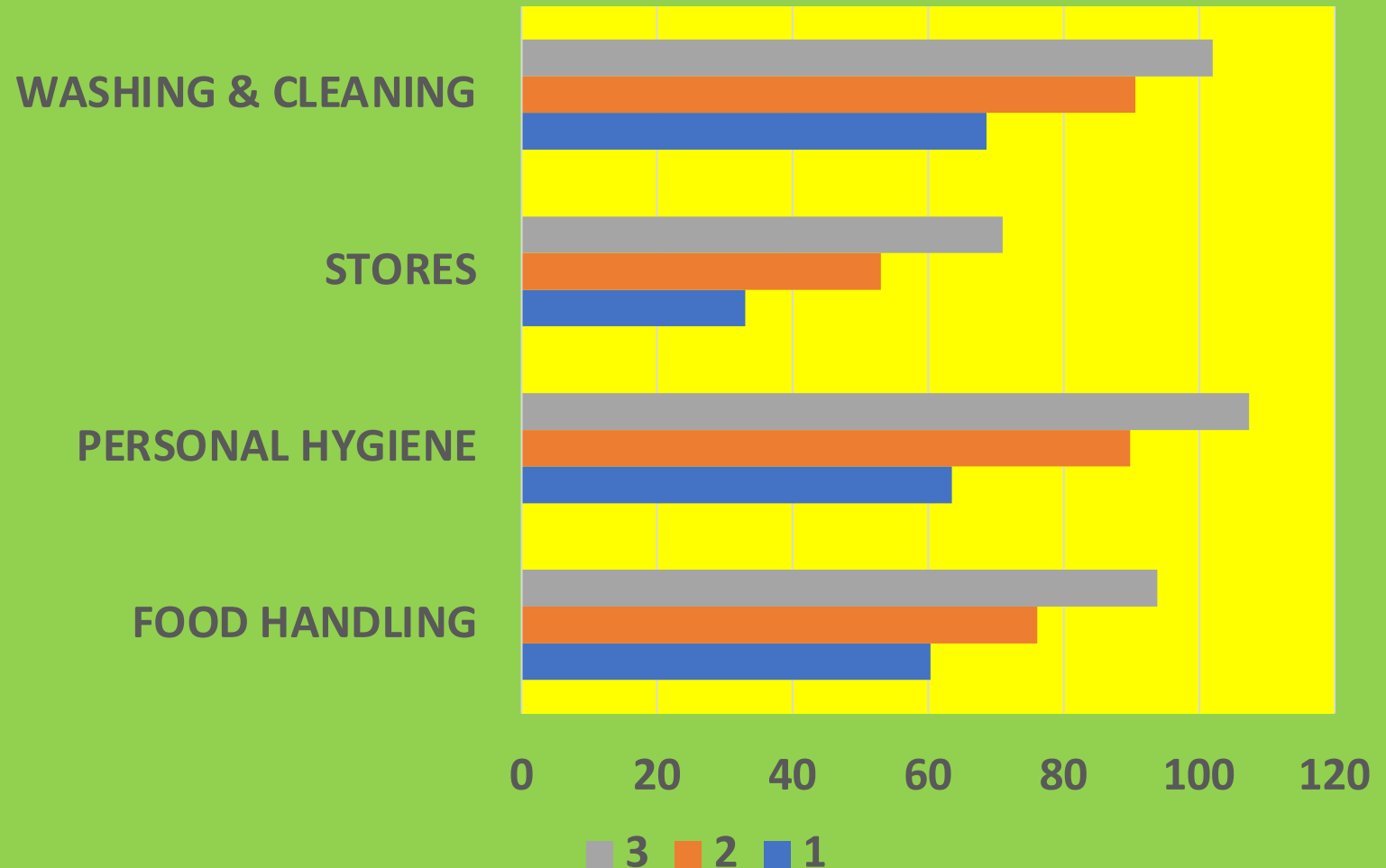
## Study- Eight Restaurants in Bengaluru city.

- Development of Training modules.
- Three tailor made training sessions given for each trainee over 3 months].
- Pre- & post assessment done [at monthly intervals for 3 months.]

A significant improvement observed in all aspects of food handling with repeated trainings.

[Mamatha & Prakash, 2018]

### Impact of training on Percent improvement in KAP scores of food handlers



## Experiences during training

### The Minuses

#### Constraints for training

- Reluctance from management to take part in study.
- High rate of attrition and turnover.
- Time needed for training.
- Creation of proper facilities for following food safety.

### The Pluses

- Good cooperation from the food handlers
- Positive attitude
- Willingness to learn
- Better compliance from workers with lower level of education
- Wanted more trainings

**Training enhances knowledge and improves behaviour**

## Food Safety and Standards Authority of India

Recommendation: All licensed food businesses must have at least one trained and certified Food Safety Supervisor under FoSTaC for every 25 food handlers in each premise. Food safety Trainings Certifications are -

- Basic level certification for food business [Duration: 4 h].

- (1) Street Food Vending,
- (2) Catering,
- (3) Manufacturing / Processing,
- (4) Storage & Transport
- (5) Retail & Distribution

- Advanced courses & certification for State & Central Licensed food business, [Duration: 8 h].

- (1) Catering
- (2) Manufacturing / Processing,
- (3) Storage & Transport,
- (4) Retail & Distribution

- Special courses for food businesses which require special attention, [Duration: 8-12 h].

- (1) Milk & Milk Products
- (2) Meat & Poultry
- (3) Fish & Sea Food
- (4) Packaged Water
- (5) Bakery (Level 1)
- (6) Bakery (Level 2)
- (7) Edible Oil and Fat
- (8) Health Supplement

## To Summarize

- There has been a dramatic rise in consumption of processed and catered foods across the globe with two major concerns, safety of foods and nutritional composition.
- Food safety can be ensured with adequate education and training of food handlers across all levels.
- This is a continuous process, and needs frequent reinforcement to ensure quality and compliance to food regulations.

**Thank you.**