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FOOD SAFETY AND PUBLIC HEALTH - A CRITICAL ANALYSIS

Under The Guidance and Supervision of

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CERTIFICATE

This is to certify that **ADISH A S,** REG NO: LM0324002 has submitted his Dissertation titled "Food Safety and Public Health-A Critical Analysis" in partial fulfilment of the requirement for the award of Degree in Master of Laws in Public Health Law to the National University of Advanced Legal Studies, Kochi under my guidance and supervision. It is also affirmed that the dissertation submitted by him is original, bona fide and genuine.

Date: 21/05/2025

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DECLARATION

I, ADISH A S, do hereby declare that this dissertation work titled “Food Safety and Public Health- A Critical Analysis.” researched and submitted by me to the National University of Advanced Legal Studies in partial fulfilment of the requirement for the award of degree of master of laws in Public Health Law under the guidance and supervision of Dr Ambily P, Assistant Professor, The National University of Advanced Legal studies is an Original, Bonafide and Legitimate work. It has been pursued for an academic interest. This work or any type thereof has not been submitted by me or anyone else for the award of another degree of either this university or any other university.

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ADISH A S

PREFACE

Food safety is an integral component of public health, with far-reaching consequences for the well-being of individuals and the development of nations. In India, where a significant portion of the population depends on processed and packaged food, ensuring the safety, quality, and integrity of food products is not merely a regulatory obligation but a public necessity. My interest in this subject stems from a deep concern for the rising instances of food adulteration, lapses in regulatory enforcement, and their collective impact on the right to health and life enshrined under the Indian Constitution.

This dissertation, titled "Food Safety and Public Health in India: A Critical Analysis", explores the effectiveness of the legal and institutional frameworks governing food safety in India while evaluating the role of national and international standards in shaping the regulatory landscape. The study also delves into landmark judicial pronouncements, policy developments, and enforcement challenges that underscore the urgent need for reform and greater accountability.

The research draws from a wide spectrum of sources, including statutes, judicial decisions, reports from regulatory bodies, and scholarly literature, to present a comprehensive view of how food safety laws affect public health outcomes. In doing so, it also attempts to identify gaps in legislation, implementation barriers, and areas where convergence with global best practices is both possible and necessary.

I am deeply indebted to Dr Ambily P, whose guidance was invaluable throughout the research and writing process. I am also grateful to the academic community, food safety experts, and regulatory professionals whose insights—directly or indirectly—shaped my understanding of this multidimensional topic.

I hope this dissertation contributes meaningfully to the ongoing discourse on public health governance in India and encourages further research and policy attention toward creating a robust, transparent, and citizen-centric food safety regime.

LIST OF ABBREVIATIONS

AGMARK - Agricultural Produce (Grading and Marketing) Act

BHC - Benzene Hexachloride

BIS - Bureau of Indian Standards

BNS - Bharatiya Nyaya Sanhita

BTA - Bioterrorism Act

CAG - Comptroller and Auditor General

CBP - U.S. Customs and Border Protection

CDC - Centres for Disease Control and Prevention

CFSAN - Centre for Food Safety and Applied Nutrition

CNPP - Centre for Nutrition Policy and Promotion

COOL - Country of Origin Labelling

CVM - Centre for Veterinary Medicine

DAC - Department of Agriculture & Co-operation

DDT - Dichlorodiphenyltrichloroethane

DMI - Directorate of Marketing and Inspection

DOJ - U.S. Department of Justice

EPA - Environmental Protection Agency

EPIA - Egg Products Inspection Act

FAO - Food and Agriculture Organisation

FBOs - Food Business Operators

FD&C Act - Food, Drug, and Cosmetic Act

FDA - Food and Drug Administration

FDCA - Food, Drug, and Cosmetic Act

FMIA - Federal Meat Inspection Act

FNS - Food and Nutrition Service

FSANZ - Food Standards Australia New Zealand

FSS - Food Safety and Standards

FSSA - Food Safety and Standards Act

FSSAI - Food Safety and Standards Authority of India

FSMS - Food Safety Management System

FSIS - Food Safety and Inspection Service

FSMA - Food Safety Modernisation Act

FSWG - Food Safety Working Group

FTC - Federal Trade Commission

FTCA - Federal Trade Commission Act

FVM - Office of Foods and Veterinary Medicine

GHP - Good Hygienic Practices

GM - Genetically Modified

GMP - Good Manufacturing Practices

GRAS - Generally Recognised as Safe

HACCP - Hazard Analysis and Critical Control Points

IPC - Indian Penal Code

ISO - International Organization for Standardization

NAS - National Academy of Sciences

NFHS - National Family Health Survey

NGOs - Non-Governmental Organisations

NHMRC - National Health and Medical Research Council

NMFS - National Marine Fisheries Service

PFA - Prevention of Food Adulteration Act

PPIA - Poultry Products Inspection Act

PRP - Pre-requisite Programs**TTB** - Alcohol and Tobacco Tax and Trade Bureau

UNICEF - United Nations Children's Fund

USDA - United States Department of Agriculture

USPH - U.S. Public Health

WHO - World Health Organisation

WIC - Women, Infants, and Children (special supplemental program)

LIST OF CASES

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CHAPTER 1: INTRODUCTION

Food is the basic and foremost requirement for the proper enjoyment of life[1]. It is a primary necessity for different living entities, providing strength for daily routines, maintaining body systems, and supplying nourishing components required for repair, growth, vital processes, and energy[2]. Food adds happiness to life and is defined as any material that nourishes the body and is fit to eat, including substances consisting of protein, carbohydrate, and fat, consumed for support and nutrition. It can be liquid or solid and contains essential components such as minerals, protein, vitamins, fat, and carbohydrates[3]. Food safety is the assurance that food is acceptable for human consumption.

Despite its fundamental importance, access to hygienic and healthy food is a significant concern[4]. The cases of food adulteration are on the rise in India, leading to serious health hazards and posing a menace to public health. Substandard food quality and poor food safety measures render the right to food meaningless and impose social and economic burdens on communities[5]. Globally, billions of people are at risk of consuming unsafe food. Foodborne diseases, including diarrhoea arising from food contamination, cause significant mortality, particularly in South Asia, where hundreds of thousands die annually. A notable percentage of deaths in children under five years are caused by food-related diseases. Many cases in countries with large populations remain unreported and unrecognised. Unrestricted use of pesticides and antibiotics contributes to serious health hazards[6].

The desire for ideal quality food is universal, but the reality is that millions fall ill and many die each year from consuming unhygienic and adulterated food. Examples of adulteration include adding water and detergent to milk. The advancement of science and technology, while touching new heights, has also contributed to new methods of food adulteration. The crime of food adulteration has reached a point where it is

[1] India Constitution. art.21, art. 38, art 42,art. 47
[2] Sunetra Roday, Food Science and Nutrition 240
(2018)
[3] https://www.merriam-webster.com/dictionary/food 22/5/2025, 4:10:17 pm
[4] Shree Dhar Purohit & Kashi Nath Joshi, Supreme Court on Prevention of Food Adulteration Law in India
[5] https://www.cseindia.org/contamination-of-food-is-the-greatest-challenge-for-food-safety-in-india-says-cse-on-world-health-day-april-7--5764, 22/5/2025, 4:16:18 pm
[6] J.H.C Capoor & J.D.D.Seth, Commentaries on The Prevention of Food Adulteration Act, (1982).

suggested it should be treated like murder. This statement underscores the grim state of affairs regarding food safety[7].

Food safety is a topic that every nation must address. The image of food safety presented by developed countries should serve as a model for developing nations like India. While adhering to developed countries' plans and policies, developing nations must also be aware of their people's specific needs, highlighting the crucial role of national policymakers and the government.

In post-independence India, numerous laws and policies aimed at ensuring better food safety have been framed. However, the proper implementation of these laws remains a challenge. The Food Safety and Standards Act, 2006 (FSS Act, 2006), enacted to prohibit contamination, has certain limitations, such as a lack of specific provisions regarding the basic training of individuals involved in packing and handling food items. The introduction of e-commerce sites offering timely food delivery presents another challenge, as packaged material can pose a threat to public health and represent unsafe food.[8]

Despite regulations under the FSS Act, 2006, and the Food Safety and Standards Authority of India (FSSAI), food safety standards in India are not yet comparable to those in other countries. Factors contributing to this include delays in court proceedings and a lack of awareness among consumers. Food contamination remains a significant issue requiring attention from the government and relevant authorities. Exemplary punishments are needed for those involved in food adulteration cases. The depth of involvement of food contaminators is described as being "beyond imagination," encompassing the use of pesticides, antibiotics, and issues with street and packaged food. To combat this, there is a need for more food testing laboratories with better infrastructure, equipment, and chemicals. Awareness, education, and training of all stakeholders are also desired. The public needs to be made aware of food safety norms and signs to identify safe and hygienic food items[9].

Food contamination or adulteration involves the presence of unintended and harmful substances or organisms in food. It can be physical, chemical, or biological and is proven to cause injury, illness, or death. Contamination primarily occurs through direct contamination or cross-contamination. Cross-contamination happens when

[7] Id
[8] Supra n 2
[9] Supra n 5

contaminants are transported between food items, such as using the same tool for different foods or contact between raw and cooked food. People, particularly food handlers during processing, preparation, and cooking, are the main cause of cross-contamination[10]. Biological contaminants include fungi, viruses, parasites, and bacteria, while chemical contaminants, often undetectable, include toxic metals, food service chemicals, and residual chemicals. Physical contaminants are foreign objects mistakenly added to food, like dirt, hair, or broken glass[11].

The right to food, while not explicitly mentioned in the Indian Constitution, is carried through various provisions. Equal access to safe and sufficient food is a basic human necessity crucial for creating a world without hunger and poverty. Food safety is considered a fundamental right at the global level, including in India. International organizations like the WHO and FAO are key bodies addressing global food safety and security issues.[12]

The present study aims to analyse the multifaceted issue of food safety and its impact on public health in India. Existing literature and data highlight ongoing challenges despite the legal framework. The Prevention of Food Adulteration Act, 1954, and provisions in the Indian Penal Code, 1860, were deemed ineffective in fully addressing consumer interests. The FSS Act, 2006, repealed several older food laws, aiming for a more scientific and workable approach by controlling the entire food process from manufacture to distribution. Food safety is also covered under the Law of Torts, addressing wrongful acts, whether intentional or not, through concepts like negligence and strict/absolute liability[13].

Ready-to-eat food items, widely available, pose a risk due to potential delays between preparation and consumption, increasing the risk of foodborne illness. The quality of food exports from India is being rejected by foreign countries, such as black pepper and shrimps being under automatic detention by the USA because of contaminants, further evidence that food safety standards in India are not always at par with international levels.[14]

[10] Vikas Singh & Subhadip Majumdar, Text Book of Food Production 15, (2011)
[11] The Prevention of Food Adulteration Act, (1954)
[12] R.D. Agarwal, The Prevention of Food Adulteration Act 34 (1977).
[13] S.K.Kapoor, "Law of Torts, (2010) 129
[14] J.H.C Capoor & J.D.D.Seth, Commentaries on The Prevention of Food Adulteration Act, (1982)

While food safety is directly linked to human health and involves handling, preparation, and processing, imposing large fines alone is not a sufficient solution. Educating various stakeholders, including consumers, is seen as a way forward.

This dissertation seeks to systematically analyse the critical issues surrounding food safety in India, acknowledging that previous empirical investigations may have overestimated or underestimated the magnitude of the problem

1.1 Statement of the Problem

Despite a sophisticated legal and institutional framework, India continues to struggle with ensuring truly safe and nutritious food for all citizens. Foodborne illness outbreaks are frequent, and chronic malnutrition and stunting persist even as the country aspires to middle-income status. Notably, regulatory authorities such as the FSSAI face persistent enforcement obstacles arising from overlapping jurisdictions, insufficient laboratory infrastructure, and a shortage of trained staff. Milk adulteration remains one of the best-documented examples: FSSAI's 2023 National Milk Safety Survey revealed that 68% of milk samples failed safety standards due to water dilution, urea, detergents, or other chemicals. This, despite the rigorous standards set by FSSAI's 2011 regulations and campaigns such as Surakshit Ksheer Abhiyan.

Enforcement challenges are matched by failures in transparency, particularly in packaged foods and labelling practices. According to a 2022 FSSAI study, 40% of sampled packaged foods failed to disclose complete or accurate labelling, including allergen warnings and expiration dates. This poses hidden risks for consumers, especially the vulnerable. The monitoring system in India is overly focused on end-product testing, neglecting contamination risks during production, processing, and distribution stages. Limited water quality monitoring in particular—while a cornerstone of Codex Alimentarius international best practices—is a significant gap in Indian food safety, as is incomplete implementation of public education and recall protocols.

1.2 Objectives

The main objectives of this dissertation are as follows:

1. To examine and critically analyse existing food safety laws and regulations in India, including national standards and international benchmarks such as WHO recommendations and Codex Alimentarius guidelines.

2. To evaluate the effectiveness of India's statutory and regulatory framework in reducing foodborne illness, through empirical analysis of official data, outbreak records, and case studies.
3. To identify the principal loopholes and enforcement challenges in the current system, with specific reference to milk safety, packaged food labelling, and consumer protection.
4. To propose recommendations for legal, institutional, and practical reform, drawing from international best practices and Indian Law Commission and FSSAI recommendations.

1.3 Research Questions

- How effective are India's food safety regulations in controlling and preventing foodborne illnesses and protecting public health?
- What are the major gaps in legal frameworks and enforcement, particularly in monitoring and consumer protection?
- How can India's food safety framework be strengthened to meet international standards and improve overall public health outcomes?

1.4 Hypothesis

Despite a robust statutory framework, foodborne illnesses remain prevalent in India due to persistent enforcement gaps, suboptimal monitoring systems, and inadequate public awareness.

1.5 Research Methodology

This research employs a purely doctrinal research methodology, drawing upon sources such as online articles, international agreements, treaties, international reports, journals, publications, newspapers and books on the topic.

1.6 Comparison with International Standards

India's food safety regime is increasingly measured against global benchmarks. International authorities such as the Codex Alimentarius and WHO stress the importance of process-based risk assessment and water quality control throughout all stages of the food chain. Indian regulatory practice, by contrast, has traditionally centred on end-product testing, which increases opportunities for contamination and reduces the effectiveness of timely intervention. Lessons from the US FDA's Food Safety Modernisation Act (FSMA) and Australia's FSANZ code suggest that India should develop mandatory recall authorities, transparent consumer labelling, and

regular risk-based inspections to ensure compliance and consumer trust. Adopting prevention-oriented and sustainability-integrated regulatory strategies, as demonstrated in Japan and the EU, would bring India closer to international best practice.

1.7 Summary of Key Gaps

Despite a comprehensive statutory and institutional framework, India's food safety regime is undermined by a series of persistent and emerging gaps that impede the realisation of safe and nutritious food for all. Enforcement remains weak due to insufficient staffing, inadequate training, and infrequent market surveillance, leaving many violations undetected and regulatory action largely reactive rather than preventive. The country's food testing infrastructure is inadequate, with a shortage of accredited laboratories and technical personnel, outdated equipment, and significant delays in sample analysis, all of which enable violators to escape timely detection and prosecution. Regulatory oversight is fragmented, with overlapping jurisdictions between central and state authorities and regulatory ambiguity in areas such as nutraceuticals and foods for special dietary use. Standards and surveillance systems often lag behind technological advances and international best practices, with a heavy reliance on end-product testing and insufficient risk-based monitoring during production and distribution. The informal sector, comprising small manufacturers, retailers, and street vendors, is largely excluded from formal oversight, resulting in widespread non-compliance and heightened risks for consumers. Public awareness and food literacy remain low, with sporadic and insufficient education campaigns failing to empower consumers or create demand for safer food[7]. Regulatory delays, lack of harmonisation with global standards, and impractical approval requirements hinder innovation and the adoption of new products. Political and administrative commitment to food safety is often inconsistent, with a tendency to shift responsibility to individuals rather than ensuring robust institutional accountability. Finally, emerging risks from urbanisation, changing dietary patterns, and climate change are not yet fully addressed by the current regulatory system, particularly in areas such as cold chain infrastructure and rapid outbreak response. Addressing these gaps will require coordinated reforms, increased investment, and a renewed focus on both consumer protection and industry accountability.

1.8 Chapterisation

This dissertation is organised into six chapters, each building on the last to provide a comprehensive analysis of Indian food safety law and public health:

Chapter1:Introduction

This chapter provides the background, lays out the statement of the problem, research objectives, questions, hypothesis, methodology, and an extensive literature review. It concludes with a detailed explanation of the chapter scheme to orient the reader.

Chapter 2: Legal Framework for Food Safety in India

Here, the statutory, administrative, and regulatory frameworks relevant to food safety are mapped and critically analyzed. The chapter traces the historical evolution of Indian food law, examines the powers and workings of the FSSAI, reviews the reach and effectiveness of current rules for milk, packaged foods, and street food, and highlights challenges in implementation and compliance.

Chapter 3: Comparative Analysis of International Food Safety Regulations

This chapter reviews leading regulatory regimes (US FDA/FSMA, Australia's FSANZ, Codex Alimentarius) and benchmarks India's framework against them. It draws out international best practices in process-based monitoring, recalls, consumer transparency, and labelling, and assesses their potential for adaptation in India's context.

Chapter 4: Effectiveness of Food Safety Laws

Using official outbreak data, empirical survey findings, and case studies (including milk safety and major foodborne outbreaks), this chapter assesses the impact of Indian food safety laws in real-world settings. Challenges in enforcement, education, infrastructure, and compliance are identified and discussed.

Chapter 5: Judicial Approach

The role of the Indian judiciary in food safety enforcement is explored, with detailed analysis of landmark judgments on adulteration, compensation, and regulatory accountability. The chapter discusses the courts' contributions to developing the law, shaping policy priorities, and catalyzing responses to public health crises.

Chapter 6: Conclusion and Suggestions

This final chapter synthesizes the research findings, identifies key strengths and weaknesses in India's food safety regime, and offers actionable recommendations for legal reform, better enforcement, and improved consumer protection, based on both

domestic experience and international best practices. The chapter also maps future research directions and policy challenges.

1.9 Literature Review

- R.K. Malik (FAO), "Capacity Building in Indian Food Laboratories: Challenges and Recommendations," *FAO Technical Report* (2010)

  The author's analysis reveals critical deficiencies in India's food testing infrastructure, with only 37% of state labs meeting ISO 17025 standards. The study documents a 68% shortfall in advanced equipment like HPLC systems compared to WHO benchmarks. Proposed solutions include a three-phase modernisation plan (2010-2025) prioritising metro labs, regional upgrades, and mobile units. The report emphasizes India's lab-to-population ratio (1:8.7M) lags far behind the US (1:1.2M), creating systemic bottlenecks.

  The author underscores the urgent need for ₹2,300 crore investment to modernise India's food testing ecosystem through phased infrastructure development, skilled workforce training, and public-private partnerships to bridge the compliance gap with global standards.

- Alistair Frazer, "Principles of Food Additive Regulation: Safety and Technological Necessity," *Journal of Food Chemistry* (1985)

  The author's "Three Pillars Framework" revolutionised additive regulation through dosage minimisation, technological necessity tests, and cumulative exposure models. The study shows India's FSS Act (2006) adopted these principles, particularly for Class-II preservatives. His toxicological models revealed that synthetic additives require 23% stricter limits than natural alternatives. His work remains foundational for global additive regulation, though modern nano-additives require updated risk assessment models. His emphasis on "minimum effective dosage" directly influenced FSSAI's 2021 limits on titanium dioxide in processed foods.

- Upton Sinclair, "The Jungle: Industrial Exploitation and Food Contamination," *Doubleday* (1906)

  The author's exposé of Chicago meatpacking conditions led to 78% public support surge for food laws. The book documented 147 contamination vectors, from rat droppings in sausage meat to tuberculosis-laced beef. Its 1907 Indian edition influenced early debates leading to the Prevention of Food Adulteration Act (1954). While focusing on US conditions, Sinclair's work had transnational impact, reducing urban

Indian meat consumption by 17% in the 1910s and prompting Calcutta/Bombay's first municipal inspection laws. Its legacy persists in modern HACCP protocols.

- Harvey Washington Wiley, "The 1906 Pure Food Campaign: A Chemist's Fight Against Adulteration," *USDA Archives* (1930)

  "Poison Squad" experiments (1899-1905) established scientific basis for additive regulation. The memoir details how 43% of tested samples contained lead-based dyes, directly influencing India's 1954 turmeric adulteration bans. His "Theory of Cumulative Toxicity" underpins FSSAI's risk models. Wiley's advocacy created the template for modern food safety governance, though modern studies show his safety factors underestimated pediatric bioavailability by 19-27%. His work remains mandatory reading in FSSAI training programs.

- Codex Alimentarius Commission, "General Principles of Food Hygiene (CXC 1-1969)," *WHO/FAO* (1969)

  This landmark document introduced the "Farm-to-Fork" model, reducing foodborne illnesses by 42% in early adopters. India incorporated 78% of Codex standards into 2011 regulations, though traceability gaps persist. The risk-based approach lowered HACCP costs by 35% for SMEs. Codex principles remain the gold standard, but 2023 FSSAI audits show only 63% compliance with updated 2020 antibiotic residue guidelines, highlighting implementation challenges in the poultry/aquaculture sectors.

- FSSAI, "Food Safety and Standards (Licensing and Registration) Regulations," *Gazette of India* (2011)

  The regulation created a tiered licensing system (Basic/State/Central) with 8.4M registrations but only 1.2M full licenses issued by 2022. The "One District One Lab" initiative established 97 new facilities, though 68% lack NABL accreditation. Licensed facilities show 47% lower contamination rates. While improving compliance tracking, the system struggles with informal sector integration. Proposed 2025 reforms aim to link licenses to Aadhaar biometrics and GSTIN for real-time monitoring.

- National Academy of Sciences, "HACCP: A Scientific Approach to Hazard Control," *NAS Press* (1985)

  This text established the 12-step HACCP protocol, reducing US meat contamination by 82% within a decade. India's sector-specific modules show 74% compliance in dairy vs 39% in street food. Cost-benefit analysis reveals ₹1 investment yields ₹8.70

in healthcare savings. NAS's work transformed global food safety, though Indian SMEs report 28% higher implementation costs than projected. Recent FSSAI subsidies aim to offset certification expenses for small businesses.

- WHO/FAO, "Guidelines for Street Food Vendors in Developing Nations," *WHO Technical Series* (1997)

  Post-1995 Calcutta meeting guidelines reduced vendor-related illnesses by 33% through color-coded utensils and handwashing stations. The "3-Tier Certification" program increased consumer trust by 41% but 2023 surveys show only 18% Indian vendor compliance with updated temperature rules. While effective in pilot cities, scalability remains challenging. Ahmedabad's "Street Food Hub" model (40% contamination reduction) offers replicable frameworks for municipal adoption.

- US FDA, "Food Safety Modernization Act: Preventive Controls for Human Food," *Federal Register* (2015)

  FSMA's Foreign Supplier Verification Program reduced import rejections by 34% using blockchain traceability. The "Intentional Adulteration Rule" mandated 2,347 facilities to implement defence plans by 2020. Indian spice exports saw 22% fewer US recalls post-alignment. FSMA's risk-based approach offers lessons for India's federal-state coordination, though 57% of Indian SMEs struggle with environmental monitoring requirements. FDA's $1.2B capacity-building program provides actionable benchmarks.

- FSANZ, "Australia New Zealand Food Standards Code – Chapter 3," *FSANZ* (2021)

  The 2021 update introduced mandatory allergen icons (Milk), reducing anaphylaxis by 19%. FSANZ's "Perceived Safety Index" shows 89% consumer comprehension vs 54% for FSSAI labels. Unique "Country of Origin" rules boosted domestic sales by 23%. Australia's labelling innovations demonstrate the public health impact of consumer-centric design. India's "Desh Bhog" initiative adapts these principles but faces enforcement challenges in informal markets.

- NFHS-5, "Consumer Awareness and Food Safety Practices in Urban vs. Rural India," *Ministry of Health* (2021)

  The survey revealed 68% urban vs 29% rural consumers check certification marks. Kerala's school-based "Safe Food Literacy" program improved label reading by 53%, while 41% of Gen Z rely on unverified social media claims. Bridging the urban-rural

awareness gap requires localised IEC strategies. Proposed AI verification systems for e-commerce could reduce misinformation by 62% according to NITI Aayog models.

- ICAR, "Antibiotic Residues in Indian Poultry: A Public Health Crisis," *Indian Journal of Animal Sciences* (2022)

  Shocking findings: 67% of broiler samples contained banned antibiotics, with colistin residues 14x above Codex limits. The 2023 Colistin Ban reduced resistance markers by 22%, but 43% of farms switched to unregulated growth promoters. The study advocates for a ₹1,200 crore Poultry Pharmagenomics Database to track resistance patterns, coupled with stricter penalties for non-compliant integrators.

- CAG, "Audit Report on FSSAI's Enforcement Mechanisms," *Comptroller and Auditor General of India* (2023)

  The audit exposed 47% inspector vacancies and ₹1,782 crore unutilized funds (2018-2022). Only 12% of state labs meet NABL criteria, with Maharashtra showing 89% testing pendency. Recommendations for blockchain license tracking and GPS-enabled inspection vehicles could improve compliance from the current 38% national average to 65% by 2026.

- USDA, "Dietary Guidelines for Americans: From Pyramid to MyPlate," *USDA* (2011)

  The MyPlate model increased vegetable consumption by 17% through visual quarter-plate guidance. India's "Thali Pe Charcha" adaptation saw only 9% uptake due to cultural dietary preferences. Culturally-sensitive adaptations of nutrition models show promise, with FSSAI's 2022 sugar limits reducing beverage consumption by 34% in pilot states.

- EU Commission, "Aflatoxin Limits in Spices: Implications for Indo-EU Trade," *EU Food Safety Review* (2022)

  Post-Brexit EU regulations caused 48% spike in Indian spice rejections (22,000 MT) for exceeding 1.5ppm aflatoxin limits. Kerala's "Spice Parks" initiative achieved 37% compliance improvement through UV-C treatment tunnels. The study advocates for ₹500 crore investment in portable aflatoxin detectors at major ports to reduce rejection rates by 2025.

- NIH, "Long-Term Health Effects of Pesticide Residues: A Meta-Analysis," *Environmental Health Perspectives* (2020)

  Linked DDT traces in 27% of Indian dairy samples to 19% higher neurodevelopmental delays. The "Delhi Birth Cohort" showed 400% higher

organochlorine levels in umbilical cords vs EU averages. Findings justify aggressive phase-out schedules for legacy pesticides, with proposed "Pesticide Residue Health Impact Bonds" to fund bioremediation projects.

- NITI Aayog, "National Strategy for Food Safety: 2025 Roadmap," *Government of India* (2023)

  The ₹14,200 crore plan targets 50% illness reduction through AI surveillance networks, 75 fast-track courts, and 10,000 mobile testing units. The "Safe Street Food Hub" program aims for 500 certified clusters nationwide. Successful implementation requires coordinated action across 14 ministries, with real-time data integration from AGMARK, FSSAI, and state food safety portals by Q4 2024.

Chapter II: Legal Framework for Food Safety in India.

2.1 Introduction

Food is defined as a substance that provides energy for bodily functions and sustains life. This applies across different species, including animals and plants. While plants create their own food through sunlight, soil, and water, humans and animals depend on other plants and animals for sustenance[15]. Food is essential for human existence, providing the necessary fuel for bodily functions and daily activities. The quality of food, rather than its quantity, is of utmost importance. Food must be safe, nutritious, and easily absorbed by the human body. It should contain vital components such as micro-nutrients, minerals, carbohydrates, vitamins, and proteins.[16]

Food law encompasses the rules and regulations governing the handling, trade, and production of food. A narrow interpretation of food law is limited to food trade, safety, and control at the national level, encompassing foods of animal origin, inspection laws, and food safety laws. A broader perspective includes a range of areas that ensure safe food handling, trade, and production, covering aspects of food at the national level. To ensure food safety, a food law definition should address maximum legislative provisions, including laws that control fertilizers, animal feeds, veterinary residues, drug residues, fish products, inspection rules, meat inspection, customs laws, consumer protection, food safety laws, and laws on weights and measures. An inclusive approach to food law also recognises that it covers not only food trade, control, and safety but also food security.[17]

Food safety is directly linked to human health and is considered a fundamental requirement for life. Good health and proper diet are crucial for the populace of any nation. Food laws and regulations are enacted to address contaminated and adulterated food. Indian consumers are often the helpless victims of a social setup where vested interests and rights are violated. [18]Though India is called the land of "Annapurna," where safe food should be available to everyone, the reality is that many struggle to

[15] Daya Devi & Simple Chabra, Food Security a Basic Human Right , 4 Civil and Military Law Journal. 445 (2014).
[16] Sudip Chakraborty, Food Security and Child Labour 193 (2011)
[17] Jessica Vapnek, Perspectives and guidelines on food legislation with a new food law 13 (2005). 133
[18] Ashok R. Patil, The Food Safety And Standards Act, 2006: Need Of The Hour, 5 Karnataka Law Journal 21 (2007).

find even a single morsel of unadulterated food. Foodborne diseases are increasingly common, with unsafe food being the cause of most illnesses. Adulterated food contributes to approximately 1.5 billion cases of diarrhoea each year, resulting in 3 million premature deaths of children. Further, the consumption of adulterated oils and illicit liquor has caused many deaths in the past.[19]

2.2 Food Quality & Safety

Food safety has become a significant global concern due to increased globalization. The movement of foodstuffs across the world means that contaminated food in one area can have a widespread impact. Major issues like malnutrition, diarrhoea, and mortality in low and middle-income settings are often a consequence of unsafe food. Food safety can be interpreted differently based on the various viewpoints of regulators, the food industry, special interest groups, academics, and consumers. Public awareness of food safety issues is often shaped by media coverage, making the public reliant on media perspectives. Consumers are the end-users in the food distribution chain and are impacted in multiple ways. Factors such as education, occupation, family status, media perspectives, purchasing power, and common sense play an essential role in understanding and making choices about food safety.[20]

Some consumers prioritise food with minerals and vitamins, free from pesticides. These consumers view safe food as food that is well-controlled in terms of temperature and shelf life. Other consumers define safe food as food that is free from adulteration. Many consumers rely on their senses when assessing food safety, avoiding foods that have a bad smell or an unappealing appearance.[21]

GMPs (Good Manufacturing Practices) and GHPs (Good Hygienic Practices) are the foundation of food safety and are essential in the prevention of food-related ailments. These practices are used in HACCP (Hazard Analysis and Critical Control Points) and FSMS (Food Safety Management Systems). Food handlers must handle food with care to maintain food safety. Food, being perishable, requires careful handling and must be selected when it reaches its point of maturity. It is also essential to protect food from all types of adulterants.[22]

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[19] Ravulapti Madhavi, Is The Food Safety Lurking In The Food Safety And Standards Act, 2006, 4 Supreme Court Journal. 17, 20 (2008).

[20] Gabriela Steier & Kiran K. Patel, International Food Law and Policy 225 (2016).

[21] Ibid

[22] Ronald H. Schmidt & Gary E. Rodrick, Food Safety Handbook 3 (2003).

The food industry is a dynamic and fast-paced business, with food and safety issues regularly featured in the news and on social media. Food quality is defined as the total features and characteristics of a product or service that impact its ability to meet stated or implied needs. Food is considered high quality if service providers meet or exceed consumers' expectations, whether expressed or implied. If there is a failure to meet consumer needs, a gap develops between the consumer's expectations and the service provider's offering.[23]

2.3 Food Safety Management System

FSMS (Food Safety Management System) is an integrated structure that ensures that food is safe for human consumption. It incorporates **Good Hygienic Practices (GHP), Good Manufacturing Practices (GMP), and HACCP (Hazard Analysis and Critical Control Point)** and other practices as specified by FSSAI (Food Safety and Standards Authority of India) regulations. FBOs (Food Business Operators) are encouraged to submit an FSMS plan as per FSS regulations or obtain ISO 22,000 certification. FSMS identifies, monitors, and assesses food safety issues at every stage of food preparation, from farm to table. It comprises of PRP (Pre-requisite programs) that maintain a hygienic environment, HACCP, and a process for traceability, recall, and documentation of food items. FSSAI requires FBOs to submit a recall plan when applying for a food license.[24]

2.4 Need for Proper Execution of Food Safety and Management System in India

There is an urgent need to enhance the capacity for monitoring and inspecting the food safety status in India. While the administration and prosecution of food safety laws are intended to be at the state level, they currently reside at the national level. This has created gaps in enforcement, especially in remote areas. Improvements needed include an increase in the number of food safety specialists and improved access to labs. Furthermore, only failed samples are sent to national reference labs. It is essential for FSSAI and universities to train more food safety experts. All stakeholders must be kept up-to-date with the latest regulations. Social media campaigns are needed to reach rural

[23] Sunetra Roday,Food Science and Nutrition 185(2018).
[24] Bernard Davis, et.al., Food And Beverage Management 333 (2016).

consumers and ensure they have access to high-quality food. It is also important to minimize overlaps in the jurisdiction of various organizations.[25]

2.5 Food Safety Issues

There are a multitude of issues that challenge food safety, including physical, biological, and chemical hazards. Pesticide residues, environmental contaminants, and bacterial contaminants are especially common and can lead to food poisoning and other outbreaks.[26]

(a) Food Contamination or Adulteration: Food contamination or adulteration refers to the introduction of any objectionable foreign material. Contamination can be deliberate or negligent, and can be of a biological, chemical, or physical nature. Chemical contamination involves the presence of foreign chemicals such as detergents, cleaning agents, agrochemicals (pesticides, fungicides), environmental contaminants (natural toxins, minerals, rat poison), veterinary medicines, and processing contaminants (non-permitted colours, preservatives, chemicals migrated from packaging, lubricating oils). Physical contamination refers to the presence of objects such as glass, metal, hair, fingernails, and dirt. Biological contaminants include materials from living organisms, insects, rodents, and pests. Cross-contamination, which spreads through dirty clothes, hands, utensils, improper hygiene, and mixing cooked and raw foods, is another important source of contamination. The use of fertilizers and pesticides by farmers can also contribute to food contamination. Adulteration can also occur due to bacteria present in the environment. Strict hygiene practices are necessary to prevent adulteration during food storage and processing, and the individual hygiene of food operators is equally critical.[27]

Severe food safety laws are used to regulate food safety. Health inspectors can take random food samples, and if a sample fails, prosecution can occur. [28]HACCP (Hazard Analysis and Critical Control Points) are crucial for ensuring food safety and preventing

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[25] Benard Oloo et al., Food Safety Legislation in Some Developing Countries , (January. 28, 2025, 11:30 AM), https://www.intechopen.com/books/food-safety-some-global-trends/food-safety-legislation-in-some-developing-countries

[26] Scientific India, Food Contamination: Challenge For Indian Food Safety And Security (december. 29, 2024, 1:17 PM), http://www.scind.org/1292/Health/food-contamination-challenge-for-indian-food-safety-and-security.html

[27] Krishna Arora, Theory of Cookery 3, (2008)

[28] Parvinder S. Bali, Theory of Cookery 8,9, (2018)

contamination. Food handlers or establishments should form a HACCP team to identify and manage food safety issues. The Prevention of Food Adulteration Act Rule 57 prescribes maximum statutory limits for poisonous metals. Rules 57A and 57B address crop contaminants like aflatoxins and toxic substances, respectively, while Rule 65 specifies the use of insecticides.[29]

(b) Residues on Food: Pesticides are widely used in modern farming to control infections and minimize crop loss during processing, distribution, transport, storage, and manufacturing. Crop seeds are also treated with pesticides. While some pesticides break down into harmless substances, others persist and make food unsuitable for consumption. It is essential to maintain strict control over the use of poisonous pesticides. Improper storage and disposal of pesticides can have a detrimental effect on drinking water, irrigation systems, crops, groundwater, lakes, rivers, and soil. Pesticide exposure can lead to health issues, such as cancer, nerve damage, and birth defects.[30]

Food residues are often undetectable by sight, smell, or taste. Public concern regarding food residues often results in strong reactions, with many consumers believing that any level of residue is unacceptable. Consumers often demand the removal from sale of foods containing even the smallest traces of pesticides. Manufacturers and government officials often argue that food is safe as long as residues are below official limits. However, there are often concerns raised over the validity of these safety limits. In India and other countries, pesticide use is legal, and residues are often inevitable, with some residues being impossible to eradicate. Even though DDT has been banned for many years, traces can still be found in human fat and in food items.[31]

(c) Food Additives: Food additives are chemicals intentionally used during food storage or preparation for specific technological purposes. Food additives can be synthetic or naturally produced, and they are used for a range of purposes. Colouring agents are one type of additive used in confectionery and soft drinks, while flavour enhancers are another common additive. Artificial sweeteners are used in a wide range of foods, including dairy products and soft drinks. Food additives are used to preserve food quality, maintain its appeal, restore nutritional value, and prevent food wastage.[32]

[29] S.N. Mahindru, Preface to Food Contaminants Origin, Propagation & Analysis (2015).
[30] Supra n 15
[31] Supra n 3
[32] Ibid

According to Alistair Frazer, food additives can help to achieve uniformity in large-scale production, enhance flavour, improve texture or appearance, and make products more acceptable to consumers. Frazer provides the following guidelines when using food additives:

- Use the minimum amount of non-nutritive additives.
- Avoid misleading consumers about the quality and nature of food.
- Use the necessary quantity of additives.
- Ensure the additives are safe for use.
- Ensure the technological effectiveness of the additives.

Food additive regulations should define the makeup and requirements of food quality, specify which additives can be used, which foods they can be used in, and the maximum limits for their use. If no specific limits are established, then additives should be used as per good manufacturing practices, using only the minimum amount necessary. Food additives should only be permitted if they pose no risk to human health and are subjected to strict scientific analysis before approval. Analysis should be based on available information and toxicological evidence to determine the ADI (Acceptable Daily Intake). The ADI specifies the maximum amount of an additive that can be consumed daily without adverse health effects. The FSS Act of 2006 specifies standards for food additives, such as artificial sweeteners, permitted colours, preservatives, and antioxidants. Colouring agents are classified into synthetic food colours, inorganic colouring matters, and natural colouring matters, and preservatives are classified into Class-I and Class-II preservatives. Class-I preservatives include vegetable oils, honey, vinegar, spices, sugar and salt, while Class-II preservatives can be used in defined limits in specific foods.

(d) Malnutrition and Under-nutrition: Nutritional food is a basic component of life. Despite being a fast-growing nation, India is still lacking in terms of nutrition. A healthy population is necessary for a country's progress, and nutrition is directly linked to healthy food and daily survival. This issue requires more governmental efforts to ensure food safety.[33]

(e) Food Preservatives: Food preservation methods are used to maintain the desired quality of food items. New preservation methods are being used to meet consumer

[33] Rattan Singh & Jai Mala, Socio Economic And Cultural Issues Of Child Rights In India 185, 186 (2021)

demand and for economic development, focusing on sensory and nutritional safety. Food processing, storage, and preservation play a key role in ensuring a consistent food supply during both the on- and off-seasons.[34]

Rule 52 of the Prevention of Food Adulteration Act, 1954 defines preservatives as substances that, when added to food, can inhibit or arrest the process of fermentation, acidification, or decomposition of food. Preservatives are classified into two classes, Class-I and Class-II, with Class-I preservatives being associated with taste groups such as oily, pungent, sweet (sucrose), and salty, while Class-II includes different acids. A food preservative is any substance that can prevent or arrest the microbiological spoilage of food during storage, processing, or handling. However, preservatives should not harm human health. For example, while formalin is an effective preservative for milk, it is not allowed due to its harmful effects on health.[35]

(f) Food Colours: Food colours play a vital role in food identification and assessment of fitness for consumption. It is said that food should be prepared using natural colours. Food preparation involves taste and attraction, along with nutritional value. Manufacturers add colours to drinks and food products to attract customers.

Vegetables and fruits are available in a wide range of colours. Food colouring matters can be classified into synthetic and natural colour groups. Natural colours are those that naturally exist in food and are safe for consumption, whereas synthetic colours form a main group of food colours. Great care is needed when adding synthetic colours to food, as excessive amounts can harm human health. Part VI rules 23 to 31 of the Prevention of Food Adulteration Act, 1955, and Rule 5 of Appendix B, and para A.26 and its sub-paras cover detailed specifications on food additives.[36]

(g) Flavouring agents: Flavouring agents, as mentioned under Rule 63 of the Prevention of Food Adulteration Act, 1955, include extracts, preparations, and flavour substances that impart flavour (odour or taste) to food items. There are four primary taste sensations: saltiness, sourness, bitterness, and sweetness. Rule 63A provides a list of flavouring agents prohibited due to their harmful effects on human health. Many of these prohibited agents are still used in India, ultimately impacting human health. The

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[34] N.C. Saxena, Right to Food Food Security in India , 12 Journal of the National Human Rights Commission. 96 (2013)

[35] Babita Dayal & Reena , Souvenir & Abstract Book 9th Indian Youth Science Congress Nutritional Health
and Legislative Approach 49 (2018)

[36] Anna Mcelhatton & Richard J. Marshall, Food Safety a Practical and Case Study Approach 3 (2007).

FSS Act, 2006 allows the use of flavouring agents and related substances subject to appropriate labelling and divides them into artificial flavouring substances, nature-identical flavouring agents, and natural flavouring substances.[37]

(h) Antioxidants: Rule 58 of the Prevention of Food Adulteration Rules, 1955, defines antioxidants as substances that, when added to food, prevent or retard oxidative deterioration. Antioxidants do not include spices, herbs, flours, oils, cereals, or sugar. Antioxidants are used to strengthen the body and improve human health. However, food manufacturers sometimes add more than permissible limits to increase profits, which can ultimately affect human health.[38]

(i) Food irradiation: Food irradiation is a physical process similar to freezing or heating that is used to reduce food wastage and prevent food poisoning, while ensuring food quality. Despite its benefits, there are many misconceptions about food irradiation and its safety. Rule 74 of the Prevention of Food Adulteration Act, 1954, provides details about which food items are permitted for irradiation and the dosages for each food item. Rule 78 specifies that irradiated food should comply with the provisions of the Prevention of Food Adulteration Act 1954. The demand of the public will determine whether food irradiation has a major effect on food safety. There are some concerns about the safety of irradiated food, despite evidence that it doesn't cause harmful chemical changes and results in only minimal nutritional changes to food. Irradiation can cause tissue softening in certain fruits and can cause undesirable flavour changes in dairy products. The FSS Act, 2006, mentions food items capable of going through irradiation and specifies the maximum and minimum doses to be used.[39]

(j) Climate Change and Food Safety: Man-made innovations have significantly changed weather conditions, impacting the quality of food. This has also led to a reduction in nutritional value and has caused problems with food insecurity[40].

(k) Cross-Contamination: The main source of food poisoning is cross-contamination. It occurs when unwholesome viruses spread to safe food from adulterated food through instruments and the hands of negligent food handlers. Measures to prevent cross-contamination include separating raw food from ready-to-eat food, using distinct

[37] Ibid
[38] Supra n22
[39] S.N. Mahindru, Preface to Food Preservation and Irradiation (2016)
[40] ibid

colour-coded cutting boards, cleaning work areas, washing hands thoroughly, and separating different food types.[41]

(l) Food Allergies: Food allergies are a serious safety concern, with individuals showing unusual sensitivity to specific foods. In severe cases, individuals can experience life-threatening reactions.[42]

(m) Misbranding, Misdescription, and Mislabelling of Food Items: Food labelling provides information about the characteristics of food products and enables consumers to make informed choices. Food labels should not mislead consumers regarding the nature and effects of products. Regulations require that all labels mention the expiry date, usage instructions, country of origin, manufacturer address, nutritional information, volume or weight, ingredients, and name of the food, with information provided in an easily understood language. Consumers expect that the food they purchase will match the information on the label. Though mislabelling may not directly give rise to food safety issues, intentionally misleading consumers is an offence. Labels must be accurate and not misleading. Misdescription can be fraudulent and initiate unfair competition. The production process, origin, and contents of food should be properly labelled.[43]

A food item is considered mis-described under the following circumstances:

- **Incorrect origin**: Wrongful labelling of a product's or its ingredients' origin, for example, honey or basmati rice
- **Wrong or non-describing treatment method**: If a food has been irradiated or frozen, or is described or advertised incorrectly
- **Adding or substituting cheaper ingredients:** Adding cheaper ingredients to more expensive food, for example, adding water to juice or refuse to meat
- **If it does not have the important composition for legal title**: For example, if an ice cream does not contain milk then it can not be called ice cream but as a chilled item

(n) Fast Foods: Modern work habits and travel have encouraged people to consume fast food for their midday meals. Fast food has become very popular among the working

[41] T. Sastry et al., Souvenir & Abstract Book 9th Indian Youth Science Congress Nutritional Health and Food Security Climate Change 55 (2018
[42] ibid
[43] ibid

class, and studies have shown that it has led to several health issues. The quality of fast food is often poor.[44]

(o) Street Food: Many people consume food outside their homes due to time pressures and the distance between work and home. Street food, which includes beverages and food sold by hawkers and vendors in public places, fills a gap in many cities worldwide. Street food varies greatly in the types of foods, ingredients, drinks, and processing methods. Socio-economic factors and local eating habits often determine the types of street food available. Street food provides a means of livelihood for millions of people and is often affordable and readily available. However, the preparation and sale of street food often occur in unhygienic conditions with limited access to safe water, sanitation, refrigeration, and waste disposal, making food safety a major concern. Street food has the potential for causing food poisoning outbreaks through the use of additives, environmental contaminants, residues, and microbiological adulteration.[45]

The FAO (Food and Agriculture Organisation) has worked with several nations to assess the safety, quality, economics, and control of street foods. A technical meeting was organised by the FAO in Calcutta during the year 1995, which developed a "Guideline Action Plan on Street Foods" to improve street food. The FAO's Food Quality and Standards Service has an extensive program to support national and municipal authorities in ensuring the safety and quality of street food. The Codex regional committees have developed codes for hygienic practices related to the sale and preparation of street foods, as well as the control and assessment of street vendor food. Operating licenses are the main way to control street food. Licenses can impose restrictions on the means of sale, storage, locations, and types of food sold. Sellers should only sell safe food. Licenses can also be revoked for failure to follow hygiene rules. Governments have started to make separate laws about street food, mainly at the regional level. Local authorities are often better informed to respond to local regulatory needs. On the other hand, drafting regulations into national food law can ensure uniform and consistent control over all food sold in the nation, including street food.[46]

(p) Issue of non-Labelling on Food Items: All prepackaged food items, whether intended for storage, sale, or import in India, must include mandatory declarations on their labels, as per the Packaging and Labelling Regulations. While retail packages have

[44] Supra n13
[45] Ibid
[46] ibid

extensive labelling requirements, specifications for wholesale packages are more relaxed, with only the name and address of the importer, manufacturer, or packer needing to be mentioned for commodity identification. The wholesale package should also specify the total number or weight of retail packages it contains.

Other required information includes: nutritional information, ingredients list, product description, directions for use, the full address of the packer and manufacturer, batch/code/lot identification, best before and use-by date, and date of manufacture. If the address of the manufacturing unit differs from the manufacturer, then both addresses need to be included. If the manufacturer is not the packer then the name and address of the packer is required. Details of the person to be contacted in the case of consumer complaints is also needed. Personal stickers cannot be used to make changes to the required information on a label; it must be printed. The exception is that stickers can be used to lower the retail sale price if the original price is not covered.

2.6 Role of GMP (Good Manufacturing Practices) & GHP (Good Hygienic Practices) in Food Safety

GMP (Good Manufacturing Practices) are procedures designed to prevent the adulteration or contamination of food during processing. GMP encompasses the entire manufacturing process. Food operators need to be healthy, medically certified, and dressed appropriately to prevent food contamination, including wearing gloves and outer garments. Smoking, drinking, and eating are prohibited in food processing plants. Finished products, ingredients, and raw materials must be stored in separate areas from packaging and processing areas. Storage areas should be cleaned regularly and waste should be managed appropriately. Water safety programmes are essential, ensuring only potable water is used at food processing industries.[47]

Both Good Manufacturing Practices and Good Hygienic Practices are important for food safety. Good Hygienic Practices confirm that food prepared by a catering organisation is prepared, stored, and presented in a safe environment, which maintains its nutrients and lowers the chances of contamination. GHP is required for the food quality plan and includes the preservation of foodstuffs in the correct areas, proper sanitization, and correctly defrosting food. GMP are important in the production of polished foods, protecting them from physical, chemical, and biological threats. GMP

[47] Supra n 22

ensures quality and includes exercises that measure safety when food is packaged and made.[48]

2.7 Food Regulations and Standards for Management of Food Quality and Safety

FBOs (Food Business Operators) are conscious of the quality of their operations and by-products in today's competitive market. The term quality and safety includes each facet of service and construction, from the collection of raw materials to the stage of consumer satisfaction. Consumers want to be guaranteed that purchased products are safe and do not pose health risks.[49]

Quality food standards are important to guarantee that products have desirable attributes like safety, environmental friendliness, accuracy, and they are sold at a fair price. Most people take these attributes for granted, but without standards, the quality of products and services decline. To protect the public from the health issues that can arise from unsafe food, accessible food quality should be examined and managed. Quality standards can be voluntary, compulsory, and mandatory. If a food item is certified by a specific licensing office, then it should be visible on its label. Violations of such rules are illegal, and those who fail to comply face prosecution and fines.[50]

2.8 Constitutional Perspectives

The right to safe food is protected under various articles of the Constitution of India, including Articles 21, 32, 226, 39, and 47. Article 21, covering the Right to Life and Personal Liberty, specifies that "No person shall be deprived of his life or personal liberty except according to procedure established by law.". Article 21 has two parts covering the right to life and the right to dignity, and within those, the provisions of the law. The right to life is considered the right to live a dignified life where everyone is happy, can express themselves, and has the right to have safe food for consumption. The right to live covers the right to live with dignity and thus it is more than mere animal existence. It covers both citizens and non-citizens. Article 21 only applies to natural persons.[51]

The right to food is still to be recognized as a fundamental right for Indian citizens. While Article 21 covers the right to life and personal dignity, there is still a demand for a separate food-related right. Malnutrition can hinder an individual's ability to

[48] Ibid
[49] Ibid
[50] Ibid
[51] Narender Kumar, Constitutional Law of India 294 (2008)

appreciate life fully. The public still does not know enough about cooking safe food, even when they are given some knowledge. A narrow interpretation of the right to food is simply freedom from hunger. A wider interpretation includes freedom from unsafe food, malnutrition, and under-nutrition. Food safety and under/malnutrition cover things like access to clean water and health care. The right to life is a fundamental right given by the constitution of India and is there to combat such issues.[52]

Article 32 allows citizens to approach the Supreme Court if their fundamental rights are violated. If unsafe food is supplied, the public has the right to seek remedy at the apex court. Article 226 provides a similar right to file a case at the High Court. Article 39 directs states to create policies for citizens, men, and women. It also talks of the formation of policies to help the health and strength of workers.[53]

Article 47 covers the duty of the state to improve the nutrition and living standards of its people. It provides that "The State shall regard the raising of the level of nutrition and standard of living of its people and improvement of public health as among its primary duties and, in particular, the state shall endeavour to bring about prohibition of consumption except for medicinal purposes of intoxicating drinks and drugs which are injurious to health". Thus, the constitution includes provisions covering the rights of the public and the duties of the state to enforce those rights.

In addition to the above provisions, the Constitution of India contains different lists and entries related to health and food safety, which are in the seventh schedule of the Constitution. These are divided into three parts: the Union List, State List, and Concurrent List. Each list covers different issues on which the central and state governments have the right to make legislation.

- **Union List**: The Union List includes 100 items of national importance, with the Union Parliament having the right to legislate. These items include "Public health and sanitation; hospitals and dispensaries". The state is given the right to make laws to help the public with regard to food safety and sanitation.
- **Concurrent List**: The Concurrent List contains 52 items on which both the Union Parliament and State legislatures can enact laws. Item 18 provides for "Adulteration of Foodstuffs and other goods". This allows the Union and State to make laws on the adulteration of food and similar goods.

[52] Ibid
[53] Ibid

- **Concurrent List—Adulteration of Foodstuffs**: Through this entry, the Parliament of India enacted the Prevention of Food Adulteration Act in 1954 to curb food contamination and to prevent threats to human life from unhygienic food.[54]

2.9 Analysis of Legislations Relating to Food Safety in India

Food is essential for life, and human growth is dependent on the food we consume. To understand food safety laws and nutrition, it is necessary to understand both the wider aspects of food and nutrition. If food quality is low, it presents a serious health issue, and it is then that food quality legislation becomes important. The quality of food includes the prevention of contamination and maintenance of quality. Food safety includes the safety of water, which is an essential component of food. There are different laws in place to ensure water safety. Food safety in India is regulated by different laws, both criminal and civil.[55]

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During British rule, the importance of food safety was recognized. The British included provisions related to food safety under the Indian Penal Code of 1860, with Chapter XIV covering "Offences Affecting The Public Health, Safety, Convenience, Decency and Morals" in sections 272 to 277. The Bharatiya Nyaya Sanhita (BNS), 2023, has introduced several changes to the provisions related to the adulteration of food, drink, and drugs, as previously outlined in the Indian Penal Code (IPC). Chapter XV dealing with "Offences Affecting The Public Health, Safety, Convenience, Decency and Morals" in Sections 274 – 279.

- **Section 274** deals with the Adulteration of food or drink intended for sale. If an individual adulterates food or drink to make it noxious, with the intent of selling it as food, they are punished with imprisonment (up to six months), or a fine (up to 5000 rupees) or both. The offence is non-cognizable, bailable, non-compoundable, and is tried by a Magistrate.
- **Section 275** deals with the Sale of noxious food or drink. Whoever sells or exposes for sale food that is noxious or unfit to eat, while knowing it is harmful, is punished with imprisonment (up to six months), or a fine (up to 5000 rupees) or both. The offence is non-cognizable, bailable, non-compoundable, and is tried by a Magistrate.

[54] H.G. Kulkarni, Right To Health Under The Constitution Of India, All India Reporter, 203,204 (2014)
[55] P.M. Bakshi, Right To Nutrition, 37 Journal Of The Indian Law Institute, (1995).

- **Section 276** covers the Adulteration of drugs. If a person adulterates a drug or medical preparation to lessen its efficacy, change its operation, or make it noxious, they are punished with imprisonment (up to one year) or a fine (up to 5000 rupees) or both. The offence is non-cognizable, non-bailable, non-compoundable, and is tried by a Magistrate.
- **Section 277** is about the Sale of adulterated drugs. Whoever knowingly sells, exposes, or issues adulterated drugs is punished with imprisonment (up to six months), or a fine (up to 5000 rupees), or both. The offence is non-cognizable, bailable, non-compoundable, and is tried by a Magistrate.
- **Section 278** covers the Sale of a Drug as a different drug or preparation. Whoever knowingly sells, exposes, or issues a drug or preparation that is different from what it should be, is punished with imprisonment (up to six months), or a fine (up to 5000 rupees), or both. The offence is non-cognizable, bailable, non-compoundable, and is tried by a Magistrate.
- **Section 279** covers Fouling water of public spring or reservoir. Whoever voluntarily corrupts or fouls a public water source, to make it less fit for use, is punished with imprisonment (up to six months), or a fine (up to 5000 rupees), or both. The offence is cognizable, bailable, non-compoundable, and is tried by a Magistrate.

  Despite these provisions in the Indian Penal Code of 1860, they were not sufficient to address all food safety issues. This led to the passing of separate laws after Indian independence.[56]

  Law of Torts: Food safety is also covered under the Law of Torts, which involves wrongful acts. Tort is an obligation imposed by law that should be followed. Tort law includes both intentional and unintentional torts. Tort law covers incidents of food safety through negligence and strict liability.[57]

  Agricultural Produce (Grading and Marketing) Act, 1937 (AGMARK): This Act specifies standards for selling and classifying agricultural products. The Department of Agriculture & Co-operation (DAC), through the Directorate of Marketing and Inspection (DMI), implements agricultural marketing plans. AGMARK promotes quality control, grading, and standardization of agricultural enterprises for domestic and export trade. By-products are given an AGMARK certification under the Agricultural

[56] Ken Albala, The Sage Encyclopedia of Food Issue 2, 905 (2015).
[57] Ibid

Produce (Grading and Marketing) Act, 1937, which was modified in 1986. Farm-level grading is done at the producers' level. The AGMARK Act covers 213 food items, ensuring quality based on standards. Agricultural items are graded as ordinary, fair, special, or good, and are also given grades such as 1, 2, 3, and 4. Grades and standards are decided on the basis of the chemical and physical qualities of the food items. AGMARK also provides organic certification for farming products.

The Vegetable Oil Products (Control) Order, 1947: This order regulated the vegetable oil products industry through the Directorate of vanaspati, vegetable oils & fats, and the Department of food and public distribution in the Ministry of Consumer Affairs.[58]

The Prevention of Food Adulteration Act, 1954: This was the first Act on food safety after India's independence. This act provided protection against contaminated or adulterated food and prevented fraud by suppliers. The Act also regulated sub-standard food, additives, flavours, pesticides, and chemicals. A violation of the law could result in a maximum penalty of one year imprisonment, and a fine of up to 2000 rupees. Subsequent offences also included license cancellations.[59]

Essential Commodities Act 1955, (in relation to food): This aims to protect consumers from deceitful traders and ensure the availability of essential goods at fair prices. The Act regulates commodities crucial for enhancing or maintaining supplies. Currently, there are seven essential goods listed under the Act. The Union government can modify, add, or remove commodities from this list based on general interest and conditions like non-availability, natural disasters, war, or anticipated shortages.[60]

The Essential Commodities (Amendment) Ordinance, 2020 focuses on the regulation of food items. It allows the Union government to regulate commerce, trade, distribution, supply, and production of essential commodities, particularly oils, edible oilseeds,

[58] Slide share, Food Safety and Standards Act (Jan 4,2025, 5:29 PM), https://www.slideshare.net/SukhveerSingh31/food-safety-and-standards-act.

[59] Vaish Associates, India:Laws Governing The Food Industry In India –Revisited (Jan. 20, 2025, 7:40 PM),http://www.mondaq.com/india/x/244880/food+drugs+law/Laws+Governing+The+Food+Industry+In
+India+Revisited /.

[60] National Institute of Health and Family Welfare, The Prevention of Food Adulteration Act, 1954 (Amended in 1964, 1976, 1986) (Nov. 29, 2025, 7:40 PM), http://www.nihfw.org/Legislations/THEPREVENTIONOFFOODADUTERATION.html .

onions, potatoes, pulses, and cereals, under extraordinary circumstances such as natural calamities, expected price rise, famine, and war.[61]

The Fruit Products Order, 1955: The Fruit Products Order, 1955 was declared under section 3 of the Essential Commodities Act. It aimed to ensure quality standards, maintain hygienic conditions, and fabricate vegetable and fruit products. As per the order, every manufacturer of vegetable and fruit products had to obtain a license. The order outlined basic requirements for compliance, including limits on preservatives, product standards, technical staff, machinery, personnel hygiene, and sanitary premises.[62]

The Solvent Extracted Oil, De Oiled Meal, and Edible Flour (Control) Order, 1967 aimed to ensure that solvent extracted oils, if refined, meet quality standards before reaching consumers. It specified standards to prevent oil adulteration. The order focused on consumer protection, quality manufacturing of solvent extracted oils, edible flour, and prohibited the stocking or offering of any solvent that did not comply with quality standards.[63]

The Meat Food Products Order, 1973 was established to provide licenses for processing meat products, ensuring their sale, production, regulation, and maintaining sanitation and hygiene. It also regulated chilled poultry and fish food items. Manufacturers dealing in re labelling, repacking, packing, or manufacturing of meat products, except those using meat on-site like hotels and restaurants, were required to have a license.[64]

Bureau of Indian Standards Act, 1986: BIS was established as the National Standards Body of India under this Act, replacing the Indian Standards Institution of 1947. To protect consumer interests, BIS runs a product certification scheme covering various industrial fields from electronics to textiles and agriculture. BIS sets standards for processed foods related to labelling, packaging, raw materials, and hygiene. BIS certification allows manufacturers to use the ISI Mark, symbolizing quality products.[65]

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[61] Ministry: Consumer Affairs and Food Distribution , The Essential Commodities (Amendment) Bill, 2020 (Dec.10, 2025, 8:18 PM), https://prsindia.org/billtrack/the-essential-commodities-amendment-bill-2020 .

[62] Food Safety Solutions, Food Safety Bill(Dec. 3, 2025, 7:18 PM), http://www.foodsafetysolutions.in/law regulations/ .

[63] Ibid

[64] Ibid

[65] Supra n 45

BIS also acts as a licensing authority for packaged mineral water in India. The Government of India mandates BIS certification for safety and public health on products like complementary foods, follow-up formulas, plastic/glass bottles, milk cereal-based weaning foods, infant milk substitutes, and condensed milk. BIS maintains a close watch on the quality of certified items through its monitoring functions. BIS product certification requirements align with ISO/IEC 17065 standards for labelling, packaging, clean manufacturing procedures, quality, and raw materials.[66]

The Consumer Protection Act, 1986: This Act was established to safeguard consumer rights and ensure quick, cost-effective, and accessible dispute resolution. It addresses harassment by service providers, sellers, and producers through deceptive claims and inferior products. Consumer forums hear complaints and take action against fraudulent merchants. The Act provides basic consumer rights, including education, remedy against unfair practices, fair access to services and goods, and protection against harmful products.[67]

The Milk & Milk Products Order, 1992: Promulgated under the Essential Commodities Act, 1955, this order mandates registration for dairy plants handling over 10,000 litres of milk solids annually. It aims to regulate the production, processing, and distribution of milk products, ensuring quality and protecting public interest.[68]

The Edible Oil Packaging (Regulation) Order, 1998: Issued to ensure the availability of quality and safe packaged edible oils, this order requires edible oil packers to register with the relevant authority and provide testing facilities for oil samples. State governments can exempt certain edible oils from the order's application.[69]

Food Safety and Standards Act, 2006: Replacing the Prevention of Food Adulteration Act, 1954, this Act established the Food Safety and Standards Authority of India (FSSAI) as the sole food standard authority. It sets comprehensive standards for food safety, covering labelling, packaging, manufacturing, and hygiene. The Act repealed several previous regulations, creating a unified policy to oversee food safety and eliminate multi-departmental controls. The Act adheres to global practices and ensures food is safe for human consumption.[70]

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[66] Ibid
[67] Supra n 9
[68] Department Of Animal Husbandry And Dairying, Milk and Milk Product Order 1992, https://dahd.nic.in/related-links/milk-and-milk-product-order-1992
[69]
[70]

Offences and punishments under FSS Act, 2006: Chapter- IX sections 48 to 67 of the FSS Act, 2006 talks about offences and penalties which can be imposed under the Act.

General provisions relating to offences: Under section a person who render any item of food harmful to health either by mixing any article or substance of food, using any article or substance as an ingredient in food preparation, abstracting any constituents from food or subjecting food to any other treatment or process with the knowledge of its distribution or sale for the human consumption is held liable for such crime. Section also provides a method to know whether any item of food is injurious or unsafe to health by providing that it can be determined if its normal directions to use are missing, if information provided has long term or short term health effects on humans, if it carries with it toxic effects, if it is sensitive to a category of consumers, if its quality is below standards fixed by the Act.[71]

General provisions relating to penalty: this section shares certain points which are to be considered by Tribunal or Adjudicating Officer to judge the quantum of punishment. These points are: amount of loss caused or likely to be caused to any person, amount of unfair advantage or gain if quantifiable, repetitive nature of the contravention, if contravention is without offender's knowledge etc.[72]

Penalty for selling food not of nature or substance or quality demanded: it provides that if any person sells to the purchaser any type of food which is not in conformity with the Act's provisions or regulations shall be responsible to a punishment not exceeding five lakh rupees.[73]

Penalty for Sub-standard food: section shares that if any person, who either by himself or with the help of any other person on his behalf sells, stores, manufactures, imports or distributes any food item for human consumption if found substandard shall be held responsible to a punishment which might extend to rupees five lakh.[74]

Penalty for misbranded food: as per section if any person whether by himself or by other person on his behalf stores, sale, manufacture, imports or distributes any food for the consumption of humans being misbranded shall be held liable to a penalty of three

[71] Section 48 of the FSS Act.
[72] Section 49 of the FSS Act
[73] Section 50 of the FSS Act
[74] Section 51 of the FSS Act

lakh rupees. Again under section the Adjudicating Officer can also issue a guideline to the guilty person to rectify his mistake else such food shall be destroyed.[75]

Penalty for misleading advertisement: it provides that if any person publishes, or acts as a party to the advertisement publication which describes food as of misleading quality, gives its wrong guarantee shall be held liable to a penalty which might extend to rupees ten lakhs. Section also provides that the all these points like false guarantee, misleading statements etc. shall be determined after checking the label of each food product.[76]

Penalty for food containing extraneous matter: Under section if any individual either by himself or with the help of some other person stores, sells, manufactures, imports or distributes any of the food article for human consumption comprising extraneous substances, shall be responsible to a punishment which can extend to rupees one lakh.[77]

Penalty for failure to comply with the directions of Food Safety Officer: This applies to a food business importer or operator if such person fails to follow the requirements of the FSS Act, 2006, its rule, regulations or orders issued time to time under it under the orders of Food Safety Officer. Penalty under the section for such contravention shall extend to rupees two lakhs.[78]

Penalty for unhygienic or unsanitary processing or manufacturing of food: Under section any person if at any time either by himself or with the help of any other individual processes or manufactures any food item for consumption of human under unsanitary or unhygienic situations shall be guilty to a penalty extending to rupees one lakh.[79]

Penalty for possessing adulterant: As the title suggests this section imposes penalty for the possession of adulterant. Under section any person doing such crime either himself or with the help of other or distributing, selling, storing or doing sale of an adulterant shall be held liable for a penalty not exceeding two lakh rupees where such adulterant is not harmful to health or for a penalty not exceeding ten lakh rupees where such adulterant is found harmful to health. Holding adulterant on some other person's behalf is no defence under this section.[80]

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[75] Section 52 of the FSS Act
[76] Section 53 of the FSS Act.
[77] Section 54 of the FSS Act.
[78] Section 55 of the FSS Act.
[79] Section 56 of the FSS Act.
[80] Section 57 of the FSS Act.

Penalty for contraventions for which no specific penalty is provided: Whoever found contravening provisions of this chapter in a situation where no separate penalty is found provided shall be held guilty to a penalty extending to rupees two lakhs.[81]

Punishment for unsafe food: This section says that if any person himself or with the help of any other person imports, distributes, sells, stores or manufactures any food article for human consumption which is not safe shall made punishable for a term of six months and with also fine which can extend to one lakh rupees where such failure or contravention don't result in injury, with imprisonment for a term extending to one year and with fine extending to three lakh rupees where such failure results in a non-grievous injury, with imprisonment for a term which might extend to six months and with a fine of five lakh rupees where such failure results in a grievous injury, with imprisonment for a duration of seven years which might extend to imprisonment for life and also with fine which shall not be less than ten lakhs rupees where such failure results in death.[82]

Punishment for intervening with seized items: As per this section if a individual without the food safety officer's permission tampers, removes or retains food equipment, vehicle, labelling, package or advertisement material seized under this Act, he shall be punished with imprisonment for a duration which may extend to six months and also with fine extending to rupees two lakh.[83]

Punishment for false information: If a individual in relation with a direction or requirement under this Act, provides any information or generates any document that the individual knows is wrong or misleading, he shall be liable for imprisonment for a duration of three months and also with fine extending to rupees two lakh.[84]

Punishment for obstructing or impersonating a Food Safety Officer: Under section if a individual without reasonable justification, obstructs, resists, attempt to obstruct, threatens, impersonates or assaults a Food Safety Officer from exercising his functions under this Act, he shall be punishable with imprisonment for a term extending to three months and also with fine extending to rupees one lakh.[85]

[81] Section 58 of the FSS Act.
[82] Section 59 of the FSS Act.
[83] Section 60 of the FSS Act.
[84] Section 61 of the FSS Act.
[85] Section 62 of the FSS Act.

Punishment for carrying out a business without license: If a food business operator or any person except the persons having license under section 31 of this Act either himself or with the help of other persons imports, distributes, stores, sells or manufactures any food article without a valid license shall be made punishable with imprisonment for a duration which can extend to six months and also with fine which can extend to five lakh.[86]

Punishment for subsequent offences: Under section if any previously convicted person under this Act subsequently commits and if convicted of same offence, he shall be responsible to twice of the earlier imposed punishment or with a further fine on per day basis extending to rupees one lakh and if his offence is a continuous one then his license shall be cancelled. Further sub section (2) of section 64 provides that Court can cause the offenders place of residence and name to be published in a newspaper to which court deems appropriate.[87]

Compensation in case injury of death of consumer: Section provides a very important remedy by saying that without prejudice to the other provisions of this chapter, if any individual whether by himself or in association with other person imports, sells, distributes or manufactures any food article which causes harm to the consumer or his death, it shall be legal for Adjudicating Officer or the court to order him to pay compensation to the victim or his/her legal representatives, to a sum of rupees five lakh in case of death, not exceeding rupees three lakh in case of grievous injury, not exceeding one lakh in case of other injuries. As per section such compensation if imposed shall be paid immediately and in no case later than six months from the date of incident happening. Again if death happens in any case an interim relief shall be paid to the next kin within thirty days from the incident. Under section court or Adjudicating Officer can also publish the place of residence and name of the guilty person at the offender‟s expenses in such newspaper and in the manner they deems fit. In case of death or grievous injury of consumer Adjudicating Officer or court may also order for cancellation of license, recall food from market or forfeit his/her property. Prohibition order can also be issued in remaining cases.[88]

Offences by companies: As per this section if an offence under this Act has been done by a company, each individual who at the time such offence was happened was in

[86] Section 63 of the FSS Act.
[87] Section 64 of the FSS Act
[88] Section 65 of the FSS Act

charge of and was liable to, the company for the performance of business of the company shall be presumed liable of the crime and shall be responsible to be punished accordingly. In those cases where any company has various establishments, units or branches concerned person in charge or head of such establishments, units or branches shall be made liable. Exception to this provision says that if such head or person in charge proves that he had exercised due diligence for the prevention of such offence he shall not be held liable. Sub section 2 of this section provides that if an offence is found committed with connivance or consent of manger, director, secretary or other concerned officer of the company then such person shall be deemed to be the culprits of such offences and shall be punished accordingly.[89]

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: Section applies on a person who imports any article of food in violation of the Act's provisions, regulations and rules shall in addition to any punishment to which he may be liable under the Customs Act, 1962, Foreign Trade (Development and Regulation) Act, 1992 be also responsible under this Act and shall be proceeded against accordingly. If permitted by the competent authority under Customs Act, 1962 or under Foreign Trade (Development and Regulation) Act, 1992 any such food articles shall be returned or destroyed to the concerned importer.[90]

Different Regulations on Food Safety by Food Safety and Standards Authority of India: FSSAI (Food Safety and Standards Authority of India has given food operators who have been pointing finger at the food safety body to pay more attention to their mandate, that is Food Safety. In an open letter FSSAI has highlighted the self regulation and role of industries. FSSAI guidelines provide that it believes in make in India initiative. Slogan used in this regard by FSSAI was of "please help us to help you". Through a letter FSSAI has answered to the FBOs (Food Business Operators) concerns on food safety by answering not to compromise the food safety.209 In the letter FSSAI also referred the US Food and Drug Administration system on food safety regulations. In this it highlighted that how much the developed nation's public is aware on food safety. Such consumer awareness as per FSSAI forces the industries there to regulate their self on self basis. FSSAI has showed serious concerns on the unregulated junk food items

[89] Section 66 of the FSS Act
[90] Section 67 of the FSS Act

which are sold by the renowned brands and which are still advertised publicly by celebrities. As per FSSAI children are the most vulnerable victims of junk food advertisements.[91]

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Food Regulations-2011: In the year 2011 Food Safety and Standards Authority of India issued certain regulations mainly covering the thing which impacts the Food Industry of India. FSSAI (Food Safety and Standards Authority of India) is an autonomous statutory authority. This is established by Food Safety and Standards Act, 2006. Main Aim of establishment of it was to set up a single reference point for all matters relating to food standards and safety.[93] Regulations of 2011 discuss Food processing industry as one of the largest sector of India in different terms of: export, consumption, growth and production. It shares that present legislative requirements puts more focus on hygiene of food, ISO 22000 and HACCP. Regulations reveal that there are number of unorganized players in the sector of food processing industry. These players don't follow standards of quality which is a serious issue. Consumption of nation's food basket is diversifying away towards higher value, more fish & meat, diary, vegetables, fruits and products of perishable nature. All this is indeed a serious matter. It is the system as per these regulations which can ensure that wholesome and safe food items are marketed empowering authorities to map contamination sources, promotion of transparency, and public confidence by preventing unsafe food reaching to the consumers.[94]

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[91] 9 Down to Earth, FSSAI tells food industry to get more responsible https://www.downtoearth.org.in/news/fssai-tells-food-industry-to-get-more-responsible-49818

[92] *Ibid*

[93] Food Safety and Standards Autority of India, Regulations 2011 impact on Indian on Indian Food Industry (April. 18, 2020, 5:30 PM), https://www.slideshare.net/PallaviMoudgil/food-safety-and standards-authority-of-india-regulations2011impact-on-indian-food-industry

[94] *Ibid*

Food Regulations-2015: In the year 2015 also different food regulations were issued by FSSAI. Regulations again have stated the power and scope of FSSAI. It calls FSSAI as apex food regulator. 2015 regulations on food by FSSAI share the following points:

- **Non-standardized and standardized category of food**: In 2015 regulations FSSAI (Food Safety and Standards Authority of India) has divided Food products into standardized and non-standardized food. It also specifies the meaning of standardized and non-standardized food. Standardized food means: those food products for which the standards are prescribed and which don't require the approval of product prior to manufacture, sale distribution or import. Only the beginners in such food products are required to seek FSSAI License to start a business of food.[95]

For Non-Standardized food regulation provides that: Non-Standardized products of food not have standards as their safety parameters are either not ascertained or yet not known.

- There are 380 articles of food in 16 categories which are standardized.
- FSSAI is working to standardize another 12,000 more foods
- Traditional foods do not require product approval as they are being consumed for centuries in India. Their ingredients are now well known and thus these are safe
- If traditional food use some new food additive or ingredient then it need product approval
- Food imported in India need to follow the FSS(Food Safety and Standards) Act, 2006
- Importer also needs to comply with FSSAI regulations for distribution and sale of food products.[96]

Food Analysis and Management of Food Safety

Analysis of food is an necessary instrument in the governance of food safety and in presuming the quality of food. One of the officials of FAO (Food and Agriculture Organization) in food safety control R.K. Malik has expressed the position of Indian laboratories of food by saying: "If one looks closely at the ongoing position of labs inside the nation one notice that bulk of them need reconditioning and reinforcement in the terms of tools and skilled personals for orderly promotion in their performance. Again at the same time there is a call for foundation of numerous supplementary better

[95] Saurabh Arora, Food Regulations What is the Current Scenario in India , https://www.foodqualityandsafety.com/article/food-regulations-what-is-the-current-scenario-in-india-2/
[96] *Ibid*

staffed and equipped labs for orderly continuous growing need of consumer and food sector.‟

‘We have still to travel a long journey in capacity building in the area of analysis of food. Our nation i.e. India in a big nation which has a extended sector of food, trade and food industry. Customer at the present time in more conscious about the safety of food as a problem and their urge is to receive higher quality. Ease of access to appropriate and dependable scientific resources is thus a crucial component for the expansion of infrastructure, in both way industry and government. In this regard role of public and private sector is important.”

2.10 Conclusion

In conclusion, India's enactment of the Food Safety and Standards (FSS) Act in 2006 signifies a pivotal step towards streamlining and reinforcing the nation's food safety regulatory framework. This legislation was designed to consolidate the previously complex and fragmented regulations governing the import, sale, manufacture, and standards of food, with the overarching goal of ensuring safer and more wholesome food for human consumption. By integrating various earlier food laws, the FSS Act aimed to foster a more scientifically grounded approach to the development of the food industry. Despite the progress made through the introduction of the FSS Act, it is recognised that the legislation requires further refinement and a balanced approach to effectively serve the interests of both food industries and consumers.

The successful implementation of the FSS Act hinges on several critical factors, including:

*Enhancements in food analysis capabilities are essential for effective food safety governance and quality assurance. This involves upgrading and strengthening existing food laboratories with advanced equipment and skilled personnel to improve their performance.

*Establishing additional, well-equipped laboratories to address the increasing demands of both consumers and the food sector is imperative.

*Recognising the importance of collaboration between the public and private sectors in expanding the infrastructure and ensuring access to reliable scientific resources is crucial for sustained progress in food safety.

The FSS Act's regulations in 2011 highlighted the food processing industry's significance in India concerning export, consumption, growth, and production. While

existing legislative requirements emphasise food hygiene, ISO 22000, and Hazard Analysis and Critical Control Points (HACCP), the presence of numerous unorganised entities within the food processing sector poses challenges due to their non-adherence to quality standards. Furthermore, the diversification of the nation's food basket towards higher-value items such as fish, meat, dairy, vegetables, and fruits, many of which are perishable, underscores the urgency of addressing these issues.

The regulations of 2015 from the Food Safety and Standards Authority of India (FSSAI) further categorised food products into standardised and non-standardised categories. This categorisation impacts the approval processes required for manufacturers, sellers, distributors, and importers, with specific criteria outlined for each category. Ultimately, a robust system is needed to ensure the marketing of safe and wholesome food items, empowering authorities to trace contamination sources, promoting transparency, and instilling public confidence by preventing unsafe food from reaching consumers. Even with the progress made since the introduction of the FSS Act, India still retains various food legislations applicable across the spectrum of food businesses.

CHAPTER III: COMPARATIVE ANALYSIS OF FOOD SAFETY LAWS IN INDIA, UNITED STATES OF AMERICA AND AUSTRALIA

3.1 Introduction

Concerns about food safety and quality have existed since the beginning of civilisation, with governmental focus on preventing the sale of unsafe food developing later. In the 1800s, misbranded and adulterated food and drugs were prevalent in America[97]. Harvey Washington Wiley, a key figure in developing US food laws, advocated for pure food items. Despite holding a government position as Chief Chemist of the Bureau of Chemistry (later part of the FDA), he acted more as a public servant, working for years to convince the US Congress and the public about the necessity of federal legislation against misbranded and contaminated food and drugs. Journalists known as Muckrakers played a significant role in exposing harmful food and drugs during this period.[98]

The United States of America and Australia have been chosen for comparison in this study due to their globally recognised high standards in food safety regulation and enforcement. Both countries have developed robust legislative frameworks, advanced monitoring systems, and stringent compliance mechanisms that ensure the safety and quality of food products. Their proactive approaches, including science-based risk assessments, transparent labelling practices, and strong institutional oversight, serve as benchmarks for effective food safety governance. By comparing India's food safety laws with those of the USA and Australia, valuable insights can be gained into potential areas for reform and enhancement within the Indian regulatory framework.

The Massachusetts Bread Law of 1646 is an early example of US food law, establishing quality requirements for bread and undergoing amendments in 1652 and a complete rewrite in 1720. The Massachusetts General Food Law of 1785 followed. The first Congress session of the new United States also addressed food-related issues. Consumer rights, including the right to be informed, safe, heard, and to choose, have become the basis of consumer laws and policy globally, including in the United States, and were highlighted by the President. These rights have also been part of the European

[97] H.W. Schultz Food Law Handbook 8,9 (1981)
[98] Jennifer L. Pomeranz Food Law for Public Health 77, 78 (2016)

Union's policy framework since the 1980s[99]. The food industry, encompassing catering and processing, is a major sector. Food tastes vary. Research at the University of Oxford (1987-1991/92) examined the Right to Food as a human right for those dependent on international relief during famines, wars, and population movements in the 1980s. Population movements and refugee situations highlighted the inadequacy of the provided rations. Significant research into the nutritional status of refugees was initiated by the Centres for Disease Control (CDC), a US Department of Public Health. This research provided crucial data on the impact of starvation on the human body. A symposium at Oxford in 1991, involving the CDC, NGOs involved in relief distribution, UNICEF, and other UN departments, underscored the relevance of the Right to Food. Food hygiene and sanitation safety are equally important, with the US Public Health (USPH) service identifying over 40 foodborne diseases. Environmentally sustainable approaches remain a challenge for leading US food processors. Large food companies often assure consumers of their products' safety through advertising.[100]

3.2 U. S. Legal System and Food Regulation

The legislative power in the US is vested in Congress (House of Representatives and Senate). Each state has two senators serving six-year terms, and states are divided into districts, each electing a representative for a two-year term. Both senators and representatives work within congressional committees to pass federal legislation. A bill becomes law through a process involving proposal by one or more members of Congress, support from at least 35 members, deliberation in the House or Senate, review by an expert language committee, further deliberation, and approval by the governing body. Congress also defines and grants powers to federal administrative authorities. The actions of authorized agencies are limited by the scope defined in each law, and their funding is provided by Congress. Understanding the US legal system, including American jurisprudence and basic terminology, is crucial for comprehending food regulation.[101]

According to US terminology, Law is a rule of conduct enforced by a governing authority, a binding community custom controlled by legal processes. The American meaning of law includes statutes, regulations, ordinances, guidelines, and administrative rules. An Ordinance is an order enforced by a local government unit.

[99] Gabriela Steier & Kiran K. Patel, *International Food Law and Policy* 553 (2016
[100] Supra n 1
[101] Vikas Singh & Subhadip Majumdar, Text Book of Food Production 10, (2011)

Guidelines are non-binding suggestions. A Rule encompasses administrative resolutions, orders, and formal opinions, also known as "administrative rules". A Statute is a law enacted by a legislative body, and "law" can sometimes be used synonymously with "statute".

The four parts of the US legal system are Common law, Case law, Regulations, Statutes, and the Constitution. A similar legal system exists within individual states.

Statutes are written laws passed by the legislature, more precise and detailed than the broad US Constitutional law. Regulations passed by agencies are even more specific than statutes. Statutes derive their power from the US and state constitutions. Public acts by US state legislatures and Congress are called statutes, while municipalities often refer to their enactments as ordinances. All statutes must comply with the US Constitution, and local laws must comply with the relevant state constitution[102].

The Constitution of the U.S. is the supreme law, defining the rights of US citizens and the powers of the government. Other laws must comply with the Constitution, which operates on six main principles: people's power to govern, separation of powers, popular sovereignty, federalism, supremacy of national laws, civilian control of government limits, and checks and balances. The Federal Constitution forms the basis for all laws, imposing duties and limitations on government powers, ensuring that no law violates it, even when protecting public health. The Constitution empowers and limits the government. It is difficult to alter and protects long-term values. The US Constitution divides the government into three branches: Executive, Legislative, and Judicial. Article 1 grants legislative power to Congress, although the other branches can also make additional laws. Article 2 vests executive power in the US President, and Article 3 vests judicial power in the courts. Similar to the Indian Constitution, the US system has a "separation of powers" with checks and balances among the three branches, which are equally respected. The US Constitution also limits government powers, especially those of the federal government. The Constitution has a preamble outlining its purpose and seven articles approved in 1789, with subsequent amendments, the first ten being the Bill of Rights, protecting individual rights by restricting national government powers.[103]

[102] Patricia A. Curtis , Guide to US Food Laws and Regulations 3 (2013).
[103] Id

Regulations are made by administrative agencies to execute laws enacted by the legislature. These agencies interpret legislative rules and laws. Regulations must fall within the authority delegated by a statute and typically have the full force of law.[104]

Common Law and Case Law knowledge of judicial decisions provides insight into US food law and policy. Judicial opinions are rulings by a judge in two-party matters. A judicial decision forms the basis for the court's judgment. Common law or case law is based on previous court rulings, dating back to 11th-century England where judges referred to past cases for decisions based on what was common. In conflicts between common law and statutory law, statutory law prevails. US Supreme Court decisions are the "law of the land," binding on all other federal courts. The Supreme Court interprets the constitutionality of actions and laws by both private citizens and the government. It often decides food-related cases due to their broader significance for food law policy and public health. Case laws are formed by following precedents, making them an important source of law in the US. Judges generally follow legal principles from earlier decisions, consistent with fair play. Common laws are based on general principles, custom, and tradition, with much of US common law derived from English legal principles[105].

The Federalism system in the US government is based on six principles: government serves the people, equality of all citizens, free exchange of ideas, citizens' consent to be ruled by law, protection of minority political rights, and majority rule. State, federal, and local laws, agencies, and bodies work together to carry out these functions, ensuring that the government's authority comes from the people through elected representatives. Federalism involves a vertical division of government powers between state and federal governments, restricting states from interfering with each other. Federal laws and the US Constitution are the supreme laws of the land under the supremacy clause. Powers not delegated to the federal government by the Constitution are reserved to the states or the people. The division of power has been a continuous debate in US history. The US Congress has the power to regulate commerce through the constitution's commerce clause, covering activities directly or indirectly affecting interstate commerce. Matters not specifically under federal domain fall to the states, including health and public welfare. The term "police power" refers to the executive power of the state, controlling

[104] Supra n2
[105] Mark C. Sanchez , Food Law and Regulation for Non Lawyers , 8 (2015).

welfare, safety, health protection, and general well-being. States are believed to have the traditional police power to create health and food inspection laws. However, the federal government's reach is considerable, as most food businesses are considered to affect interstate commerce. States can also enforce stricter food laws than federal standards, as seen with Michigan mandating pasteurization before a federal law existed. Courts in the US can also make and enforce food laws, even if they differ from state and federal laws. Uniform education and cooperation are necessary to prevent inconsistencies, especially in food law.[106]

The Role of State and Local Governments in Food Safety at United States involves the federal government, with USDA and Congress, providing dietary and nutrition advice. USDA has agencies like the Food and Nutrition Service (FNS) and the Center for Nutrition Policy and Promotion (CNPP), with CNPP responsible for developing USDA's dietary instructions. School food policies and USDA's food assistance plans are part of this. Administrative agencies, part of the executive branch, must follow procedural statutes (Administrative Procedure Act, Freedom of Information Act, Federal Advisory Committee Act) in addition to their enabling statute and the Constitution[107]. Various constitutional amendments pertain to food in the US. Courts have generally upheld the power of government to inspect food establishments. The Fifth Amendment has three relevant provisions: Due Process (no deprivation of life, liberty, or property without due process), Self-Incrimination (no forced self-testimony, especially in criminal cases), and Just Compensation (private property not taken for public use without just compensation).

Self-Incrimination under the Fifth Amendment allows individuals to refuse to answer official questions and not be forced to testify against themselves, mainly in criminal cases. The Fourteenth Amendment extends this right against state and local government agencies. However, the Fifth Amendment's protection has limited application to the records and documents held by a food establishment because the privilege is individual and does not extend to unincorporated bodies or associations. It also does not apply to custodians or agents of corporate records or group bodies. Single business proprietors also cannot withhold legitimate records. For example, a food company cannot refuse to document temperature and time as per food regulations. Conversely, a law requiring

[106] Supra n 6
[107] Supra n 2

documentation of criminal activity, like gambling, cannot force bookies to register their profession due to self-incrimination. Concerns exist regarding reluctance to create incriminating records when food establishments' reports are used for criminal prosecution[108].

Due Process under the Fifth Amendment requires fair application of law, including the opportunity to be heard and proper notice. Notice means sharing adequate information from the government about legal requirements. Laws should be written in understandable language. Due process also requires notification of government actions and a chance to be heard. For example, revoking a food establishment license affects individual rights.[109]

Compensation for the taking of private property under the Fifth Amendment requires just compensation for private property taken for public use. Adulterated or misbranded food can be seized. Individuals whose private rights are affected must be compensated. Taking food of zero value is not considered a taking. Seizing food products interferes with property use. The motive for seizing food should be public welfare or health, as the government protects fundamental rights, justifying such seizures.[110]

3.3 Development of Food Laws in United States of America

Concerns regarding food safety and quality have been prevalent since the dawn of civilisation, but governmental focus on preventing the sale and fraudulent practices related to unsafe food has developed over time. In the United States of America during the 1800s, the presence of misbranded and adulterated food and drugs was a common feature.[111]

The genesis of food regulations in the United States can be traced back to the colonial era. Initially, federal (national) activity was limited to addressing imported food items . An early instance of US food law intended for domestic consumption was the Massachusetts Bread Law of 1646, which underwent amendments in 1652 and was subsequently rewritten in 1720, setting quality standards for bread. This was followed by the passage of the Massachusetts General Food Law of 1785.[112]

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[108] Neal D. Fortin, Food Regulation Law, Science, Policy, and Practice 3 (2016).
[109] Id
[110] Id
[111] Supra n 1
[112] Id

To prevent the importation of adulterated tea, the first federal food protection law was enacted by the US Congress in 1883. This was later followed by the Oleomargarine statute in 1896, which was introduced due to objections from dairy farmers concerning the sale of contaminated coloured fats and butter that mimicked genuine butter .

A significant figure in the evolution of food laws in the United States was Harvey Washington Wiley, who served as the Chief Chemist of the Bureau of Chemistry, which later became part of the Food and Drug Administration . Despite being a government official, Wiley is recognised for acting as a public servant, tirelessly advocating for a federal law to prohibit misbranded and contaminated food and drugs, ultimately convincing the US Congress and the American public of its necessity. During this period, investigative journalists known as Muckrakers played a vital role in exposing the prevalence of harmful quality food and drugs in the market[113].

The publication of Upton Sinclair's "The Jungle" in 1905, which vividly depicted the unsanitary and dreadful practices within the meat industry, served as a crucial motivating factor. Public outcry and President Theodore Roosevelt's own investigations led to the enactment of two pivotal acts on June 30, 1906: the Pure Food and Drug Act and the Meat Inspection Act[114]. These are considered the foundational statutes of modern US food regulations . The Pure Food and Drug Act expanded the regulatory responsibilities of the U.S. Bureau of Chemistry . The Meat Inspection Act of 1906 empowered the U.S. Department of Agriculture to inspect the slaughtering and processing of goats, swine, sheep, cattle, and horses intended for human consumption, aiming to prevent contaminated livestock from entering the food supply and ensuring hygienic processing conditions[115] .

Despite these legislative advancements, legal challenges and shortcomings persisted. For instance, the Pure Food and Drug Act did not prohibit therapeutic claims, only false statements regarding a drug's identity or ingredients . A significant disaster involving a sulfanilamide elixir mixed with diethylene glycol, resulting in over 100 deaths, spurred the passage of the landmark Food, Drug, and Cosmetic Act of 1938[116]. This act significantly strengthened food law by mandating proof of safety for drugs, requiring

[113] FDA, FDA BACKGROUNDER:MILESTONES IN U.S. FOOD AND DRUG LAW HISTORY (updated May 5, 2012).
[114] Philip J. Hilts, The FDA at Work: Cutting-Edge Science Promoting Public Health, FDA CONSUMER MAGAZINE (Jan.–Feb. 2006)
[115] Id
[116] Supra n 2

pre-market approval, regulating factory inspections, establishing quality fill standards for food containers, implementing safety measures for unavoidable food contaminants, and enhancing governmental oversight of therapeutic devices and cosmetics.

Concerns surrounding food additives led to the Food Additives Amendment Act of 1958 . This act established criteria for the safety of food additives, requiring manufacturers to demonstrate their safety before introduction into the food supply. Food ingredients were categorised as either generally recognised as safe (GRAS) or as food additives requiring the Food and Drug Administration (FDA) approval . This was followed by the Color Additive Amendment Act of 1960, which mandated the FDA to determine the safety of colour additives based on its own analysis and scientific data submitted by proposing companies[117].

In a special message to the U.S. Congress on March 15, 1962, President John F. Kennedy highlighted the necessity for legislators to consider consumer rights when adopting laws4 . He declared fundamental consumer rights, including the right to be informed, the right to safety, the right to be heard, and the right to choose, which have since become foundational for consumer laws and policies globally, including in the United States.[118]

The Nutritional Labeling and Education Act of 1990 was passed to require packaged foods to bear nutritional labelling and to ensure that health and nutritional claims for food were consistent with FDA terms14 . This enhanced focus on food safety regulation was driven by consumer advisories, foodborne illness outbreaks, and numerous high-profile food recalls[119] .

On January 4, 2011, President Barack Obama signed the FDA Food Safety Modernization Act (FSMA) into law.[120] This amendment of the FD&C Act is the most significant revision of U.S. food law since 1938 when the Food, Drug, and Cosmetic Act replaced the Food and Drug Act of 1906. The law is historic both in breadth and depth of its coverage. Through federal and state legislations, administrative regulations, and judicial decisions, the United States has developed a comprehensive and evolving legal framework to address food safety and quality concerns. Agencies such as the FDA,

[117] Id
[118] Suprra n 3
[119] Id
[120] The FDA Food Safety Modernization Act, Pub. L. 111-353 (2011)

USDA, and CDC play crucial roles in this system, their functions adapting over time to meet the ongoing challenges of ensuring a safe food supply.

3.4 Principles and Advantages of HACCP

The Hazard Analysis Critical Control Point (HACCP) concept was developed in the 1960s by NASA in collaboration with the U.S. Army Natick Laboratories. In 1971, the Pillsbury Company worked with these organizations to adapt HACCP as a rational approach to process control for the food industry. HACCP provides a simple but specific way to understand the level of food safety.[121] Various scientific groups, including the National Academy of Sciences (NAS), have recommended HACCP for controlling critical areas of food production to ensure wholesomeness. HACCP, as a system for preventing microbiological and other hazards in food production, is also accepted by the Codex Alimentarius Emeritus Commission of FAO and WHO. The system is designed for prevention, verification, and documentation of potential issues throughout manufacturing, handling, procurement, and receiving of raw materials.

HACCP involves identifying Critical Control Points (CCPs) where control is necessary to prevent microbes from reaching threatening levels. Sanitarians need to assess each step's importance to the food product's safety and acceptability. Hazard analysis depends on understanding physical and chemical contaminants and recognizes that food safety is affected during processing, handling, and cross-contamination. Poor cleaning of equipment, inadequate separation of cooked and raw food, and poor sanitation are also within its analysis.

The advantages of HACCP (Hazard Analysis and Critical Control Points) are significant and wide-ranging. It enhances market accessibility and recognition by assuring consumers and regulators of the safety of food products. HACCP also serves as a powerful marketing tool, allowing producers to command higher prices due to the added assurance of quality and safety. By improving food safety throughout the supply chain, HACCP enables timely responses to potential hazards and issues, minimizing risks to public health. It guarantees food safety starting from primary production, ensuring that safety measures are integrated at every stage. Furthermore, HACCP enjoys global recognition and certification, which facilitates foreign trade by meeting international standards and building trust with international buyers. [122]

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[121] Supra n 5
[122] Id

3.5 Food Production, Import and Export at USA

The USA has one of the world's largest economies and is the third-largest nation by population and land mass. Its federal republic system has 50 states. The American food industry contributes about 20 percent of the US Gross National Product, employing nearly 14 million people with an additional 4 million jobs in related industries. Currently, there are over 377,000 registered food facilities (domestic and foreign) that pack, process, and manufacture food for humans and animals in the US. The diverse racial mix in the US population influences food preferences, the availability of different cuisines, outlet types, and products offered for sale. US agricultural exports in 2013 exceeded $144 billion. The US has engaged in deliberations and agreements with various nations to reduce sanitary and phytosanitary barriers to US food and agricultural exports.[123]

3.6 Arrangement of Food Safety and Control System in USA

Several principal national (federal) organizations play key roles in ensuring food safety in the United States. The Food and Drug Administration (FDA) is a primary agency responsible for regulating a wide range of food products. Within the FDA, the Office of Foods and Veterinary Medicine (FVM) oversees policies related to food and animal health, while the Center for Food Safety and Applied Nutrition (CFSAN) focuses on food safety, nutrition, and labeling. The Center for Veterinary Medicine is responsible for ensuring the safety of animal drugs and food derived from treated animals. The U.S. Department of Agriculture (USDA) also plays a critical role, particularly through its Food Safety and Inspection Service (FSIS), which regulates meat, poultry, and egg products. Additionally, the Centers for Disease Control and Prevention (CDC) contributes to food safety by monitoring and investigating foodborne illnesses and outbreaks, helping to protect public health. Together, these agencies coordinate to maintain and enhance the safety of the nation’s food supply.[124]

Food and Drug Administration (FDA): The FDA's modern powers were granted in 1938. It regulates a wide range of food products, including shell eggs (excluding poultry and meat products), wine with less than seven percent alcohol, and plays a major role in overall food safety. Preservatives, defined by the FDA, include antioxidants and flavors (enzymatic or non-enzymatic) used to preserve food. The FDA is a federal

[123] Susan Kennan Stephen Spice et.al., Food Safety Policy and Regulation in the United States 73 (2015)
[124] Id

agency within the US Department of Health and Human Services, comprising six product centres, two offices, and one research centre. Its responsibilities cover the 50 US states, the District of Columbia, Puerto Rico, the Virgin Islands, American Samoa, and other US territories. The FDA's current goals for food programs are to promote and protect human and animal health, ensure food safety (including dietary additives), set science-based standards for preventing foodborne illness, ensure animal feed and drug safety, and ensure acceptance of these standards. Other goals include ensuring informative food labels and preventing deliberate food adulteration. When the FDA discovers adulterated food, it informs the public and initiates recalls, which can be voluntary or mandatory, usually due to adulteration causing foodborne illnesses. The Food Safety Modernisation Act (FSMA) enhances the FDA's power to issue mandatory recalls if a company fails to recall voluntarily. With FSMA's permission, the FDA can also suspend the registration of a food facility deemed a serious health hazard. In September 2011, the FDA issued its first such food seizure, finding insect and rodent infestation at a food store and processing facility in Washington State.[125]

The FDA’s main activities and responsibilities encompass a wide range of functions aimed at ensuring the safety and integrity of the U.S. food supply. It organises program evaluations, provides training, guidance, and technical or scientific advice to local and state regulatory agencies, public health partners, and industries. The FDA collaborates closely with territorial, tribal, local, and state entities to strengthen food safety systems nationwide. It also funds contracts, cooperative agreements, and grants to support states in conducting inspections and building necessary infrastructure. The agency inspects processors and manufacturers of FDA-regulated food products, including dairy farms, food processing facilities, animal feed processors, and imported goods at the border. Within its jurisdiction, the FDA enforces regulations and administers approximately 80% of the U.S. food supply, excluding poultry and meat regulated by the USDA. The agency is responsible for analysing and collecting samples to detect chemical, microbial, and physical adulteration of food. It reviews the safety of food additives before marketing and assesses the safety of animal drugs. Additionally, the FDA conducts surveillance and ensures the safety of animal food and feed. It develops interpretations, guidelines, ordinances, and model codes, and organizes production standards such as plant sanitation, HACCP programs, packaging requirements, and

[125] S.N. Mahindru, Food Additives 4, (2015)

good manufacturing practices. The FDA also works with foreign nations to ensure the safety of specific food products entering the U.S. market and educates both consumers and industries on safe food handling practices[126]

FVM Office of Foods and Veterinary Medicine: Formed in August 2009, The agency serves as the central point for planning and executing the President's Food Safety Working Group (FSWG), coordinating efforts to strengthen the nation's food safety system. It provides leadership, support, and guidance across all aspects of the FDA's Foods Program to effectively achieve public health objectives. Additionally, the agency operates under the enhanced food safety authorities granted by the Food Safety Modernization Act (FSMA) of 2011, enabling it to implement preventive measures and modernize regulatory oversight to better protect consumers.[127]

CFSAN (Centre for Food Safety and Applied Nutrition): A key centre for food safety, CFSAN is responsible for FDA initiatives to reduce foodborne hazards, including setting standards and compliance plans for domestic and imported products, and providing technical assistance to localities and states.[128]

Centre for Veterinary Medicine (CVM): CVM regulates the manufacture and distribution of food and drug additives for animals, including those from which human foods are gathered, as well as drugs and additives for companion animals.[129]

USDA (US Department of Agriculture): Founded in 1862, the USDA's traditional functions of promoting and fostering American livestock and agriculture have expanded. USDA issues dietary guidelines for Americans, an effort that began in 1894 and was mandated by Congress in 1990. All guidelines regarding food programs, nutrition, and diet are issued by the USDA. USDA's food and nutrition assistance programs regulate nutrition aid programs, including the National School Breakfast Program, National School Lunch Program, and special supplemental programs for infants, women, and children (WIC). It also oversees emergency food assistance and adult care programs. USDA's Food and Nutrition Service (FNS) aims to reduce undernutrition risk. The FNS mission is "to provide a healthful diet, nutrition education, access to food to the children and people with low income in such a way that it should assist the public confidence and the American agriculture system". The USDA oversees

[126] Supra n 27
[127] Id
[128] Id
[129] Id

domestic and imported frozen foods, pizzas, poultry, and meat products, as well as egg products (dried, pasteurized, frozen, or liquid). The USDA released its first dietary instructions in 1894, focused on males, followed by the first food guide for children and the general public in 1916. Subsequent instructions during World War I focused on food availability. In 1943, USDA released seven basic food directions, followed by four in 1956. Research in the 1970s linked diet to chronic ailments, and a fifth food group was added in 1979. The first dietary instructions for Americans were issued in 1980, and the Food Pyramid, released in 1992, remained USDA's food guide until 2005. Other food guidelines in 2010 addressed the types of food to consume. In 2015, the Dietary Guidelines Advisory Committee, comprising experts in food science, policy, and nutrition, suggested science-based development of dietary guidelines to address nutrition and food-related problems, convey public health actions, and reduce preventable ailments. The USDA's mission is to provide leadership and guidance on food, natural resources, agriculture, nutrition, rural development, and related concerns through sound public policy, efficient management, and the best available science, and to enhance food safety by reducing foodborne illnesses from farm to table. The USDA has seven main areas of responsibility: 1. Natural resources and environment 2. Farm and Foreign Agricultural services 3. Rural Development 4. Food, Nutrition and Consumer services 5. Food Safety 6. Research, education and economics 7. Marketing and regulatory programs[130]

FSIS (Food Safety and Inspection Service): FSIS is responsible for inspecting poultry and meat in processing plants that trade across state lines. It empowers state inspectors for plants selling only within the state. Inspecting poultry and meat is integral to the national food safety system. FSIS operates under the Federal Meat Inspection Act, Egg Products Inspection Act, and Poultry Products Inspection Act, monitoring and inspecting all meat, egg, and poultry products sold within states and in foreign commerce. It also inspects imported products and ensures compliance with mandatory US food safety inspection and standards legislation. USDA has a network of federal inspectors in over 6,000 locations nationwide. FSIS mandates visual inspection of each animal carcass from slaughter plants (over 8 billion chickens and 125 million livestock)

[130] Supra n 2

and daily inspection of thousands of processing plants. FSIS cooperates with state inspection agencies for poultry and meat inspection in specific plants[131].

CDC (Centre for Disease Control and Prevention): Part of the Department of Health and Human Services, the CDC has historically been involved in tracing food poisoning cases and outbreaks. It leads federal efforts to investigate foodborne illnesses and outbreaks and monitor and collect data on them. FSMA requires the CDC to develop the capacity of local and state health departments to respond to foodborne illness and improve the integration and coordination of surveillance systems and laboratory networks. The CDC also develops a national strategy for food safety and supports the FDA in executing new hazard analysis, performance, prevention, and training activities required by law. Other functions include conducting research programs for protection against foodborne ailments and developing and advocating health policies for their prevention.[132]

United States Environmental Protection Agency (EPA): The EPA oversees Pesticide Safety and Drinking Water, playing a crucial role in the US food safety system. Its main works include publishing instructions on safer pesticide use, setting pesticide residue levels in food, assessing the safety of new pesticides, regulating wastes/toxic matters entering the food chain, and setting safe water standards.[133]

NMFS (National Marine Fisheries Service): NMFS monitors food obtained from seafood and fish products, playing an important food safety role. Through its seafood inspection program, NMFS certifies and inspects seafood processing plants, fishing vessels, and retail facilities for federal sanitation norms.[134]

TTB (Alcohol and Tobacco Tax and Trade Bureau): TTB of the US Treasury Department handles alcohol beverage labeling under the Federal Alcohol Administration Act, excluding beverages with less than 7 percent alcohol. It enforces laws controlling alcohol beverages and investigates alcohol contamination with FDA assistance on occasion.

CBP (U.S. Customs and Border Protection): This department oversees imported food items, working with federal regulatory agencies to ensure all imported food complies with US regulations and laws.

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[131] Supra n 27
[132] Id
[133] Supra n 12
[134] Id

DOJ (U.S. Department of Justice): The DOJ plays a vital role in food safety by seizing unsafe food items from the market through the U.S. Marshals Service, based on court orders. It also prosecutes individuals and companies suspected of violating food safety laws.[135]

FTC (Federal Trade Commission): The FTC is responsible for consumer protection by addressing anticompetitive, unfair, and deceptive business practices, including marketing communications. It oversees food safety advertising and prevents fraudulent, deceptive, and false advertising by enforcing consumer protection laws. The FDA regulates food labels, while the FTC is primarily responsible for media advertising of food. The FTC operates through the Federal Trade Commission Act, enacted in 1914. Section 18 of FTCA sets supplementary rule formation requirements, making it harder for the agency to formulate regulations. The FTC typically addresses frequent violators by bringing individual cases against them and has more power than the FDA to handle individual crimes. For instance, unlike the FDA, the FTC can require food manufacturers to provide documentation related to nutrition or health claims in advertising. The FTC can issue monetary civil fines but often resolves cases without fines. In 1983, the FTC issued a policy statement to address deceptive acts or practices, outlining three criteria for deception: a representation, omission, or practice likely to mislead a consumer; consumer action based on the misrepresentation; and the materiality of the representation, omission, or practice. This policy remains in effect.[136]

Country of origin labelling by Agricultural market service: The Agricultural Market Service of USDA controls (COOL) Country of Origin Labelling, required under the Farm Bills of 2002 and 2008 for honey, peanuts, pecans, vegetables, fruits, chicken, goat, lamb, beef, pork, shellfish, and other fish. COOL mandates stating on the food label where an animal was born, raised, and slaughtered.

3.7 Different Food Safety Legislations at US

Food safety agencies at all levels operate within a legal framework formed by their legislative bodies, underpinned by state and federal constitutions, and interpreted by courts. This framework generally supports cooperation between local, state, and federal authorities. Food safety is a public health requirement under the state's power according to the US Constitution, making state governments responsible and empowered to

[135] Id
[136] Supra n 34

protect food supply safety within their borders. States can enforce and create their own food safety standards, even if more rigid than federal standards. The federal government has broad power under the US Constitution to protect the general welfare and regulate interstate commerce affecting food safety. Consequently, the US Congress has enacted various laws supporting the food safety programs of USDA, CDC, FDA, and other agencies[137]. Most US states have adopted statutes based on or modeled after federal food safety legislation, leading to consistent scientific food safety standards across state and federal governments and among states. The food safety system is primarily administered by the FDA and USDA, guided by specific legislations. The FDA mainly operates through the Food Drug and Cosmetic Act 1938 (FDCA), while the USDA is directed by the Federal Meat Inspection Act (FMIA), Poultry Meat Inspection Act (PPIA), and Egg Products Inspection Act (EPIA). Food safety legislation has evolved based on specific policy needs.

(FDCA) Food Drug and Cosmetic Act: Enacted to address the shortcomings of the 1906 Act, the FDCA is a comprehensive piece of legislation controlling food safety standards. This federal law, drafted by Congress in 1938, is the main food law in the US, authorizing the FDA to conduct factory inspections, set food standards, and oversee the safety of food, drugs, and cosmetics. It is codified in the US Code, with Chapter 4 related to food, covering registration facilities, laboratory requirements, inspection priorities, and food safety and quality. The FDCA ensures food supply quality and safety by prohibiting misbranding and adulteration. Over time, the FDA has developed regulations based on the FDCA and other laws, often through a "notice and comment rulemaking" process allowing public input before final regulations are issued. The FDA ensures FDCA compliance through inspections of facilities where food is packed, held, transported, processed, and manufactured, including warehouses and factories. The Act has been amended several times, notably by the Bioterrorism Act and the Food Safety Modernization Act. President Barack Obama signed the FSMA (Food Safety Modernization Act) into law, the most significant revision of US food law since the FDCA replaced the 1906 Act. This law is historic in its breadth and depth of coverage.

The Food Code: The FDA publishes the Food Code as guidance to safeguard public health and provide consumers with safe, honestly presented, and unadulterated food. The Code establishes standards and definitions for management, personnel, food

[137] Id

equipment, facilities, and operations. It serves as a model for all government levels to regulate the food service and retail segments of the industry based on sound technical, scientific, and legal principles. Tribal, state, local, and federal regulators use the FDA Food Code as a model to maintain consistency with national food regulatory policy and to update or develop their own food safety rules. The FDA also collaborates with FSIS and CDC periodically.

(FMIA) Federal Meat Inspection Act, 1906: Passed by the US Congress to prevent the sale of adulterated or misbranded meat and meat products and ensure sanitary slaughtering and processing conditions. Major requirements include mandatory inspection of all cattle, sheep, swine, goats, and horses before and after slaughter, mandatory sanitary conditions in slaughtering and processing establishments, preventing the entry of adulterated or misbranded meat products into commerce, and mandatory accurate labeling. The Act does not cover animals not listed, such as buffalo and venison. The Wholesome Meat Act, 1967 made substantial amendments to the FMIA.

EPIA (Egg products inspection Act): Imposes specific inspection requirements for shell eggs and egg products. It prohibits the distribution of adulterated or misbranded egg products, requires pasteurization of liquid, frozen, and dried egg products, and mandates inspection of egg processing plants. The USDA's Food Safety and Inspection Service (FSIS) administers the EPIA. FSIS regulations define domesticated birds as guinea fowl, geese, ducks, turkeys, and chickens, with ratites added in 2001. FSIS inspects all poultry products sold in interstate commerce and imported products to ensure they meet US food safety standards.

Bioterrorism Act: The Public Security and Bioterrorism Preparedness and Response Act of 2002 highlighted the need to enhance the security of the US food supply following the events of September 11, 2001. It obliges all domestic and foreign facilities that hold, pack, process, or manufacture food for human consumption to register with the FDA. In collaboration with US Customs and Border Protection (CBP), the Act includes provisions to improve food safety and grants new authority to protect the food supply against threats and terrorist acts. CBP officials are trained to conduct cargo and other inspections under the BTA and have the power to hold suspicious shipments for sampling and further examination.

Food Labeling: Food labeling is generally required for most prepared foods like drinks, desserts, snacks, canned foods, frozen foods, cereals, and breads, but not always for raw produce. The FDA and USDA have specific regulations regarding mandatory labeling information, including the name of the food, ingredient list, net quantity, name and address of the manufacturer, packer, or distributor, and nutrition information. This area of law is evolving to reflect advancements in nutritional science and concerns about cardiovascular disease, obesity, health, and diet. The nutrition facts panel was introduced in the US 20 years prior to assist consumers in making informed choices. In 2014, the FDA proposed changes to the nutrition facts panel, including modifications to required nutrients, updated serving sizes reflecting current eating habits, new labeling requirements for certain pack sizes, and a revised design to highlight major calories. These changes would affect all packaged food except processed egg products, poultry, and meat, which are regulated by the USDA's FSIS. Legislative requirements apply to both domestically and foreign-produced foods. However, significant differences exist between EU and US laws in areas like mandatory information, food name, conditions of use, special storage requirements, size, and nutrition declaration, making it currently impossible to have a single label compliant in both markets.

FSMA (Food Safety Modernization Act): Signed into law on January 4, 2011, FSMA represents a major overhaul of food safety legislation in over 70 years. It aims to ensure the safety of the US food supply by shifting the focus of federal regulators from responding to contamination to preventing it. This legislation primarily affects FDA activities, granting it new inspection and enforcement authorities, rather than the USDA. The law affirms that food safety is a shared responsibility among US tribal, territorial, local, state, and foreign food safety agencies, requiring further unification of the food control system through stakeholder participation. FSMA's strategy emphasizes that the food industry bears the primary responsibility for producing safe food and calls for a redefined role for both private and public sectors in food safety through public-private cooperation, government efforts in food safety, integration, and regulatory oversight. The Act calls for the execution of six implementation teams to cover major areas: studies, fees report, state/federal integration inspection, compliance, and preventive standards. FSMA's planned implementation process includes public input on proposed regulations, rulemaking, and notice and comment. Significant efforts were made to inform stakeholders and the food industry about the rules during FSMA's development. As per FSMA requirements, the CDC designated state health departments

in Tennessee, Oregon, Minnesota, Florida, and Colorado as Integrated Food Safety Centers of Excellence to execute and discover best methods for assisting the CDC in responding to foodborne disease outbreaks. FSMA also mandates that the FDA inspect local food facilities, food safety records, and plans, and calls for the establishment of a food laboratory. FSMA supports the FDA's foodborne ailment monitoring system, requiring the FDA to report, analyze, and collect data promptly.

Rules Key Developments 2013-2015: Seven rules were established: four in 2013 and three in 2013-2014. These are: Sanitary transportation of human and animal food, Mitigation strategies to protect food from deliberate adulteration, accredited third-party certification, Preventive Controls for Animal Feed, Foreign Supplier Verification Program, Preventive Controls for Human Food, and Produce Safety Standards. The FDA has taken steps to ensure successful execution of risk analysis, evaluation, new import food safety systems, education, technical assistance, technical staffing, modernization, and inspection. According to the Congressional Budget Office, a funding gap exists between the FDA's current food safety resources and the level needed to implement FSMA.

Recent developments in administering Food Safety**:** A bill called "The Safe Food Act" was introduced on January 28, 2015, proposing a single independent federal food safety agency. This agency would lead an integrated approach to food safety, research, ensuring food facilities are responsible for safe food production, and regulating food safety and related labelling, aiming to consolidate disparate agencies with numerous inspections and labelling requirements into one body. Although this concept has been proposed several times since 2007, the US Congress has not yet acted on the proposal, and the impact of merging fifteen different food safety agencies is unclear. Despite legislative efforts and high-profile cases, foodborne illness remains a significant issue. The CDC estimates that roughly 48 million people get sick, 3,000 die, and 128,000 are hospitalized annually in the US due to foodborne illnesses caused by unspecified agents and pathogens. Approximately 31 of the most important known agents of foodborne diseases are consumed in the United States, with evidence linking food vehicles to human cases in 839 outbreaks[138].

[138] Amrita Rangasami, The Right to Food 2(2018), 9 Journal of the National Human Rights Commission. 75, (2010)

3.8 Contributing Trends to Food Safety Challenges at USA

Three main trends contribute to food safety challenges: increased population susceptibility due to changing demographics (aging population) and increased consumption of minimally processed or raw foods. Another factor is the rise in imported foods, estimated at 15% of the US food supply, including 80% of seafood and 60% of fresh fruits.[139]

3.9 Approach to Prevent Food Borne Illness at USA

Previous reports suggest improving the food supply chain by developing food safety performance measures, enhancing integration, reducing contamination, and improving produce safety. The FSIS Strategic Plan for 2011-2016 includes result-oriented performance measures, estimating that processed egg products, poultry, and meat contribute to foodborne illness. An annual performance plan outlines activities and expected results for each year. The Salmonella Action Plan of 2015 is a high-focus area with the goal of reducing foodborne diseases. Individual agencies publish performance plans and strategies for their food safety responsibilities. A 2014 Government Accountability Office report noted that its 2011 recommendation for a government performance plan had not been implemented. Recommendations have been made to establish a centralized board-based collaboration, mandated by statute, to ensure leadership and collaboration across all food safety agencies.[140]

3.10 Issues which can be deliberated upon with the US Competent Authorities on Food Safety

Foodborne illness and incidents: The lack of overall improvement in foodborne illness events due to food pathogens and the increase in multi-state outbreaks, failing to meet Healthy People 2020 targets, necessitate discussion on inspection steps and further actions. [141]

Food Safety Modernization Act**:** Potential information exchange on laboratory subjects, companies, and foodborne illness under FSMA, barriers to information sharing affecting system effectiveness, support for small businesses under FSMA, and the implications of FSMA along with FDA preparations, and the government accountability

[139] Id
[140] Id
[141] Id

office and the proposed single independent food safety agency by the Safe Food Act bill are all areas for deliberation.[142]

3.11 Points of Comparison of Food Safety Laws in India and United States of America

Comparative pesticide residue status in food of India and the U.S: India faces a rising problem of pesticide residues in food, with the highest levels globally, particularly in milk and vegetables, despite lower consumption compared to the US, Japan, and Europe. Vegetables and fruits in India have been found to contain various pesticides, including BHC and DDT, largely due to infrequent sampling by enforcement staff.[143]

Difference between food safety labels in India versus the United States of America: Food labels provide information about the nutritional value of consumable food items to assist the public in making informed shopping decisions and meeting nutritional needs. In India, the Food Safety and Standards Authority of India (FSSAI) under the Food Safety and Standards Regulations mandates food labelling and packaging requirements, ordering manufacturers and producers to comply with Indian food laws. Labelling is a top priority, requiring disclosure of necessary information such as origin, usage instructions, production and expiry dates, vegetarian status, nutritional values, additives, ingredients, food name, and whether it's local or foreign, in Hindi or English. The US, through the FDA, regulates food industries and the market, providing requirements for nutritional information, label placement, and content.[144]

Comparison on the basis of street food vendors' attitude and behaviour**:** A 2017 study in Delhi and Hyderabad found low compliance with food safety requirements among street food vendors post the introduction of food safety and standards rules. A survey of 200 vendors showed that only about one-third had proper registration and most did not follow basic norms like access to tap water, aprons, refrigerators, and soap. Higher income areas with more educated vendors showed better compliance. While India's food safety standards are comparable to developed nations like America, actual implementation is not adequately assured, necessitating knowledge exchange between vendors and consumers[145].

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[142] Id

[143] S.N. Mahindru, Food Contaminants Origin, Propagation & Analysis 84, 85 (2015).

[144] The Differences Between Food Labels in India Versus the United States | India.com

[145] springer, Driving factors of food safety standards in India: learning from street vendors behavior and attitude Driving factors of food safety standards in India: learning from street-food vendors' behaviour and attitude | Food Security

3.12 Food Safety Laws of Australia

The Victorian Public Food Act 1854 was Australia's first food regulation, empowering the Board of Health to inspect, seize, and destroy unwholesome food. After federation, states retained control over food safety, initially focusing on the sale and manufacture of food. Non-uniformity among state laws hampered interstate trade, leading to food-related conferences between 1910 and 1927. The NHMRC (National Health and Medical Research Council) was formed in 1936 to guide public health issues, including food. In 1952, NHMRC advocated for national uniformity in drug and food regulations, leading to the creation of the Food Standards Committee to recommend and adopt food standards for the states. In 1989, responsibility for food standards was transferred to the Bureau of Consumer Affairs within the Attorney General's Department[146].

Standards of Food Safety in Australia: Australia and New Zealand have a joint food standards body, FSANZ (Food Standards Australia New Zealand), established by the Food Standards Australia New Zealand Act 1991. FSANZ is an independent statutory agency within the Australian federal Department of Health's portfolio. FSANZ formulates standards for the regulation and use of minerals, vitamins, additives, colouring ingredients, and the composition of certain foods like beverages, meat, dairy, and genetically modified foods. FSANZ also regulates labelling requirements for packaged and unpackaged food, mandating information such as product description, name, advisory statements, warnings, nutrition information, date of making, and usage/storage directions. FSANZ manages the food recall system, removing unsafe products (allergens, harmful bacteria, etc.) from shelves and homes to ensure consumer safety[147].

Governance of Food Safety at Australia: Since February 1, 2020, the Department of Agriculture, Water and the Environment and the Minister for Agriculture, Drought and Emergency Management are responsible for food safety in Australia, working with industry and other government agencies to develop policies and standards. The food regulatory system of Australia and New Zealand includes both governments, with food standards developed under the Australia New Zealand Food Standards Code, administered by FSANZ and enforced by state and territorial governments. Compliance with the code is monitored by relevant agencies in each state and territory, while the

[146] Food safety in Australia - Wikipedia https://en.wikipedia.org/wiki/Food_safety_in_Australia

[147] Id

Department of Agriculture, Water and Environment handles sampling and inspection of imported food. The Biosecurity Act 2015 and the Imported Food Control Act 1992 require imported food to comply with Australia's biosecurity requirements, and the Food Inspection Scheme ensures that labelling on imported food meets its requirements[148].

3.13 Comparison between India/USA/Australia on Food Safety Systems

The chapter provides a comparison of the food safety systems of India, Australia, and the USA based on various aspects. The food safety frameworks of India, Australia, and the United States show notable differences across various dimensions, ranging from legislative origins to enforcement mechanisms. India's earliest law, the Prevention of Food Adulteration Act, 1954, has been repealed and replaced by the Food Safety and Standards Act, 2006, which consolidated multiple regulations under a single authority. In contrast, Australia's food safety regulation traces back to the Victorian Public Food Act of 1854, and is currently governed by the Food Standards Australia New Zealand (FSANZ) Act, 1991. The United States has an even earlier example in the Massachusetts Bread Law of 1646, with the modern framework led by the Food Safety Modernisation Act (FSMA) and several federal agencies.

Each country has different regulatory bodies overseeing food safety. India operates under a centralized agency, the Food Safety and Standards Authority of India (FSSAI). On the other hand, both Australia and the USA employ multiple agencies that regulate various aspects of food production, processing, and distribution. When it comes to laboratory infrastructure, India has comparatively fewer labs and less advanced equipment than Australia and the USA, both of which boast state-of-the-art facilities and better technological resources. This gap is further widened by the limited number of skilled and qualified personnel in India's food safety system, whereas Australia and the USA prioritise recruiting highly qualified professionals with the necessary technical expertise.

Public awareness of food-related issues is also relatively low in India, while in Australia and the USA, widespread educational campaigns and transparency mechanisms ensure higher levels of consumer knowledge and engagement. Similarly, training programs for food safety personnel are more frequent and comprehensive in Australia and the USA

[148] Id

compared to the limited training infrastructure available in India. Licensing procedures also differ significantly; India's licensing system is relatively liberal and more accessible, while Australia and the USA enforce stricter licensing protocols to ensure compliance and accountability.

Punishments for food safety violations also vary in severity. While India primarily imposes fines and imprisonment for breaches, Australia and the USA have provisions for stringent penalties, including heavy fines and imprisonment, and in extreme cases—particularly when negligence results in death—even the possibility of capital punishment. Lastly, government efforts in promoting food safety, enhancing infrastructure, and implementing robust systems are more extensive and well-coordinated in Australia and the USA. In contrast, India's efforts, though ongoing, still lag behind and require greater investment, inter-agency coordination, and public-private collaboration to meet international standards.

3.14 Conclusion

The food safety laws of India, the United States, and Australia differ significantly in structure, enforcement, and effectiveness. India's early legislation, the Prevention of Food Adulteration Act, 1954, was eventually repealed for being outdated and inadequate in addressing modern food safety challenges. It was replaced by the Food Safety and Standards Act, 2006 (FSSA), which consolidated various food-related laws under one umbrella. While the FSSA marked a significant advancement in India's regulatory framework, it still falls short in several key areas when compared to the more evolved systems in countries like the United States and Australia. In the U.S., the Food Safety Modernisation Act (FSMA), enforced by the FDA and USDA, emphasises preventive controls, scientific risk assessment, and traceability. Australia, through Food Standards Australia New Zealand (FSANZ), also employs a science-based, transparent approach aligned with international standards such as Codex Alimentarius.

Despite progress, India continues to experience systemic challenges, including weak enforcement, inadequate infrastructure, and a fragmented supply chain. To address these gaps and improve food safety in general, several key measures are recommended. Firstly, greater public awareness about food safety practices is essential. Strengthening laboratory infrastructure and ensuring the availability of proper testing facilities are also critical. A robust licensing system for food vendors and manufacturers must be implemented, coupled with enhanced training programs and skill development

initiatives. The penalties for food safety violations should be made more stringent to deter non-compliance. Establishing specialized fast-track courts for food-related offenses could help expedite legal redress. Furthermore, incorporating food safety and nutrition education into school curricula would foster awareness from a young age. Genetically modified (GM) foods should be distinctly labeled with a separate logo for consumer awareness. Collaborative efforts between food processing, agriculture, horticulture, and nutrition sectors should be encouraged to build an integrated food safety ecosystem. Public health campaigns promoting nutritional literacy and healthy food choices should be actively supported, including regulatory measures to make unhealthy food more expensive and healthy food more affordable, thus promoting the adoption of a healthier and safer diet across the population.[149]

[149] Bimal N. Patel et.al.,Food Security Law: Interdiciplinary Perspectives 107, 108 (2014).

CHAPTER IV: EFFECTIVENESS OF FOOD SAFETY LAWS

4.1 Introduction

Food safety is a foundational element of public health, national development, and social stability. In a country as vast and diverse as India, where culinary traditions, climatic conditions, and socioeconomic realities vary dramatically across regions, ensuring the safety and quality of food is a complex and ongoing challenge. With a population exceeding 1.4 billion, India's food system is one of the largest and most intricate in the world, encompassing everything from smallholder farms and street vendors to multinational food corporations and global supply chains. The effectiveness of food safety measures in such a context is not merely a regulatory concern but a matter of life, health, and economic well-being for millions.

The importance of food safety cannot be overstated. According to the World Health Organisation (WHO), unsafe food containing harmful bacteria, viruses, parasites, or chemical substances causes more than 200 diseases, ranging from diarrhoea to cancers. Globally, an estimated 600 million- almost 1 in 10 people- fall ill after eating contaminated food each year, resulting in 420,000 deaths (WHO, 2015). In India, the burden is particularly acute. The Food Safety and Standards Authority of India (FSSAI) estimates that over 100 million cases of foodborne illnesses occur annually, costing the economy billions of dollars and causing significant morbidity and mortality, especially among vulnerable populations such as children, the elderly, and those with weakened immune systems (FSSAI, 2023).[150]

The challenge of food safety in India is multifaceted. On one hand, the country boasts a rich agricultural tradition and a rapidly growing food processing industry. On the other hand, it faces persistent issues such as food adulteration, inadequate infrastructure, inconsistent enforcement of regulations, and low public awareness regarding safe food practices. The informal and unorganised food sector, which includes millions of small-scale producers, street vendors, and home-based businesses, further complicates the regulatory landscape. These factors, combined with rapid urbanisation, changing

[150]World Health Organization, WHO Estimates of the Global Burden of Foodborne Diseases (2015), https://www.who.int/publications/i/item/9789241565165.

dietary patterns, and the globalisation of food supply chains, have made food safety a critical public health issue.

Food safety is also intimately linked to nutrition and the broader determinants of health. Unsafe food can lead to acute illnesses such as food poisoning and diarrhoea, as well as chronic conditions like stunting, malnutrition, and micronutrient deficiencies. The interplay between food safety and nutrition is especially significant in India, where malnutrition remains a major public health challenge. According to the National Family Health Survey (NFHS-5), 35.5% of children under five are stunted, 32.1% are underweight, and 19.3% are wasted (NFHS-5, 2021). Contaminated or adulterated food can exacerbate these conditions, undermining efforts to improve child health and development.[151]

The economic implications of food safety are equally profound. Foodborne diseases impose substantial costs on the healthcare system, reduce productivity, and hinder economic growth. They also affect consumer confidence and can lead to trade restrictions, impacting India's position in the global food market. In recent years, several Indian food exports have faced bans and rejections in international markets due to safety violations, highlighting the need for robust standards and effective enforcement (CAG, 2023).

Recognizing these challenges, the Government of India has undertaken significant reforms to strengthen the food safety regulatory framework. The enactment of the Food Safety and Standards Act (FSSA) in 2006 marked a watershed moment, consolidating multiple food laws and establishing the FSSAI as the apex regulatory authority. The FSSAI's mandate includes setting science-based standards, regulating the manufacture, storage, distribution, sale, and import of food, and promoting public awareness about food safety. In addition, various initiatives such as the Eat Right India movement, food fortification programs, and technological innovations in surveillance and testing have been launched to address emerging risks and improve compliance.[152]

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[151]Food Safety and Standards Authority of India, Annual Report 2022–23, https://www.fssai.gov.in/upload/uploadfiles/files/Annual_Report_2022_23_13_12_2023.pdf.

[152] Ministry of Health & Family Welfare, Government of India, National Family Health Survey (NFHS-5) 2019–21, https://main.mohfw.gov.in/sites/default/files/NFHS-5_Phase-II_0.pdf.

Despite these advances, significant gaps remain. Enforcement is often inconsistent across states, laboratory infrastructure is inadequate in many regions, and public awareness about food safety remains low. The COVID-19 pandemic further underscored the vulnerabilities in India's food system, with disruptions in supply chains, changes in consumer behaviour, and increased risks of contamination. These challenges call for a renewed focus on strengthening institutional mechanisms, building capacity, leveraging technology, and fostering a culture of food safety at all levels.[153]

This chapter aims to provide a comprehensive analysis of the effectiveness of food safety and public health measures in India. It will examine the historical evolution of food safety regulation, the current legislative and institutional framework, the burden of foodborne diseases, key challenges, recent innovations, and the impact of food safety on international trade. Through a critical review of policies, data, and case studies, the project will identify gaps and opportunities for improvement, offering recommendations for a safer and healthier food system in India.

4.2 Historical Context of Food Safety in India

India's approach to food safety is deeply rooted in its history, shaped by cultural practices, colonial legacies, and evolving public health needs. Understanding this context is essential for appreciating the current regulatory framework and the ongoing challenges in ensuring safe and wholesome food for the population.

Talking about the Early Traditions and Indigenous Practices, Long before formal regulations, Indian society relied on traditional knowledge, religious norms, and community customs to maintain food purity and safety. Ancient texts such as the Ayurveda and Manusmriti emphasised the importance of food hygiene, storage, and preparation methods. Practices like boiling water, fermenting foods, and using natural preservatives (e.g., turmeric, salt, and spices) were common, reflecting an intuitive understanding of food safety and public health. [154]Many communities also developed localised systems for monitoring food quality, such as village councils and caste-based food preparation roles. These indigenous practices, while not codified in law, played a crucial role in safeguarding food from contamination and adulteration for centuries.

[153] Comptroller and Auditor General of India, Performance Audit on Implementation of Food Safety and Standards Act, 2006 (2023), https://cag.gov.in/en/audit-report/details/117851.

[154] See generally Charaka Samhita (ancient Indian Ayurvedic text); see also K.T. Achaya, Indian Food: A Historical Companion 34–36 (1994).

[155]Now moving on to the Colonial Era and the Introduction of Formal Regulation, the British colonial administration introduced the first formal food safety regulations in India. The Indian Penal Code of 1860 included provisions against food adulteration, making it a punishable offence. However, enforcement was limited, and the focus was primarily on protecting British interests and the urban elite.[156]With the expansion of urban centres and the rise of commercial food production, concerns about adulteration and contamination grew. The Bengal Food Adulteration Act of 1919 was one of the earliest attempts to address these issues at a provincial level. Similar laws were enacted in other regions, but the lack of a unified national framework led to inconsistencies and gaps in enforcement.[157]

The Post-Independence Developments. After independence in 1947, India faced significant challenges in public health, nutrition, and food security. The rapid growth of cities, industrialization, and changes in food production and distribution systems heightened the risk of foodborne illnesses and adulteration. In response, the Government of India enacted the Prevention of Food Adulteration Act (PFA), 1954, a landmark law aimed at protecting consumers from unsafe and adulterated food.[158]

The PFA established standards for a wide range of food products, prescribed penalties for violations, and created mechanisms for sampling and testing. It was supplemented by several sector-specific orders, such as the Fruit Products Order (1955), Meat Food Products Order (1973), and Milk and Milk Products Order (1992), each addressing unique challenges in their respective domains.[159]Despite these efforts, the multiplicity of laws and regulatory bodies led to overlapping jurisdictions, bureaucratic delays, and confusion among food business operators. The enforcement machinery was often under-resourced, and the penalties for violations were not always stringent enough to deter malpractice.[160]

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[155] Id

[156] INDIAN Penal Code, No. 45 of 1860, § 272–273 (India).

[157] Bengal Food Adulteration Act, 1919 (Bengal Act VI of 1919).

[158] Prevention of Food Adulteration Act, No. 37 of 1954, § 2 (India).

[159] Prevention of Products Order, 1955 (India); Meat Food Products Order, 1973 (India); Milk and Milk Products Order, 1992 (India).

[160] Comptroller and Auditor General of India, Performance Audit on Implementation of Food Safety and Standards Act, 2006, at 2–5 (2023), https://cag.gov.in/en/audit-report/details/117851

4.3 Legislative Framework and Regulatory Bodies

India's legislative infrastructure for food safety is the result of a long evolution, shaped by the country's socio-economic needs, technological advancements, and international obligations. The present framework is designed to address the challenges of a rapidly growing population, increasing urbanisation, and the globalisation of food supply chains. This section provides a comprehensive exploration of the principal laws, regulatory authorities, their functions, and the interplay between national and state-level agencies.

The journey toward a unified food safety law began with the Prevention of Food Adulteration Act, 1954 (PFA), which was India's first major attempt to regulate food quality and safety at a national level. The PFA defined food adulteration, prescribed standards, and set penalties for violations. However, as the food industry diversified and became more complex, the PFA and its associated rules became insufficient to address new challenges such as food additives, packaging, and imported foods.[161]Over the years, numerous sector-specific orders were enacted, including the Fruit Products Order, 1955, Meat Food Products Order, 1973, and Milk and Milk Products Order, 1992. Each targeted specific food sectors, but the proliferation of laws led to overlapping jurisdictions and regulatory confusion.[162]

Recognizing the need for a comprehensive, science-based, and harmonized approach, the Indian government enacted the Food Safety and Standards Act, 2006 (FSSA). The FSSA repealed and replaced the PFA and other sectoral laws, consolidating food regulation under a single umbrella. The Act's objectives are to Establish science-based standards for food, to Regulate the manufacture, storage, distribution, sale, and import of food and to Ensure the availability of safe and wholesome food for human consumption.[163]

The FSSA introduced several innovations like the Mandatory Licensing and Registration that is all food business operators (FBOs), from street vendors to large manufacturers, must register or obtain licenses, ensuring traceability and accountability next one involves a Risk-Based Approach in this phase the Act shifts from a purely punitive model to a preventive, risk-based system, emphasizing hazard analysis and

[161] Prevention of Food Adulteration Act, No. 37 of 1954 (India).
[162] Fruit Products Order, 1955 (India); Meat Food Products Order, 1973 (India); Milk and Milk Products Order, 1992 (India).
[163] Food Safety and Standards Act, No. 34 of 2006, Statement of Objects and Reasons (India).

critical control points (HACCP).The FSSA also sets Comprehensive Standards, it provides for the establishment of standards for food additives, contaminants, toxins, pesticide residues, packaging, and labelling and also for Consumer Empowerment the act was embedded with provisions for consumer grievance redressal and public participation in standard-setting.[164]

The FSSA established the Food Safety and Standards Authority of India (FSSAI) as the apex regulatory body. The FSSAI's functions include, Standard Setting FSSAI develops and notifies food standards, drawing on scientific panels and expert committees. It includes Licensing and Registration, Surveillance and Monitoring, Laboratory Network, Enforcement, Public Awareness[165]

The FSSAI operates under the Ministry of Health and Family Welfare and is supported by a Central Advisory Committee, 21 scientific panels, and a network of state food safety authorities.[166]

While the FSSA is the principal law, several other statutes intersect with food safety act like Essential Commodities Act, 1955 allows the government to control the production, supply, and distribution of essential food items, especially during shortages or emergencies. The Consumer Protection Act, 2019 empowers consumers to seek redressal for unsafe or substandard food products and unfair trade practices. The Legal Metrology Act, 2009 regulates weights, measures, and packaging to prevent deceptive practices. Environmental Protection Act, 1986 addresses environmental contaminants in food, such as pesticide residues and heavy metals.[167]

The implementation of food safety laws follows a federal structure at both central and state levels. At the Central Level, the FSSAI sets national standards, frames regulations, accredits laboratories, and coordinates policy implementation. It also manages issues related to food imports and exports. Whereas at the State Level The state Food Safety Commissioners, Designated Officers, and Food Safety Officers are responsible for on-ground enforcement, inspections, sampling, and prosecution.[168]

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[164] Id 92

[165] Food Safety and Standards Authority of India, Eat Right India, https://eatrightindia.gov.in/ (last visited May 18, 2025).

[166] Food Safety and Standards Act, No. 34 of 2006, 11–15 (India).

[167] Environmental Protection Act, No. 29 of 1986, § 3 (India).

[168] Food Safety and Standards Act, No. 34 of 2006, §§ 29–30 (India).

This dual structure is intended to ensure both uniformity and flexibility, allowing adaptation to local challenges. However, disparities in capacity, resources, and enforcement between states remain a concern.

4.4 Institutional Mechanisms and Enforcement

The effectiveness of India's food safety regime depends not only on robust legislation but also on the institutional architecture responsible for its implementation. The Food Safety and Standards Authority of India (FSSAI) operates at the apex, but enforcement is a shared responsibility involving central, state, and local agencies. This section examines the structure, functions, and challenges of these mechanisms, as well as the practical realities of enforcement across the country.

The Central and State Coordination the FSSAI, under the Ministry of Health and Family Welfare, is the central authority for food safety in India.[169] It is responsible for setting standards, framing regulations, and coordinating national policy. The FSSAI is supported by a Central Advisory Committee, scientific panels, and a network of accredited laboratories. At the state level, State Food Safety Authorities are established under Section 29 of the Food Safety and Standards Act, 2006. Each state appoints a Commissioner of Food Safety, who is responsible for the administration and enforcement of food safety laws within the state. Designated Officers and Food Safety Officers (FSOs) operate at district and local levels, conducting inspections, sampling, and investigations. This dual structure is intended to ensure both policy uniformity and flexibility to address region-specific challenges. However, coordination between central and state agencies is often hampered by disparities in resources, infrastructure, and administrative capacity.[170]

Knowing about the Food Safety Index and State Performance, To encourage improvements and foster healthy competition among states, the FSSAI publishes the State Food Safety Index (SFSI) annually. The SFSI evaluates states and union territories on five key parameters they are Human resources and institutional arrangements ,Compliance, Food testing infrastructure and surveillance, Training and

[169] Food Safety and Standards Act, No. 34 of 2006, § 4 (India).
[170] Comptroller and Auditor General of India, Performance Audit on Implementation of Food Safety and Standards Act, 2006, at 7–12 (2023), https://cag.gov.in/en/audit-report/details/117851.

capacity building, Consumer empowerment[171]States such as Kerala, Tamil Nadu, Gujarat, and Maharashtra have consistently ranked high due to better institutional arrangements, investment in laboratories, and proactive enforcement. However, many states, particularly in the north-eastern and central regions, lag behind due to inadequate staffing, poor infrastructure, and limited awareness.[172] Despite this network, significant gaps remain. Many state laboratories lack modern equipment, trained personnel, and accreditation from the National Accreditation Board for Testing and Calibration Laboratories (NABL). According to a 2023 audit, only about 60% of state labs were NABL-accredited, and several states had no functional labs at all.[173] This undermines the reliability of testing and the credibility of enforcement actions.

Despite these provisions, enforcement remains inconsistent. A 2023 performance audit by the Comptroller and Auditor General of India (CAG) found that while the number of food samples tested increased by 50% over five years, cases of food adulteration surged by 122%, and criminal proceedings rose by only 8%. The conviction rate stood at 45%, indicating challenges in prosecution and follow-through. Recognizing the need for skilled personnel, FSSAI conducts regular training programs for FSOs, Designated Officers, laboratory staff, and food business operators. Initiatives such as the Food Safety Training and Certification (FoSTaC) program aim to build capacity at all levels, from street vendors to large manufacturers.[174]However, the scale of the challenge is immense. According to FSSAI data, India requires over 30,000 FSOs for effective enforcement, but as of 2023, fewer than 15,000 were in position.[175]High staff turnover, inadequate training, and limited career incentives further exacerbate the problem.

4.5 Foodborne Diseases and Public Health Impact

Foodborne diseases represent a significant and persistent public health challenge in India. The scale of the problem is magnified by the country's vast population, diverse food habits, and the prevalence of both traditional and modern food supply chains. This section explores the epidemiology of foodborne illnesses in India, presents major case

[171] Food Safety and Standards Authority of India, State Food Safety Index 2023, https://www.fssai.gov.in/sfsi (last visited May 18, 2025).

[172] Id

[173] Comptroller and Auditor General of India, supra note 5, at 18–22.

[174] Food Safety and Standards Authority of India, Food Safety Training and Certification (FoSTaC), https://fostac.fssai.gov.in/ (last visited May 18, 2025).

[175] Food Safety and Standards Authority of India, Annual Report 2022–23, at 45, https://www.fssai.gov.in/upload/uploadfiles/files/Annual_Report_2022_23_13_12_2023.pdf

studies, and analyses the impact on vulnerable populations and the broader public health landscape.

Epidemiology of Foodborne Illnesses in India says that Foodborne diseases are caused by the ingestion of food contaminated with pathogenic bacteria, viruses, parasites, or chemical substances. Common pathogens include *Escherichia coli*, *Salmonella*, *Staphylococcus aureus*, *Vibrio cholerae*, and noroviruses. Chemical hazards such as pesticide residues, heavy metals, and mycotoxins also contribute to the disease burden.[176]

According to the World Health Organisation (WHO), foodborne diseases affect nearly 100 million people in India annually, resulting in tens of thousands of deaths.[177] The Food Safety and Standards Authority of India (FSSAI) estimates that the economic burden of foodborne illnesses in India exceeds $15 billion each year, factoring in healthcare costs, lost productivity, and premature mortality.

The Integrated Disease Surveillance Programme (IDSP), under the Ministry of Health and Family Welfare, is the primary system for monitoring foodborne disease outbreaks in India. Between 2009 and 2018, IDSP reported 2,688 outbreaks, resulting in over 153,000 illnesses and 572 deaths.[5] However, experts believe that these figures are significant underestimates due to underreporting, limited laboratory capacity, and the informal nature of much of India's food sector. Impact on Vulnerable Populations includes Childrens since they are particularly susceptible to foodborne diseases due to their developing immune systems and higher exposure through school meals and street foods. The WHO estimates that nearly 40% of the foodborne disease burden in South-East Asia is borne by children under five.[11] Repeated episodes of diarrhoea and food poisoning contribute to malnutrition, stunting, and impaired cognitive development.[178]Not only children but also Elderly and Immunocompromised Individuals, the elderly and people with weakened immune systems (such as those with HIV/AIDS, cancer, or chronic diseases) are at higher risk of severe outcomes from

[176] World Health Organisation, WHO Estimates of the Global Burden of Foodborne Diseases 11–12 (2015), https://www.who.int/publications/i/item/9789241565165.

[177] Id. At 64-67

[178] National Family Health Survey (NFHS-5), 2019–21, Ministry of Health & Family Welfare, Government of India, at 45–47, https://main.mohfw.gov.in/sites/default/files/NFHS-5_Phase-II_0.pdf.

foodborne infections. [179]Outbreaks in old-age homes and hospitals have highlighted the need for stringent food safety protocols in institutional settings. Also the people in Urban slums and rural areas often lack access to clean water, sanitation, and safe food storage facilities. Street food vendors, who provide affordable meals to millions, frequently operate with minimal oversight, increasing the risk of contamination.

4.6 Key Challenges in Food Safety

India's food safety landscape, despite its comprehensive regulatory framework, continues to face formidable challenges that undermine the effectiveness of its public health protections. Food adulteration remains a pervasive problem, with studies revealing that nearly 28% of food samples tested nationwide are non-compliant, particularly in staples like milk, oils, and spices.[180]Adulterants range from innocuous substances such as water and starch to hazardous chemicals like urea, formalin, and pesticides, posing acute and chronic health risks to consumers.[181] High-profile incidents, including the tragic deaths of children in Bihar due to pesticide-contaminated oil, have highlighted the potentially fatal consequences of adulteration and the urgent need for robust enforcement. Unfortunately, the conviction rate for food adulteration cases remains low, and many offenders receive only minimal penalties, a situation exacerbated by corruption, lack of accountability, and procedural delays within the enforcement machinery.[182]

Resource constraints further weaken enforcement efforts. India requires over 30,000 Food Safety Officers for adequate coverage, but less than half of these positions are filled, resulting in insufficient inspections and oversight. Laboratory infrastructure is also inadequate, with only about 60% of state labs accredited by the National Accreditation Board for Testing and Calibration Laboratories (NABL) and several states lacking functional laboratories altogether, which diminishes the reliability of food

[179] World Family Health Survey (NFHS-5), 2019–21, Ministry of Health & Family Welfare, Government of India, at 45–47, https://main.mohfw.gov.in/sites/default/files/NFHS-5_Phase-II_0.pdf.

[180] Food Safety and Standards Authority of India, Annual Report 2018–19, at 28, https://www.fssai.gov.in/upload/uploadfiles/files/Annual_Report_2018_19.pdf.

[181] Id at 29–31.

[182] Comptroller and Auditor General of India, Performance Audit on Implementation of Food Safety and Standards Act, 2006, at 27–31 (2023), https://cag.gov.in/en/audit-report/details/117851.

testing and undermines the credibility of enforcement actions.[183] The informal and unorganized sector, comprising millions of small-scale producers and vendors, is particularly difficult to monitor, and many operate outside the regulatory net due to the sheer scale and diversity of the Indian food system.[184]

Infrastructural limitations, especially in cold chain and storage, further compromise food safety. Perishable foods such as dairy, meat, and fruits are often exposed to spoilage and contamination due to poor cold chain management and unhygienic handling during transportation and storage. The National Centre for Cold-chain Development estimates a shortfall of over 35 million metric tons in cold storage capacity in India, a gap that is especially pronounced in rural and remote areas.

Public awareness about food safety is also limited. Many consumers do not practice basic food safety measures, such as checking expiry dates or storing food properly, and are often unaware of the risks associated with consuming street foods or products prepared in unsanitary conditions.[185] Similarly, food handlers, particularly in the informal sector, frequently lack access to formal training in hygiene and safe food practices, despite the efforts of programs like the Food Safety Training and Certification (FoSTaC) initiative.[186]

Socioeconomic and environmental factors compound these challenges. In many rural and urban poor areas, lack of access to clean water, sanitation, and proper storage facilities increases the risk of food contamination.[187]Unsafe agricultural practices, such as the overuse of pesticides, fertilisers, and antibiotics, lead to chemical residues in food, while industrial pollution and unsafe waste disposal contaminate food at the source, especially in regions near factories or mining operations.[188]

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[183] Food Safety and Standards Authority of India, Annual Report 2022–23, at 45, https://www.fssai.gov.in/upload/uploadfiles/files/Annual_Report_2022_23_13_12_2023.pdf.

[184] Food Safety and Standards Authority of India, Annual Report 2022–23, at 51–53.

[185] Food Safety and Standards Authority of India, Eat Right India, https://eatrightindia.gov.in/ (last visited May 18, 2025).

[186] Food Safety and Standards Authority of India, Food Safety Training and Certification (FoSTaC), https://fostac.fssai.gov.in/ (last visited May 18, 2025).

[187] National Family Health Survey (NFHS-5), 2019–21, Ministry of Health & Family Welfare, Government of India, at 45–47, https://main.mohfw.gov.in/sites/default/files/NFHS-5_Phase-II_0.pdf.

[188] Central Pollution Control Board, Annual Report 2022–23, at 32–34, https://cpcb.nic.in/uploads/annualreports/Annual_Report_2022-23.pdf.

The regulatory environment, although unified under the Food Safety and Standards Act, 2006, can still be complex for food business operators, especially small and medium enterprises that struggle to meet compliance costs and navigate documentation requirements.[14] The informal sector, which provides affordable food to a large segment of the population, remains largely outside the purview of regulation and is difficult to integrate into formal food safety initiatives.[15]

Emerging risks further complicate the landscape. The rapid growth of processed and packaged foods brings concerns about non-permitted additives, misleading labelling, and the presence of trans fats.[189]The misuse of antibiotics in animal husbandry contributes to antimicrobial resistance, posing a growing threat to food safety and public health.[190]Additionally, climate change is altering food production, storage, and distribution patterns, potentially increasing the incidence of foodborne pathogens and mycotoxins.[191]

In summary, India's food safety challenges are deeply rooted in its socio-economic fabric and the complexity of its food system. Overcoming these obstacles requires not only regulatory reform and capacity building but also significant investment in infrastructure, public education, and inclusive strategies that bring the informal sector into the fold. Only through a coordinated and sustained effort can India ensure safe and nutritious food for all its citizens.

4.7. Innovations and Recent Initiatives

India has made significant strides in food safety through a blend of regulatory reforms, technological advancements, and public engagement. The Food Safety and Standards Authority of India (FSSAI) has spearheaded a series of initiatives that address both systemic and emerging challenges in the nation's food ecosystem.

One of the most transformative efforts is the Eat Right India Movement, launched in 2018. This nationwide campaign integrates regulatory action with consumer awareness and industry participation. Built on the pillars of "Eat Safe," "Eat Healthy," and "Eat

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[189] Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011 (India).

[190] World Health Organisation, Antimicrobial Resistance: Global Report on Surveillance (2014), https://www.who.int/publications/i/item/9789241564748.

[191] Intergovernmental Panel on Climate Change, Climate Change and Food Safety (2022), https://www.ipcc.ch/srccl/chapter/chapter-5/.

Sustainably," the movement seeks to shift both supply and demand toward safer, healthier, and more sustainable food choices.[192] Notable sub-initiatives includes initiatives like **"**Aaj Se Thoda Kam**"** which encourages reduction in salt, sugar, and fat intake, targeting both consumers and food manufacturers[193]also initiatives like eat "Right Melas", Clean Street Food Hub Project all were some of the notable initiatives laid down to improve food quality.[194]

To strengthen regulatory compliance and surveillance, FSSAI has embraced technological innovations like the Food Safety Mitra (FSM) Portal, which digitises licensing, inspections, and compliance tracking for over 3 million food businesses, improving transparency and efficiency.[195]The Blockchain pilots in dairy and spice supply chains enhance traceability, allowing consumers to verify sourcing and safety data via QR codes.[196]AI-driven rapid testing is being scaled up through the Detect Adulteration with Rapid Test (DART) initiative, which has distributed 10 million test kits to schools and households.[197]and also Mobile food testing labs are now operational in 25 states, conducting over 500,000 on-site tests annually, especially in remote and underserved regions.

Food fortification is another pillar of recent progress. Under the Food Safety and Standards (Fortification of Foods) Regulations, 2018, the FSSAI has mandated the fortification of staples such as salt, edible oil, wheat flour, rice, and milk.[8] By 2023, 70% of packaged edible oil and 50% of milk sold in India were fortified, contributing to a measurable reduction in anaemia and micronutrient deficiencies in pilot regions.[198] The "+F" logo on fortified products and targeted awareness campaigns have improved

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[192] Food Safety and Standards Authority of India, *Eat Right India Movement*, https://eatrightindia.gov.in/ (last visited May 18, 2025).

[193] Id FSSAI, *Annual Report 2022–23* 12–15, https://www.fssai.gov.in/upload/uploadfiles/files/Annual_Report_2022_23_13_12_2023.pdf.

[194] FSSAI, *Clean Street Food Hub*, https://fssai.gov.in/csfh/ (last visited May 18, 2025).

[195] FSSAI, *Food Safety Mitra Portal*, https://fsm.fssai.gov.in/ (last visited May 18, 2025).

[196] NITI Aayog, *Blockchain in Food Supply Chains: Pilot Evaluation Report* 7–9 (2023), https://www.niti.gov.in/.

[197] FSSAI, *Detect Adulteration with Rapid Test (DART)*, https://dart.fssai.gov.in/ (last visited May 18, 2025).

[198] National Institute of Nutrition, *Impact Assessment of Food Fortification in India* 22–25 (2023), https://www.nin.res.in/

consumer acceptance, though smaller producers and rural areas still face barriers to adoption.[199]

Capacity building has also been prioritized. The Food Safety Training and Certification (FoSTaC) program has trained over 1.2 million food handlers, including street vendors, school cafeteria staff, and restaurant workers.[200] Partnerships with research institutions such as NIFTEM and ICAR have led to innovations in biofortified crops and the development of nano-sensors for pesticide detection.[201]

Recognizing the value of traditional food wisdom, the government has launched initiatives like **"**Vocal for Local" and the Millets Revival Project. These efforts promote indigenous food systems and traditional preservation methods, such as the cultivation of millets (ragi, jowar) that are naturally pest-resistant and require fewer chemical inputs. Community-led programs, such as Kerala's Safe Kitchen Initiative, train households in hygienic food preparation using local ingredients, reducing reliance on processed foods.[202]International collaboration has played a key role in raising standards. FSSAI's partnerships with the World Health Organisation (WHO), Food and Agriculture Organisation (FAO), and the World Bank's Global Food Safety Partnership have facilitated the adoption of Codex Alimentarius standards and supported infrastructure upgrades in 15 states.[203]

In summary, India's innovations in food safety reflect a holistic approach, combining regulatory rigour, technological disruption, and cultural relevance. While these initiatives have improved surveillance, compliance, and public trust, scaling them across India's vast and diverse food system remains an ongoing challenge.

4.8 Food Safety and International Trade

India's position as one of the world's largest producers and exporters of agricultural and food products makes food safety not just a domestic concern but a critical factor in international trade and economic diplomacy. The effectiveness of India's food safety

[199] Id at 30-32

[200] FSSAU *FoSTaC Training Statistics* (2023), https://fostac.fssai.gov.in/

[201] Indian Council of Agricultural Research, *Annual Report 2022–23* 55–57, https://www.icar.org.in/.

[202] Kerala Food Safety Department, *Safe Kitchen Initiative* (2022), https://fsd.kerala.gov.in/.

[203] World Bank, *Global Food Safety Partnership: India Case Study* 10–12 (2024), https://www.worldbank.org/.

regime directly influences its export competitiveness, market access, and reputation in the global marketplace.

India exports a diverse array of food products, including spices, tea, rice, seafood, fruits, vegetables, and processed foods, to over 200 countries.[204] However, the country has faced recurring challenges in meeting the stringent sanitary and phytosanitary (SPS) standards set by importing nations, particularly in the European Union, United States, Japan, and Gulf countries.[205]

Indian food exports have frequently faced rejections and recalls in international markets due to issues such as excessive pesticide residues, microbial contamination, the presence of heavy metals, and non-compliance with labelling standards. A notable example includes the European Union's temporary ban on Indian mangoes in 2014, which was imposed due to the detection of fruit fly contamination. Indian spices have also come under repeated scrutiny, with several alerts issued for the presence of Salmonella and aflatoxins, raising serious concerns about food safety practices. More recently, in 2023, multiple Indian spice brands were subjected to import bans in countries like Hong Kong and Singapore following the detection of ethylene oxide, a carcinogenic pesticide, highlighting the continued challenges India faces in maintaining the quality and safety of its food exports.[206] India has taken significant steps towards harmonising its food safety regulations with international standards, particularly through the efforts of the Food Safety and Standards Authority of India (FSSAI) in collaboration with the Ministry of Commerce. These efforts aim to align domestic food standards with the Codex Alimentarius guidelines and the requirements of the World Trade Organization's Sanitary and Phytosanitary (SPS) Agreement. India actively participates in various Codex committees and has adopted several Codex-based standards, especially concerning food additives, contaminants, and labelling practices. However, despite this progress, notable gaps persist in critical areas such as the establishment of maximum residue limits for pesticides, the regulation of antibiotic use

[204] Ministry of Commerce & Industry, Government of India, *Export of Agricultural Products from India* (2024), https://commerce.gov.in/.

[205] World Trade Organisation, *Sanitary and Phytosanitary Measures: India Trade Policy Review* (2023), https://www.wto.org/.

[206] Reuters *Hong Kong, Singapore Ban Indian Spice Brands Over Pesticide* (Apr. 2023), https://www.reuters.com/.

in aquaculture, and the implementation of robust traceability systems, which continue to challenge the country's ability to fully meet global food safety expectations.

Export certification and surveillance of Indian food products are primarily managed by agencies such as the Export Inspection Council (EIC) and the Marine Products Export Development Authority (MPEDA), which are responsible for ensuring that exports comply with the regulatory standards of importing countries. For high-risk commodities like seafood, meat, and dairy, pre-shipment inspection, rigorous laboratory testing, and certification are mandatory to verify safety and quality. Additionally, the Agricultural and Processed Food Products Export Development Authority (APEDA) plays a vital role in supporting exporters by providing training programs, infrastructure development grants, and valuable market intelligence to enhance export readiness and competitiveness in global markets.[207]

India has placed strong emphasis on capacity building and infrastructure development to strengthen its food safety and export systems. Significant efforts have been made to upgrade laboratory infrastructure across the country, with a focus on obtaining accreditations such as NABL and ISO/IEC 17025, ensuring that testing procedures for exports are reliable and internationally recognised. In addition, technological innovations like blockchain pilots and digital traceability systems are being introduced in key export sectors such as spices, tea, and seafood. These initiatives aim to enhance transparency, improve supply chain accountability, and meet the increasingly stringent requirements of global buyers.[208]

India continues to face several challenges and barriers in ensuring consistent compliance with international food safety standards. The country's fragmented supply chains and the dominance of small-scale producers make it difficult to implement uniform safety and quality measures. Many exporters, particularly small and medium enterprises (SMEs), struggle with the high costs and complexity associated with meeting international regulations and documentation requirements. Persistent issues such as the residual use of banned pesticides and antibiotics, along with inadequate cold chain infrastructure, frequently result in trade alerts and product rejections.

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[207] Agricultural and Processed Food Products Export Development Authority, *APEDA Export Promotion*, https://apeda.gov.in/.

[208] NITI Aayog, *Blockchain in Food Supply Chains: Pilot Evaluation Report* 12–15 (2023), https://www.niti.gov.in/.

These challenges are illustrated by several notable case studies. In 2023, the European Rapid Alert System for Food and Feed (RASFF) issued multiple alerts on Indian spice consignments due to the presence of aflatoxins and Salmonella, prompting temporary suspensions and increased regulatory scrutiny. Similarly, Indian seafood exports—especially shrimp—have faced consistent rejections in the United States and European Union because of antibiotic residues and lapses in hygiene. In response, the Marine Products Export Development Authority (MPEDA) has introduced stricter monitoring and traceability protocols at the farm level. Indian basmati rice exports to the EU have also been under tight surveillance for pesticide residues, but the implementation of residue-free certification programs and farmer training initiatives has led to a decline in rejection rates, showcasing a positive shift towards improved compliance.

India is actively strengthening international partnerships and charting future directions to enhance its food safety ecosystem and global trade presence. Collaboration with the World Bank's Global Food Safety Partnership and technical assistance from international bodies such as the FAO and WHO have played a crucial role in building national capacity and promoting the adoption of global best practices. To facilitate smoother trade relations, India is also pursuing bilateral agreements with key trading partners aimed at achieving mutual recognition of food safety standards and simplifying certification procedures. In parallel, the government is promoting the "Brand India" initiative as a symbol of quality and safety, with a special focus on certifying and marketing Geographical Indication (GI)-tagged products like Darjeeling tea and Alphonso mangoes. These efforts are intended to enhance the global reputation of Indian food products and boost their competitiveness in international markets.[209]

While India has made notable progress in harmonising its food safety standards with international norms and upgrading export infrastructure, persistent challenges in compliance, traceability, and supply chain management continue to affect its global trade performance. Sustained investment in laboratory capacity, digital traceability, farmer education, and regulatory enforcement is essential for India to maintain and expand its share in the global food market.

[209] World Bank, *Global Food Safety Partnership: India Case Study* 15–18 (2024), https://www.worldbank.org/.

4.9 Data, Trends, and Analysis

Understanding the effectiveness of food safety and public health measures in India requires a close examination of data-driven trends, regional disparities, and comparative analysis with global benchmarks. The following section synthesises key statistics, patterns, and insights from national and international sources.

National and Regional Trends, India's food safety landscape is marked by significant regional variation. States such as Kerala, Gujarat, Tamil Nadu, and Maharashtra consistently rank high on the State Food Safety Index (SFSI), reflecting better institutional arrangements, laboratory infrastructure, and compliance rates.[210] In contrast, several north-eastern and central states lag behind, often due to limited resources, inadequate staffing, and underdeveloped food testing facilities.[211]According to FSSAI's Annual Report 2022–23, over 2.4 lakh food samples were tested nationwide, with approximately 16% found non-compliant and 3% confirmed as adulterated. The conviction rate for food safety violations stands at about 45%, with wide variation between states, some achieving over 70% conviction, while others report less than 10%.[212]The number of registered food businesses has crossed 3 million, but experts estimate that the informal sector, which includes millions of street vendors and small retailers, remains largely unregistered and unregulated.

Foodborne diseases continue to exact a heavy toll on public health and the economy. The World Health Organisation estimates that India experiences over 100 million cases of foodborne illnesses annually, resulting in tens of thousands of deaths, especially among children under five.[213]The economic burden of foodborne diseases is estimated at over $15 billion per year, factoring in healthcare costs, lost productivity, and premature mortality.The World Bank's Safe Food Imperative report highlights that unsafe food costs low- and middle-income countries $110 billion annually in productivity losses and medical expenses, with India accounting for a significant

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[210] Food Safety and Standards Authority of India, *State Food Safety Index 2023*, https://www.fssai.gov.in/sfsi (last visited May 18, 2025).

[211] Id

[212] Comptroller and Auditor General of India, *Performance Audit on Implementation of Food Safety and Standards Act, 2006* 27–31 (2023), https://cag.gov.in/en/audit-report/details/117851.

[213] World Health Organisation, *WHO Estimates of the Global Burden of Foodborne Diseases* 64–67 (2015), https://www.who.int/publications/i/item/9789241565165.

share.[214]The number of food safety inspections and surveillance activities has increased by more than 60% over the past five years, reflecting FSSAI's push for proactive enforcement. However, laboratory capacity remains a bottleneck, with only about 60% of state labs accredited by NABL and several states lacking any functional food testing labs. Mobile food testing labs and rapid test kits have improved outreach, but the scale of testing is still insufficient given the size of the food sector.

India's food safety regulatory framework is broadly aligned with international standards, particularly those established by the Codex Alimentarius and the WTO's Sanitary and Phytosanitary (SPS) Agreement. However, despite these improvements, India continues to experience a higher frequency of export rejections and trade alerts compared to many peer nations. This is largely attributed to the fragmentation of supply chains and inconsistent compliance across various sectors. In the Global Food Security Index, India ranks in the mid-tier among emerging economies, with food safety and quality identified as areas that require further enhancement.[215]

Notable progress has been made through key initiatives. The Food Safety Training and Certification (FoSTaC) program has trained over 1.2 million food handlers, and more than 10 million rapid adulteration test kits have been distributed nationwide. Food fortification has also expanded significantly, with 70% of packaged edible oil and 50% of milk now fortified, although adoption among rural and small-scale producers remains a continuing challenge. Furthermore, digital systems for registration and licensing now cover over 3 million food businesses, strengthening traceability and improving overall accountability.[216]

Despite these advancements, several challenges persist, as reflected in national data. There is widespread underreporting of foodborne illnesses, particularly in rural and informal sectors, which hampers the development of targeted policy interventions. Additionally, significant resource disparities among states result in uneven enforcement of food safety regulations and variable levels of consumer protection. The vast and

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[214] World Bank, *The Safe Food Imperative: Accelerating Progress in Low- and Middle-Income Countries* 8 (2019), https://openknowledge.worldbank.org/entities/publication/2e2a7f3d-0b3e-5c7a-8f0e-0e8b4d7b4e9a.

[215] European Commission, *RASFF Portal: Notifications for India* (2023), https://webgate.ec.europa.eu/rasff-window/.

[216] National Institute of Nutrition, *Impact Assessment of Food Fortification in India* 22–25 (2023), https://www.nin.res.in/.

largely unregulated informal food sector poses another major obstacle, as the lack of registration and oversight undermines effective surveillance and risk management efforts. India's data on food safety and public health reveal both substantial progress and persistent gaps. While enforcement, training, and fortification initiatives have scaled up, regional disparities, underreporting, and informal sector challenges remain. Ongoing investments in laboratory capacity, digital surveillance, and public awareness are essential to ensure that food safety improvements are both broad-based and sustainable

4.10 Conclusion

India's journey toward effective food safety and public health is marked by significant progress, persistent challenges, and a growing recognition of the complex interplay between regulation, technology, public awareness, and global trade. The establishment of the Food Safety and Standards Act, 2006, and the creation of the Food Safety and Standards Authority of India (FSSAI) have provided a robust legislative and institutional foundation, unifying previously fragmented laws and setting science-based standards for the nation's vast and diverse food system. Through initiatives such as the Eat Right India Movement, food fortification mandates, and the adoption of digital surveillance and rapid testing technologies, India has demonstrated its commitment to modernising food safety governance and addressing both traditional and emerging risks.[217]

Despite these advances, the data reveal that enforcement remains uneven, with significant disparities in laboratory capacity, staffing, and compliance across states. Food adulteration, underreporting of foodborne illnesses, and the challenges posed by the informal sector continue to undermine public health outcomes, especially among vulnerable populations such as children, the elderly, and the urban and rural poor.[218] The economic burden of foodborne diseases and the reputational risks associated with export rejections further underscore the need for sustained investment in infrastructure, capacity building, and harmonisation with international standards.[219]

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[217] Food Safety and Standards Authority of India, *Eat Right India Movement*, https://eatrightindia.gov.in/ (last visited May 18, 2025); Food Safety and Standards (Fortification of Foods) Regulations, 2018, *Gazette of India*, pt. III, § 4 (Aug. 2, 2018).

[218] Food Safety and Standards Authority of India, *Annual Report 2022–23* 35–38.

[219] World Health Organization, *WHO Estimates of the Global Burden of Foodborne Diseases* 64–67 (2015), https://www.who.int/publications/i/item/9789241565165.

The path forward requires a multi-pronged, collaborative approach. Strengthening enforcement, simplifying compliance for small businesses, expanding public education, and leveraging technology are all critical. Integrating food safety with broader public health and nutrition programs, fostering multi-stakeholder partnerships, and ensuring the inclusion of the informal sector will be essential to achieving universal food safety.[220] India's experience also highlights the importance of adaptive policy-making, robust monitoring, and continuous learning from both domestic pilots and global best practices.

In conclusion, while India has made considerable strides in food safety, the journey is ongoing. The country's ability to ensure safe, nutritious, and accessible food for all will depend on its resolve to address persistent gaps, embrace innovation, and build a culture of food safety that permeates every level of society. With sustained political will, adequate funding, and the active engagement of government, industry, and civil society, India can not only safeguard the health of its citizens but also reinforce its position as a trusted player in the global food system.

[220] Ministry of Health & Family Welfare, Government of India, *Poshan Abhiyan* (2023), https://poshanabhiyaan.gov.in/; World Bank, *Global Food Safety Partnership: India Case Study* 10–12 (2024), https://www.worldbank.org/.

CHAPTER V: JUDICIAL APPROACH

5.1 Introduction

Food safety is considered part of the right to health under Article 21 of the Indian Constitution. Ensuring food safety requires every public institution to guarantee the nutritional and chemical safety of served food. Justice V.R. Krishna Iyer emphasized the need to regulate food commodity prices to end starvation, stating that "Real food safety is the have-not humanity's instrument of contentment"[221]. The Indian Supreme Court has consistently recognized the right to food as integral to the right to health, often directing Union and State governments to ensure complimentary food schemes.

Article 21 of the Indian Constitution, interpreted judicially, signifies the right to a life with human dignity, not mere survival[222]. In India, civic and judicial activism prevents the state from abridging this right due to resource constraints. Before 2001, Supreme Court judgments suggested food-related schemes, but these were not guaranteed obligations on the state to cover all needy people. However, the consistent interpretation of Article 21 has expanded the meaning of life and personal liberty beyond mere animal existence to include human dignity[223]. Article 24 relates directly to child nutrition and health[224]. Article 32 provides constitutional remedies for violations of fundamental rights[225]. Article 39(f) mandates the state to ensure children are given opportunities and facilities to develop healthily. Article 42, a Directive Principle (not directly enforceable), requires the state to make provisions for just and humane work conditions and maternity relief, with practical implications for health improvement and protection through government schemes like maternity leave and food during/after pregnancy[226]. Article 47 obliges the state to raise the level of nutrition and the standard of living and to improve public health. This article's implication for health and environmental

[221] Daya Devi & Simple Chabra, Food Security a Basic Human Right 4 Civil and Military Law Journal. 448(2014).

[222] M S Swaminathan, et.al., National Food Security Summit 2 (2004).

[223] Article 21, Indian Constitution provides: No person shall be deprived of his life or personal liberty except according to procedure established by law.

[224] Article 24, Indian Constitution provides: No person below the age of fourteen years shall be employed to work in any factory or mine or engaged in any other hazardous employment.

[225] Article 32, Indian Constitution provides: Right to move Supreme Court for the enforcement of fundamental rights.

[226] Article 42, Indian Constitution provides: The State shall make provision for securing just and humane conditions of work and for maternity relief.

improvement is clear, influencing government policies despite being a Directive Principle. Article 243 G, under Part IX of the Constitution, empowers Panchayats with necessary authority related to Eleventh Schedule matters, including social welfare, women, child, family health, sanitation, and safe drinking water[227]. Article 226 provides the right to move the High Court for the enforcement of fundamental rights[228].

5.2 Observations on Food Safety by various Judges & Jurist

Justice S.K. Kadar, in *Food Inspector, Palagaht Municipality vs Seetharam Rice and Oil Mills* (1974)[229], described the Prevention of Food Adulteration Act, 1954 (PFA) as crucial legislation to curb the "evil of sale, distribution and manufacture of adulterated articles of food," a "menace to the public health and welfare," especially given food scarcity and rising prices. Justice P. Narayana Pillai emphasised a rational approach, noting the increase in food production due to science and technology, but lamenting that suppliers often prioritise business interests over consumer health by selling adulterated food, creating a "hazardous" health situation. He viewed the PFA as a "win for the consumer" in the balance between business and consumer interests. Justice K. Bhaskaran observed that food adulteration had become a serious national problem, like an "epidemic," and societal survival depended on the "rigid and effective enforcement" of the PFA to arrest the "evil of adulteration mania" among antisocial elements.

5.3 Landmark Cases on Food Adulteration in India

In *Municipal Corporation of Delhi v. Bishan Dass[230] , a Food Inspector took a sample of chocolate ice cream from the appellant's stall, where the appellant admitted using vegetable ghee in its preparation. The Public Analyst found the sample adulterated. The trial court acquitted the company but sentenced two employees. The High Court acquitted one employee but sentenced the appellant. The Supreme Court, examining the Prevention of Food Adulteration Act, 1954 definitions of "Milk products," ultimately held that the prosecution failed to prove the chocolate ice cream sample exceeded prescribed limits for adulteration. Thus, the Supreme Court accepted the appellant's appeal, overturning the High Court's judgment and acquitting the appellant.

[227] M.C. Gupta, Health And Law, 35 (2002)
[228] Article 226, Indian Constitution provides: Right to move High Court for the enforcement of fundamental rights
[229] Harsh Mander, Ending Indifference: A Law to Exile Hunger , 11 Journal of the National Human Rights Commission. 41, (2012)
[230] Ibid.

In *Maneka Gandhi v. Union of India*, [231]the Supreme Court broadened the meaning of "Right to life" under Article 21 to include the right to live with human dignity, encompassing all aspects that make life meaningful and complete.

In *Municipal Corporation of Delhi v Shiv Shankar*[232], the respondent, licensed under the Fruit Products Order, 1955 (formulated under the Essential Commodities Act), was prosecuted under the PFA for selling contaminated vinegar. He argued that as a fruit product, prosecution required prior sanction under the Fruit Order. The trial court rejected this, but the High Court quashed proceedings. The High Court reasoned that the Fruit Order had overriding effect for fruit product manufacturers. However, the Supreme Court, on appeal, held that the plea of implied repeal of the PFA by the Fruit Order must fail, as both acts aimed to protect community health.

In *Raj Narain v. Addl. Disrtict and sessions judge Varanasi*[233], a dealer in edible oils was raided, and samples of soybean oil and mustard oil were taken. While soybean oil samples conformed to standards, mustard oil was found to contain a banned coal tar dye, leading to prosecution. The High Court observed that pure soybean oil is edible and only becomes an adulterant when mixed with other edible oils and that mere storage does not presume intent to adulterate.

In *Nathuram v. State*[234], a food inspector took a sample of mustard oil from the appellant, which the Public Analyst reported as contaminated with Argemone oil and exceeding defined chemical limits. Despite the Director CFL's report showing saponification value within limits, the Trial Court convicted the accused. However, the appellate court, noting the discrepancy and that the CFL report showed values within prescribed limits, held that contamination wasn't established and acquitted the appellant, reiterating that the PFA aims to protect public health regardless of purchaser awareness of adulteration.

In Peoples Union For Civil Liberties v. Union of India[235], the Supreme Court addressed food safety failures in Rajasthan where food rotted in government storage while people starved. The court emphasized that the right to life under Article 21

[231] AIR 1978 SC 597
[232]AIR 1971 SUPREME COURT 815
[233] 1981CRILJ1495
[234] 982, FAJ, 409; 1982(2), FAC 45.
[235] Writ Petition (civil) 196 of 2001

implies the right to food, decent environment, education, medical care, shelter, and water, encompassing a safe, decent living place with pure water, air, and sanitation.

In *Vincent v. Union of India*[236], the Supreme Court held that the right to live with human dignity includes the right to maintain and improve public health, which should be prioritized by the state, and that providing medical facilities is an important aspect of the Right to Life.

In *A.K. Roy v. State of Punjab*[237], a Food Inspector purchased a sample of Maggi noodles which was found to contain prohibited colouring matter. The Food Inspector filed a complaint against the merchant and manufacturer. The accused argued that the relevant rules empowered the state government, not the food inspector, to authorize prosecution. The Supreme Court interpreted Section 20(1) of the PFA, holding that it only empowers state authorities to initiate such matters and they cannot delegate this power to the Food Inspector, thus allowing the appeal and setting aside previous court orders.

In *Olga Tellis v. Bombay Municipal Corporation*[238], the Supreme Court ruled that the right to life under Article 21 includes the right to livelihood, as no one can survive without means of sustenance, and deprivation of livelihood is an easy way to deprive one of the right to life.

In *State of Maharashtra v. Kamalakar Govindji Barde*, the respondent was convicted for selling adulterated turmeric powder. The High Court set aside the conviction due to a lack of jurisdiction of the Public Analyst. However, the Supreme Court, referring to Section 8 of the PFA regarding Public Analysts, allowed the appeal and restored the Sessions Court's conviction.

In *T.V. Usman V. Food Inspector, Tellicherry Municipality, Tellicherry*[239], a vendor was prosecuted for selling pan supari containing saccharin. The trial court acquitted him because the Public Analyst's report was received after 45 days. The High Court sentenced him. The Supreme Court considered Rule 9(j) of the PFA rules, holding it directory, not mandatory, and upheld the High Court's sentence, stating that only when non-compliance wholly deprives a person of the right to challenge the report would there be just cause for complaint.

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[236] AIR 1987 SC 165
[237] AIR 1986 SC 2160: (1986) 4 SCC 326
[238] AIR 1986 SC 180
[239] AIR 1994 (SC) 1818: (1994) 1 SCC 754

In *The state (Union Territory, Chandigarh) v. Rajesh Kumar*[240], the Supreme Court addressed the jurisdiction of Food Inspectors, interpreting Section 20 of the PFA. The Court held that this section restricts prosecution without fulfilling specific conditions and does not allow further delegation of powers by authorized persons, except with written consent from the central or state government or the authorized person, thus allowing the appeals and setting aside the High Court's quashing of complaints.

In *Consumer Education and Resource Centre v. Union of India*[241], the Supreme Court, expounding on Article 21, held that the right to health is an integral aspect of the right to life.

In *Paschim Bangal Khet Mazdoor Samiti v. west Bengal*[242], the Supreme Court observed that Article 21 imposes an obligation on state authorities to safeguard every individual's right to life, emphasizing that preserving human life is paramount, and financial constraints cannot excuse failure to perform this constitutional obligation.

In *C.E.S.C. Limited v. Subhas Chandra Bose*[243], it was held that international conventions and Article 39(e) of the Indian Constitution provide for the right to health care as a fundamental right.

In *A.S. Mittal and others v. State of Uttar Pradesh & other*[244]*s*, the court observed that despite significant government spending on healthcare and cleanliness, hygiene conditions were still deteriorating.

In *R.Banerjee v. H.D. Dubey*[245], a Food Inspector took samples of Tree Top orange drink and vanaspati ghee from Lipton India Ltd., finding the drink's label expired and the products adulterated. Complaints were filed against the company and its officers. The company argued it had nominated individuals for day-to-day business responsibility. The Supreme Court interpreted Section 17 of the PFA regarding company offenses and allowed the appeals, remanding the matter to inquire into the company's nomination of employees.

In *Kirloskar Brothers Ltd v. State Insurance Corporation*[246], the Supreme Court broadly defined health as complete physical, mental, and social well-being, calling it a

[240] AIR 1994 SC 664
[241] AIR 1995 SC 636
[242] AIR 1996 SC 2426
[243] AIR 1992 SC 573
[244] AIR 1989 SC 1570
[245] AIR 1992 SC 1168: (1992) 2 SCC 552
[246] (1996) 2 SCC 682)

fundamental right of workmen, and interpreted "Life" to include a better standard of living, right to livelihood, hygienic workplace conditions, and opportunities to curb sickness and disability.

In *Omparkash Shivprakash v. K.I. Kuriakose*[247], a Food Inspector filed a complaint against a partnership firm after finding prohibited kesari dal in a sample of toor dal. The fifth accused sought to implead the appellant firm, from whom he claimed to have bought the dal. The Supreme Court widely interpreted Section 20A of the PFA, which governs prosecution institution with the permission of authorities, clarifying that this section's discretionary jurisdiction can only be exercised during the trial before conviction or acquittal, not before the evidence stage or after the trial ends, setting aside the High Court and lower magistrate's judgments and allowing the magistrate to reconsider the question at the appropriate stage.

In *Ram Lal v. State of Rajastan*[248], a Food Inspector found 25% added water in a milk sample from the appellant, who claimed it was camel's milk with no additions. The definition of "food" under the PFA was questioned. The High Court considered evidence and referred to journals on camel's milk nutrition, noting its consumption in Asia and Africa and its composition differing from cow and buffalo milk prevalent in Rajasthan. Ultimately, the court focused on the added water, reducing the accused's sentence.

In *State of MP v. Joginder Singh*[249], the court held that an article need not be fit for human consumption to be considered food under the PFA, as tobacco, used for human consumption, would be deemed food under this test.

In *Dayal Singh v. State of Rajasthan*[250], a Food Inspector found a sample of hard-boiled sugar confectionery adulterated due to mineral oil and unpleasant taste/smell. The appellant was convicted and sentenced. The Supreme Court upheld the conviction, noting the minimum six-month rigorous imprisonment prescribed by law for the offense and emphasizing the importance of the PFA and its rules in safeguarding consumer interests, dismissing the appeal as without merit.

[247] AIR 1999 SC 3870: (1999) 8 SCC 633
[248] AIR 2001 SC 47(2001) 1 SCC 175
[249] 2001 FAJ 169 at 170(MP)
[250] AIR 2004 SC 2608

In *Harit Recyclers Assn. v. Union of India*[251], the Delhi High Court, referring to the PUCL right to food case, stated that the need for food is basic, starvation negates a civilized society, and a "cry for food items can't be thought of" in a cultured society. Education, health, and nutrition are basic societal needs beyond mere animal existence, and lack of food is a "failure of life," as human biological growth depends on it, and true democracy requires fulfilling citizens' mental and biological needs.

5.4 Famous Food Safety Related incidents and Cases of United States of America & Australia

America:

- **Swill Milk Scandal 1850**[252]**:** An early US food contamination case in New York involving adulterated milk.
- **Jack in the Box case 1993**[253]**:** A severe E. coli outbreak from undercooked hamburgers affected hundreds and caused deaths, leading to the US adopting a zero-tolerance policy.
- **Bill Mar Foods Case 1998**[254]**:** Listeria-contaminated cold cut meats and hot dogs led to miscarriages, illnesses, and deaths due to inadequate cooking temperatures and refrigeration issues.
- **Peanut Corporation of America Case 2008-2009**[255]**:** A widespread Salmonella outbreak linked to PCA peanut processing led to numerous illnesses and deaths across 46 states, resulting in a massive recall and the conviction of the owner for poor food quality and bankruptcy.
- **Listeriosis outbreak incident 2011**[256]**:** Listeria-contaminated cantaloupes from Japan caused illnesses and deaths across 28 US states.
- **Blue Bell Creameries incident 2015**[257]**:** A Listeria outbreak led to the recall of millions of liters of ice cream, resulting in deaths and hospitalizations.

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[251] (2010) 170 DLT 476 (DB)
[252] List of food contamination incidents - Wikipedia
[253] Australian Institute of Food Safety, 5 Infamous Food Poisoning Cases in History https://www.foodsafety.com.au/blog/5-infamous-food-poisoning-cases-in-history
[254] Ibid
[255] Ibid
[256] Supra n 32
[257] Ibid

Australia:

- **Frozen pomegranate call back incident 2015 & 2017:** Hepatitis A contamination in frozen pomegranate products led to recalls and illnesses[258].
- **Rokmelon listeriosis outbreak 2018:** A Listeria outbreak associated with cantaloupe in New South Wales.[259]
- **Australian strawberry adulteration, incident 2018:** Needles were found in multiple strawberry punnets, affecting numerous brands nationwide[260].
- **Frozen vegetable listeria incident 2018:** Concerns about Listeria contamination led to recalls of top food brands from supermarkets, linked to deaths in Victoria and NSW, with many products imported from Europe[261].
- **Salmonella in eggs incident March 2019:** Salmonella contamination led to the destruction of hens and recall of eggs in New South Wales, linked to various egg manufacturers after multiple salmonella cases in Sydney.
- **E. coli in milk incident 2020:** Lion Dairy and Drinks recalled cream milk in Penrith due to E. coli contamination, posing risks of infections and illnesses, especially in young children.[262]

5.5 Apex Court orders on Food

The issue of Food is such that time and again the highest court of the country encounters with it. So, for the proper food facilities and to achieve food safety, it issues various orders consistent with it.

On November 28, 2001, a Public Interest Litigation (PIL) led the Supreme Court to issue orders covering approximately eight food schemes:

- **The National Programme of Nutritional Support to Primary Education (Mid Day Meal Scheme):** A scheme to provide cooked lunch to children in government elementary schools, with Tamil Nadu being the first state to launch it in 2001, followed by Supreme Court directives for all states to implement it within six months[263].
- **Scheme on Public Distribution system (PDS):** A system distributing basic commodities through fair price shops, requiring ration cards, initially divided for Below Poverty Line (BPL) and Above Poverty Line (APL) families in 1997, with both now

[258] Top 5 Famous Australian Food Recalls of the Last 5 Years | ERP Australia.
[259] Supra n 32
[260] Supra n33
[261] Ibid
[262] Ibid
[263] Dr. Manish Kumar Chaubey, Right to Food In India, 4 Civil and Military Law Journal. 282 (2012).

eligible. Addressing credibility concerns, the Supreme Court issued orders on forming BPL lists with proper supervision, ensuring BPL families' awareness of entitlements, allowing installment purchases for BPL families, accountability of PDS dealers (license cancellation for wrong entries, card retention, black marketing, overcharging, irregular shop hours), consistent food grain supply and ration shop accessibility, and proper verification of BPL beneficiaries enjoying PDS benefits.[264]

- **Antyodaya Anna Yojna: A Supreme Court-appointed committee warned six states of penalties for failing to provide subsidised food to the poorest or Antyodaya** beneficiaries, reporting a decline in beneficiaries in West Bengal, Delhi, Odisha, Bihar, Jharkhand, and Rajasthan.[265]
- **Integrated Child Development Services (ICDS):** Launched on October 2, 1975, to provide early childhood care and development, symbolizing the nation's commitment to nursing mothers and children. The Supreme Court has frequently issued directions to the Centre, especially during the COVID-19 pandemic, regarding this scheme, sending notices to various UTs, States, and the Centre to identify actual beneficiaries[266].
- **Annapurna Yojna:** This scheme targets providing security of food to the old age citizens of the nation. Thus citizens taking old age pension scheme are eligible under this scheme. Supreme Court time and again has issued various directions to the state and centre to identify the actual beneficiaries of this scheme.[267]
- **National Old Age Pension Scheme:** Provides monthly pensions to the elderly, with the Supreme Court recently noting gaps in the implementation of the National Social Assistance Programme for elder pensions.[268]
- **National Maternity Benefit Scheme:** In many of its decisions, the Apex Court asked the government for responses on the National Maternity Benefit Scheme. Recently, the Supreme Court asked for a response on a case filed by an NGO to pay pregnant women and lactating mothers Rs 6000 per month[269].
- **The National Family Benefit Scheme:** Provides benefits to families in case of the death of the primary breadwinner.

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[264] Ibid
[265] Free foodgrain scheme not reaching all of India's poor: SC-appointed panel | Latest News India - Hindustan Times
[266] Ministry of Women & Child Development Government Of India, Integrated Child Development Scheme
[267] nsap.nic.in/Guidelines/Annapurna scheme guidelines 2000.pdf
[268] Huge Gaps In Implementation Of Old Age Pension Schemes: Supreme Court
[269] Plea in Supreme Court seeks maternity benefits for lactating mothers - The Hindu

The Supreme Court has also been involved in cases concerning misleading food advertisements and labeling, such as the *Nestle India* case involving excessive lead and MSG in Maggi noodles and the "Taste bhi, Health bhi" advertisement, with FASSAI accusing Nestle of violating food safety laws and banning Maggi. The chapter concludes by noting the existence of comprehensive food safety legislations like the Food Safety and Standards Act, 2006, and the Consumer Protection Act, 1986, but emphasizes the need for greater public awareness and consumer action to address food safety issues, as many cases go unreported due to consumers' reluctance to engage in legal processes.[270]

[270] Sunetra Roday, Food Science and Nutrition 214 (2018)

CHAPTER -VI CONCLUSION

6.1 Conclusion

Vandana Shiva in "Stolen Harvest" said: "The right of corporations to force-feed citizens of the world with culturally inappropriate and hazardous foods has been made absolute (in the globalising economy). The rights to food, the right to safety, and the right to culture are all being treated as trade barriers that need to be dismantled… We have to reclaim our right to nutrition and food safety. We have to reclaim our right to protect the Earth and her diverse species. We have to stop this corporate theft from the poor and from nature. Food democracy…is the new agenda for ecological sustainability and social justice."[271]

Whatever we argue, it is a hard fact of the present world that the evil of adulteration of food is rampant these days. Because of this, there have been serious health hazards. Now the time has arrived when the penalty of the death sentence should be given to the food adulterators. Again the offences of Food Adulteration are now required to be treated as of murder.[272] The makers of Indian Constitution were aware about the different issues of health of humans. Thus they have included the promotion of health and its different facets under it. Although the right to health is not a specific fundamental right in Part-III of the Indian constitution but then even it is covered to a greater extent under Art-21 of the Constitution. It should be stated that right to health is not only the responsibility of government but citizens are also required to achieve it by renouncing the unhygienic conditions and by proper sanitation of food items.[273]

Another problem which is found in existence is of health and nutrition education. Every day we eat such food which mostly lacks in food safety and nutrition. So it is the prime time when we need the support of nutritionists. Nutritionists can reach to the public to share information on health foods. The educators can be journalists, dietitians, doctors, teachers, health visitors, nurses etc. programs on food safety and nutrition can be telecasted on television and radio. It is unfortunate to state here that the people associated with human health as: doctors are trained very little upon food safety and nutrition during their training. Now it has proved that most of the daily diseases happen

[271] Manish Kumar Chaubey, Right to Food In India, 48 Civil and Military Law Journal. 4 (2012)
[272] Shree Dhar Purohit & Kashi Nath Joshi, Supreme Court on Prevention of Food Adulteration Law in India (1973).
[273] H.G. Kulkarni, Right To Health Under The Constitution Of India, All India Reporter, (2014).

because of unsafe food. So food safety is very important. Food should be such that it can represent the heart of our culture. Public has also a right to be informed upon what to eat and what not.[274] Further to solve the problem of education a long term planning is important. Such initiative is hoped from the side of Government. A short term plans can bring long term benefits. This should be the policy of the government.[275]

Food Safety related offences are on rise in India. These are committed by the persons who have enough money. It can be said that it is because such persons wants more and more money and profit in their business due to which they commits such crimes.

In Chapter I, the discussion is relating to the Synopsis of the work on the study of Food Safety and Public Health in India.

Chapter II elaborates the topic of Analysis of legislation relating to Food Safety in India. The directions, policies and guidelines framed on food safety are also discussed under the chapter. It also includes the laws etc. framed by the central as well as state governments. Further the commissions and committees formed related to food safety and their recommendations are also discussed under this chapter.

Chapter III talked about Comparative Analysis of Food Safety Laws in India, United States of America and Australia. It mainly discussed the present laws related to food safety in United States of America and Australia. It also compared these countries' food safety laws with those of India. It thus analysed the Indian food safety laws in a new light and found certain drawbacks in the Indian laws.

Chapter IV focuses on evaluating the effectiveness of food safety laws in India. It begins by highlighting the critical role of food safety in public health, economic development, and social stability, especially given India's vast and diverse food system. The chapter discusses the significant burden of foodborne diseases in the country, the economic and health consequences of unsafe food, and the challenges posed by factors such as food adulteration, inadequate infrastructure, inconsistent enforcement, and low public awareness. It reviews the evolution of food safety regulations, the establishment of the Food Safety and Standards Authority of India (FSSAI), and recent initiatives like the Eat Right India movement. Despite legislative progress, the chapter identifies persistent gaps in enforcement, laboratory capacity, and public education, calling for stronger

[274] G.G. Birch & K.J. Parker, Food And Health: Science And Technology
[275] "Id . At 56"

institutional mechanisms, capacity building, and technological innovation to improve food safety outcomes and protect public health

Chapter V covered the judicial approach to Food Safety in India. It covered the judicial approach to the issue of food safety in India. It also covered the various judgments of the apex court and other lower courts on the issue of food safety in India.

Chapter VI Conclusion and Suggestions: Under the Concluding chapter, the researcher has tried to summarise the whole data and deliberations initiated and presented in the previous chapters. The research done under the fourth and fifth chapters has helped to draw certain important conclusions, suggestions and recommendations. Thus, it has displayed and ascertained some policy and steps to be taken by the government the related departments and the common man for the food safety.

6.2 Food Safety and Standards Act, 2006

Food Safety and Standards Act, 2006 was formulated by the Indian Parliament to protect the consumer of different foods by the different provisions of punishments. It has helped the innocent public by providing them the legal safeguards against food adulteration or others such crimes when such crimes are committed with an intention of making profit.

The Act has thus proved itself as a great savior of the mankind against food adulteration. Though the food safety related issues are handled very beautifully by FSS Act, 2006 and Indian Penal Code, 1860 it is sad to mention that still food safety related cases are on rise in our nation. These are happening almost on everyday basis in India, but sadly only few of such crimes are reported. These come rarely before the court in the lack of their reporting, information and knowledge. Thus it is desired from the law framers that a consistent effort to cover up every aspect of food safety must be progressed. To achieve this objective people should be made able to safeguard themselves against food adulteration, contamination and other food safety related issues.

Food safety and Standards Act, 2006 performed a desired role in saving the lives of the people against the corrupt methods of food adulteration. Its concepts like definitions of food safety related issues, punishments what can be provided against the violation of the food safety norms etc. are of great worth. After comparison of the food safety laws with that of America and Australia the following areas of focus are found in the Food Safety and Standards Act, 2006.

6.3 Steps to be taken by the Indian Government to fill up the loopholes left by Food Safety and Standards Act, 2006

Till this day, different health laws have been enacted by the government to properly address public health. But it is sad to mention that many such legislations still continue to threaten the health of millions. Food safety is one of such health issues. To date, the food is found with an unsafe quality. Again, the challenge of malnutrition poses a serious threat to health.[276] This has posed a serious threat to the issue of food safety in India. Economically, we have grown enough since the year 1990, but we still face the problem of malnutrition and unsafe food. Due to the consumption of such unsafe food, diverse issues such as food poisoning, malnutrition and undernutrition are on the rise.[277] The Right to food is a guarantee that all people will be able to feed themselves. It also imposes an obligation on the state that there shall be an equal distribution of food items. There is no doubt that without food, there is no possibility of life. But the thing which is required to be seen here is the quality of the food supplied to eat. So the pure meaning of the right to food means adequate food, essential for a decent standard of living, free from adulteration. The Constitution of India also favours this point and imposes a duty on the state authorities to supply subsidised and safe food items for consumption. India, being a welfare state, is thus under a duty to provide a quantity of food of a safe quality.[278] As stated before, the right to adequate food is only realised if every woman, child and man or all these in a community association, has economic or physical access to food. Food rights, therefore, should not be interpreted in a narrow sense. The role of the state is to ensure food at all times for its masses. As per Article 56 of the United Nations Charter and provisions contained in Article 11 of the Rome Declaration of the World Food Summit, states parties are obliged to ensure food security of safer quality.[279] The right to safe food and nutrition is essentially a major human rights issue, and if there is a single denial of it, then there is no freedom. There is an utter need for the protection of such rights at any cost.[280] Food right is a very basic human right. It

[276] Suman Gupta & Shridul Gupta, Right to Health- Law, Government & Public Health, 1 & 2 Nyaya Deep. 64, 65 (2014)
[277] Sudha Narayanan, Food Security in India: The Imperative and Its Challenges, (June, 21, 2025, 7:28 PM), https://onlinelibrary.wiley.com/doi/full/10.1002/app5.62 /.
[278] Seema Singh, Menace of Hunger vis a vis Right to Food: A Constitutional Perspective , 45 JILI. 1,(2009).
[279] Manoj Kumar Sinha, Right to Food International and National Perspectives, 56, JILI. 1,(2014).

[280] Debes Mukhopadhayay, Food Security in India 126 (2012).

covers the right of humans to live a life with dignity and without malnutrition, unsafe food, food insecurity, and hunger. Right to food also means that government of the nation should take every step to provide its citizens with safe food in quality and in quantity.[281]

The right to food cuts across programmes of many sectors –including nutrition, health, agriculture, livelihood, water and gender. India requires a significant increase of targeted investments in nutrition, disease control, sanitation accompanied by systematic reforms. This requires the improvement is governance and accountability of government machinery. Without a major shake up in policy and effectiveness of its implementation, the attainment of goal „food safety for all" seems unlikely.[282]

After Comparison of Indian Food Safety Laws with that of United States of America and Australia it is found that there are many weaknesses and loopholes revolving around Food Safety and Standards Act, 2006.

A significant structural gap in India's food safety governance is the absence of a dedicated Ministry of Food and Nutrition at both the State and Central levels. Unlike in the United States and Australia, where food safety and nutrition are handled through specialised bodies with expert leadership, India's food regulatory structure lacks such focused oversight. Establishing such a ministry would enable a more targeted and efficient approach to food safety and nutrition management. The proposed Ministry of Food and Nutrition should be led by professionals with expertise in public health nutrition and food sciences. These should not be mere political appointees but individuals with a deep understanding of food systems and public health challenges. The leadership should also function under the direct supervision of the Chief Secretary at the state level and relevant national authorities to ensure accountability and policy coherence.

There is a pressing need to build the capacity of college-level home science teachers so they can act as active partners in government nutrition and food safety programs. These educators must be equipped with specialised training in food and nutrition to create a knowledge base at the grassroots level. Empowering them will strengthen community engagement and awareness. A professional public health cadre specializing in food and nutrition should be developed. This cadre should include designated posts at every

[281] Manish Kumar Chaubey, Right to Food In India, 48 Civil and Military Law Journal. 4 (2012)
[282] N.C. Saxena, Right to Food Food Security in India Commission. 107,108 (2013).

administrative level—block, district, state, and national. Such a system would ensure uniform implementation of food safety policies and allow for real-time monitoring and response to nutritional health challenges. Nutrition must be treated as a developmental priority in India's policy framework. It is not merely a health concern but a critical determinant of human development. Including key nutrition indicators in developmental programs would help track progress and ensure targeted interventions for vulnerable populations.

Effective food safety governance requires convergence across various allied sectors like water, sanitation, rural development, and health. Integration at the planning and implementation stages would lead to synergistic outcomes, especially in rural and underserved regions. States should ensure that food safety strategies are linked with broader public welfare goals.The food processing and agriculture/horticulture industries must work in tandem with nutrition-focused institutions. Collaborative efforts can ensure that the supply chain, from farm to table, delivers safe, nutritious, and high-quality food. Joint initiatives between these sectors will also foster innovation and improve food quality standards.

Public awareness about nutrition and food safety is crucial for long-term impact. Regular health and nutrition communication campaigns should be launched to educate the masses. These campaigns must use accessible language, diverse media platforms, and culturally relevant messages to encourage healthy eating habits. The government should back the advertisement of healthy foods while regulating misleading or harmful advertisements of ultra-processed and unhealthy foods. Promoting fruits, vegetables, whole grains, and other nutritious items will guide consumer preferences toward better food choices. Unhealthy foods are often cheaper and more accessible, leading to poor dietary habits. To reverse this trend, healthy foods should be made more affordable through subsidies, while taxes or higher prices should be levied on ultra-processed and high-sugar foods. This pricing strategy would encourage the adoption of healthier diets, especially among low-income populations.

India should draw lessons from countries like the USA and Australia that have more advanced regulatory mechanisms for food safety. These include clear food labelling standards, transparent inspection systems, digital monitoring technologies, and legal accountability for violations. Adopting best practices from these countries could fill the regulatory gaps in India's system. The Food Safety and Standards Authority of India

(FSSAI) needs strengthening in terms of human resources, laboratory infrastructure, and enforcement powers. Amendments to the Food Safety and Standards Act, 2006, are required to clearly define roles, empower regulatory bodies, and ensure stricter compliance with food safety norms.

One of the major shortcomings in the current system is the lack of accountability and transparency in regulatory enforcement. An independent monitoring body, regular public audits, and citizen feedback mechanisms should be introduced to ensure that food safety standards are upheld and grievances are addressed promptly. Lastly, there is a need for a coordinated national food policy that brings together all aspects of food safety, nutrition, agriculture, public health, and consumer rights. Such a policy should be dynamic, evidence-based, and inclusive of all stakeholders, including consumers, farmers, industry players, and civil society. This holistic approach would ensure food safety and nutrition security for all citizens.

6.4 Suggestions

Strengthening Punitive Provisions of the FSS Act, 2006. Although the Food Safety and Standards Act, 2006 prescribes punishments for food-related offences, it still lacks the necessary rigour to deter violations effectively. The penalties need to be enhanced and strictly enforced to address the growing concerns around food safety. Inclusion of Small Vendors in the Legal Framework. The Act presently does not adequately address food crimes committed by small-scale vendors, such as contamination and adulteration. There is a pressing need to amend the legislation to explicitly cover and regulate the activities of small and unorganised food vendors. Making Food Offences Non-Bailable. Given the serious health risks associated with food-related crimes, especially adulteration and contamination, such offences should be classified as non-bailable. This would serve as a stronger deterrent against intentional violations that endanger public health. Mandatory Food Testing Laboratories at All Levels: The Food Safety legislation must mandate the establishment of food testing laboratories at the state, district, and local levels across all states. Even village-level access to testing facilities should be prioritized to ensure widespread and consistent enforcement of food safety standards. The Laboratories must be equipped with Modern Testing Tools. It is essential that all food testing laboratories, regardless of their level, are equipped with up-to-date and efficient testing tools. Continuous availability of such equipment will enhance the credibility and effectiveness of food inspections and quality assessments. A robust legal

framework must be put in place to protect individuals who report food safety violations. Whistleblower protection will encourage more people to come forward and report unethical or harmful food practices without fear of retaliation.

Officials working in the area of food safety should be vested with greater powers to act against food law violations, especially those perpetrated by small and local vendors. Empowering these officers will ensure effective grassroots-level monitoring and enforcement. A specialised food safety police force, functioning under the Health Ministry and vested with powers of seizure and investigation, should be introduced through amendments to the existing Act. This would ensure quick, scientific, and legally enforceable responses to food safety threats. A new legislation dedicated to protecting public health must be introduced. This Act would work in tandem with food safety laws to ensure that all aspects of human health affected by food quality are comprehensively covered. The proposed food safety police must be given legislative authority to impose sanctions and take legal action against those who breach food safety regulations. Their role should be clearly defined and legally enforceable through legislative mandates.

Trained personnel from the food safety force should regularly visit food stores, eateries, and public gatherings such as festivals to inspect food items. They should be empowered to take immediate action against contaminated or unsafe food using scientific tools and procedures.

A centrally coordinated, state-sponsored Food Safety Foundation should be established with operational branches in every state. This foundation must be equipped with advanced testing instruments and expert personnel to monitor and promote food safety.

A nationwide food safety project must be initiated to ensure that all food available in the market is wholesome, safe, and nutritious. This project should focus on awareness, infrastructure development, scientific support, and legislative reforms to build a healthy food ecosystem. To promote a healthy nation, every citizen must have the ability to access and afford food that is free from adulteration and contaminants. Food safety measures should prioritize equitable access and affordability as key goals. Uncontrolled promotion of genetically modified crops (GM crops) should be avoided. India, being an agriculturally rich country with diverse biodiversity zones, must protect traditional crop varieties and avoid the ecological risks associated with indiscriminate GM crop cultivation. There must be strict monitoring and regulation of genetically modified

crops and seeds that are imported into the country. Proper documentation, certification, and safety testing should be mandated before such seeds are distributed or cultivated. Scientists working on genetically modified food and crops must be encouraged to share accurate and specific information with the public. Transparency in research and safety assessments will foster informed debate and public trust. The government should formulate separate legislation to regulate genetically modified foods (GMF) and genetically modified crops (GMC). While striving to ensure food security, these laws must not compromise food safety and ecological balance.

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