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Strategies for Enhancing Food Safety-A Policy Appraisal in Punjab, Pakistan

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Abstract

Ensuring the security and safety of the food supply across Pakistan is a complex challenge that demands continual evaluation as well as robust policy responses. This policy paper outlines a comprehensive strategy to address the challenges to enhance food safety across the province of Punjab, Pakistan. In this regard, this research takes into account a number of factors, such as international cooperation, technological developments, regulatory frameworks, and stakeholder roles. It also explores the dynamic nature of food safety risks, highlighting the necessity for proactive and adaptable policies to counter new hazards. A complex web of interrelated factors, from farming and food processing methods to factors impacting food distribution and consumption, define the comprehensive landscape of food safety. Regulatory frameworks are essential for reducing risks at every stage of this spectrum. This paper assesses the efficacy of the regulatory body, that is, Punjab Food Authority, in ensuring the safety of the food through an examination of its inspection procedures. This also involves a review of the current working of this authority, aiming to identify gaps for future improvements.

Keywords: food processing, food regulations, food safety, Punjab Food Authority, policy appraisal, strategy

Introduction

Food safety has emerged as a major worldwide challenge with many developing countries like Pakistan, facing devastating threats of foodborne ailments resulting from food adulteration and contamination of available food with physical, biological and chemical agents (Akhtar et al., [2012](#); Arshad & Zahoor, [2019](#)).

World Health Organization (WHO) is committed to reducing foodborne illnesses globally. The 2002 Global Strategy for Food Safety by

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WHO aimed to address current challenges, incorporate new technologies and implement innovative strategies for strengthening food safety systems. This strategy was updated in 2021 with a core focus on strengthening national food safety and control systems and prioritizing specific actions to reduce the burden of foodborne illnesses (World Health Organization [WHO], [2021](#)).

Punjab with a population of 110 million is the largest province of Pakistan (Pakistan Bureau of Statistics, [2017](#)). Food manufacturing industry is ranked as 2nd largest industry after textile in this province (Government of Pakistan, [2023](#)). The province faces dire health and well-being challenges due to food adulteration and contamination with physical, biological and chemical agents. In Pakistan, food safety and hygiene issues have long been neglected. Therefore, the occurrence of different pathogens in food items is common due to lack of awareness among general public and food handlers. The Punjab Pure Food Ordinance was promulgated in 1960 to consolidate and amend the laws related to rules on food safety in the province. Punjab food authority (PFA) was established in 2011 through the provincial legislation to ensure availability of safe, nutritious and wholesome food for the people of province. The Punjab Food Authority has been working with aim to ensure the safety and quality of all food items and products. In 1996, the Government of Pakistan established the Pakistan Standards and Quality Control Authority (PAQCA) to provide a single authority for standardization and conformity assessment of all products entering and exiting the country. PSQCA was a key regulatory authority looking after food safety in Pakistan, thus enforcing the Punjab Pure Food Ordinance, until Punjab Food Authority was established in 2011 through the provincial legislation i.e. Punjab Food Authority Act 2011. Before the establishment of PFA, the health department was responsible for food inspections.

Since its commencement, PFA has developed and significantly upgraded its capacity and strategies to deal with the food safety issues. However, Pakistan has been urged by the global community (Circularity Gap Reporting Initiative (CGRI)), to focus on food safety as highlighted in Circularity Gap Report, 2023 (Fraser et al., [2023](#)).

This paper aims to examine how food safety strategies are currently implemented in Punjab, reviewing existing methods and emphasizing the need for adaptive policies. It emphasizes the necessity of flexible policies that can effectively handle new threats and guarantee the integrity and safety

of the food supply. The paper advocates for a proactive strategy that foresees and resolves these issues via continual observation, investigation, and creative policymaking.

Problem Statement

The World Health Organization (WHO) is working incredibly hard to address issues related to food safety and quality in developing nations, and it has identified food safety and hygiene as one of its top 11 priorities (WHO, [2022](#)).

Punjab, being a highly populated province, with 2nd highest food industry, faces a substantial challenge in providing safe and healthy food to its residents. To address this issue, the government of Punjab revised its food safety strategy in 2011 and established the PFA to devise food safety standards and to regulate food quality and safety issues, as outlined in Punjab Pure Food Regulations, 2018 (Government of the Punjab, [2018](#)).

Various food safety strategies have been framed and implemented, however, inadequate food safety measures and ineffective policy responses in Punjab pose a significant threat to public health. This necessitates a comprehensive appraisal of the existing food safety strategies and the development of appropriate policy interventions to address the identified gaps for the achievement of desired level of food safety in the Punjab, thereby reducing economic burden associated with health expenditures.

Research Questions

What are the challenges in the implementation of the Punjab Food Safety strategy?

How Punjab Food Safety Strategy can effectively address the challenges?

Scope

The scope of Food Safety Strategy is to analyze a comprehensive overview of the existing food safety strategies in Punjab with specific reference to Punjab Food Authority. The research aims to identify challenges and gaps, perform a policy response analysis and appraise various policy interventions that have been implemented to tackle the increasing food safety issues. The research will contribute to a better understanding of the strengths and weaknesses of existing food safety

strategies, paving the way for informed policy recommendations to enhance food safety in Punjab.

Literature Review

Food is an essential component of daily life, so its safety is extremely important for everyone involved from Farm to Fork. Globally, millions of people are adversely impacted by food safety issues, with some even lose their lives as a result of consuming contaminated food. In addition to the well-known microbiological or chemical hazards to food safety, environmental and personal hygiene also play a significant role in the global challenges facing food safety. Concerns about food safety and possible health risks remain a major global public health concern as living standards rise. Furthermore, fair legislative enforcement and solid scientific foundations are necessary for safe food provision to public. In addition to assisting in the general public's nutrition security, safe food also supports national economic expansion and the accomplishment of sustainable development objectives (Kotwal, [2022](#)).

Unsafe food is a threat to world health and ultimately to economic growth. When issues of food security persist, people focus only on food quantity not quality and eat more by adopting less healthy diets. The Elderly and young population is especially susceptible to food borne illness. A variety of pathogens, toxins, and contaminants are involved in the food chain, making food safety an international concern. The globalization of food supply requires harmonization of policies and standards to ensure food safety worldwide. Biological, chemical, and physical risks must be addressed at every stage of the food production process in order to ensure food safety, and regulatory bodies are essential to monitor process. Legislation and regulations are continuously evolving to prevent the distribution of contaminated food and improve hygiene practices in food businesses (Borchers et al., [2010](#)).

Food safety is an essential human right. Worldwide, unsafe food poses a threat to billions of people. Every year, consumption of contaminated food causes hundreds of thousands of illnesses and deaths. Safe food, thus, saves lives and improves both population and individual health. The region's economic growth is positively impacted by safe food when food safety is promoted and maintained. Equitable law enforcement and good scientific principals are prerequisites for a safe food supply. As technology develops,

new laws must be passed to safeguard a continuous supply of food items that are healthful and safe for human consumption. As living standards rise, worries about food safety and potential pollutants will continue to be major health issues (Fung et al., [2018](#)).

Ensuring food safety and hygiene is one of the biggest challenges and a critical task for any developing country as any kind of biological, physical or chemical contamination in the food may result in outbreak of foodborne illnesses (Bashir et al., [2018](#)). These outbreaks may cause severe economic losses. It is difficult to determine exact numbers for foodborne illnesses in Pakistan due to a lack of infection control, surveillance, and monitoring (Akhtar, [2015](#)). Many earlier studies have reported food safety related issues in the province of the Punjab. Therefore, in 2011, a proper regulatory body named Punjab Food Authority under the Punjab Food Authority Act 2011 and the Pure Food Rules 2011 were introduced by provincial Government of Punjab, Pakistan. The Punjab food authority has been working as a functional entity in district Lahore since 2nd July 2012. Implementation of food hygiene and quality standards is carried out through a competent team of Food Safety Officers (FSOs') and Assistant Food Safety Officers (AFSOs'). It is a functional entity in the Punjab province across all 36 districts. Specialized wings "Resource & Licensing", "Technical," and "Operations," which are functional and working to enforce the food hygiene and quality standards as described in the Punjab Food Authority Act 2011 and the Pure Food Rules 2011, are carried out through qualified teams of Food Safety Officers (FSOs') and Assistant Food Safety Officers (AFSOs').

Methodology

Mixed method approach has been employed in this research paper because the existing food safety strategy is affected by multiple factors. Data regarding the current food safety strategy has been collected from official record, online portal, published reports and other available resources. Data regarding the operational efficiency and challenges being faced has been collected through published reports. All the data collected has been analyzed and discussed in detail. Moreover, the data has also been presented by using suitable graphic and tabular forms.

Analysis

Previous Food Safety Strategy

Presently, Pakistan's food imports are regulated by the federal government whereas food safety standards are regulated by the provincial governments. Prior to the establishment of the PFA in 2011, food safety monitoring at the provincial level was carried out by a deputy commissioner under the provincial Health Department. The Health Department was responsible for ensuring food quality and safety, and food safety inspections were carried out by health inspectors (not food safety experts). Food inspectors deputed by health department were responsible for the inspection of food premises, sampling of food items and enforcement of relevant laws. However, their performance to curb the menace of adulteration was not exemplary due to lack of technical knowledge and expertise required to carry out effective inspections and massive operations against the established adulteration mafia. As the mandate of the health department was very broad, it became a challenge to look after both health and food related issues. Furthermore, food was not always monitored by the same authorities; for example, salt fell under different authorities from other foods. This made it challenging to monitor safety and quality of food items and products.

In 2010, the Federal Government of Pakistan devolved powers to the provinces, and the Health Department was split, delegating decision on food and health to their respective departments. Hence after 2011, the provinces were able to autonomously decide on issues regarding food and health.

Current Food Safety Strategy

Currently, the Punjab Food Department (provincial level) has an oversight function with a Minister (political) and a secretary of Food (civil servant). This department has two supervisory roles: the Food Secretariat, primarily devising policies to regulate wheat and sugar, and the Punjab Food Authority to regulate food safety and quality mechanism. The enactment of PFA Act by the provincial government was a key initiative to ensure food safety since it entrusted the PFA with full responsibility for enforcing food hygiene, food quality, and implementation of standards in the province. At the Federal level the PSQCA continued to regulate export and import of food and related safety and hygiene issues while the PFA was to regulate food in Punjab to ensure its food safety and quality.

In 2014, Lahore became the first district in Punjab to come under the operational jurisdiction of the PFA, eventually followed by all of the province. The PFA is now recognised as the most important entity working on safety and quality of food items and products in the Punjab province. It has also been a role model for other provinces. At present, there are three other provinces with a similar authority in place, and two other Pakistan-administered areas (AJK and GB) working to establish similar authorities.

Now it is important to develop a comprehensive food safety strategy. The Punjab Food Authority is the sole government agency working to ensure the safety and quality of food products in the province. It is need of the hour to assess the current food safety strategy of Punjab and identify the challenges faced by the government and other stakeholders in order to suggest policy guidelines for better service delivery.

Strategic Priorities

Food Control System of Punjab

Establishment of Punjab Food Authority. The Punjab Food Authority has been working with aim of ensuring the safety and quality of all food items and products. It is a functional entity in the province of Punjab across all 36 districts since July 2012. Specialized wings “Resource & Licensing”, “Technical,” and “Operations,” which are functional and working to enforce the food hygiene and quality standards as described in the Punjab Food Authority Act 2011 and the Pure Food Rules 2011. This enforcement is carried out by qualified teams of Food Safety Officers (FSOs’) and Assistant Food Safety Officers (AFSOs’). The Punjab Food Authority Act, 2011, entrusts the Punjab Food Authority with the following functions and responsibilities:

1. Regulating and monitoring the food business to ensure compliance by farmers, manufacturers, distributors, importers, and other stakeholder groups, in order to ensure provision safe food.
2. Formulate standards, procedures, processes, and guidelines related to various aspects of food, including food business, food labelling, and food additives. This act also specifies appropriate enforcement systems.
3. Specify procedures and guidelines for setting up and upgrading food laboratories.
4. Specify licensing, prohibition orders, recall procedures,

- improvement notices, and prosecution in a court of law.
5. Providing scientific advice and technical support to the government in matters related to food safety.
 6. Promoting general awareness regarding food safety and standards.
 7. Carrying out surveillance, which involves gathering, combining, analysing, interpreting, and disseminating information about dietary and nutritional intake (The Punjab Food Authority Act, [2011](#)).

Table 1

Comparative Analysis of Food Safety Progress During 2020 and 2021 in Punjab

Punjab Food Authority Workings	2020	2021
Total Inspections	438,645	503,945
No. of Violations	47,903	50,699
No. of Units Fined	36,535	48,379
Amount of Fine Rs.	221,417,700	428,893,698
No. of Units Sealed	9,271	1,570
No. of FIRs Lodged	337	188
No. of EPO Served	2,097	736
No. of Samples Taken	10,370	10,524

In Table 1, it has been clearly mentioned that how much Punjab food authority making efforts to ensure safe food for the people of province. In 2020, the operations teams of PFA inspected a substantial number of 438,645 food business. These inspections resulted in the issuance of improvement notices, with written instructions about personnel hygiene and cleanliness of premises that ultimately relates to food safety. The number of inspected premises was increased in 2021 up to 503,945 as shown in Figure 1. The number of violations were observed in various premises as shown in Figure 2. Upon surveillance visits the compliant food business were appreciated while non-compliant were penalized. The strict monitoring approach led to the penalization of 36535 food businesses in 2020, and the number increased up to 48,379 in 2021 that shows effective enforcement by the Punjab Food Authority as shown in Figure 3. When any violation is observed in premises it is penalized by a specific fine as amount of fine collected during 2020-2021 is shown in Figure 4.

Figure 1

Total Number of Inspections by PFA Operations Teams in Punjab During 2020-21

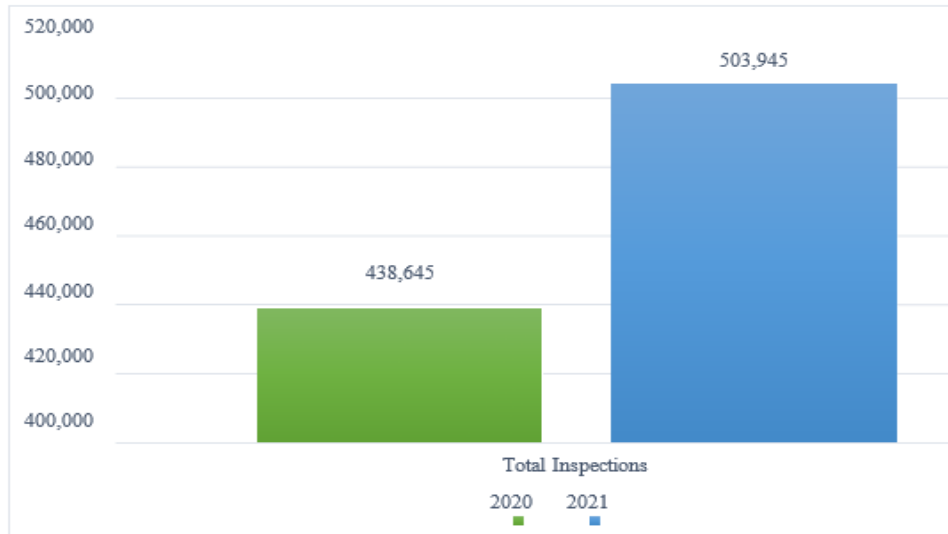


Figure 2

Total Number of Violations Observed by PFA operations teams in Punjab during 2020-21

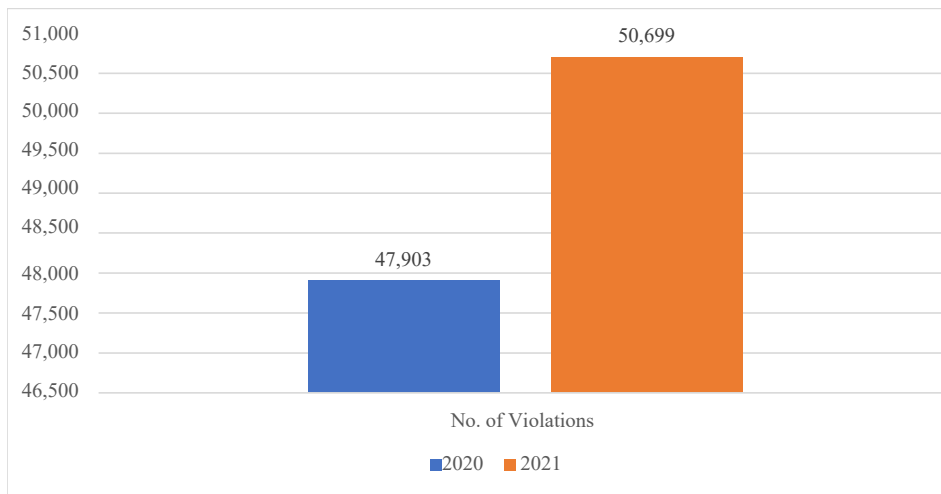
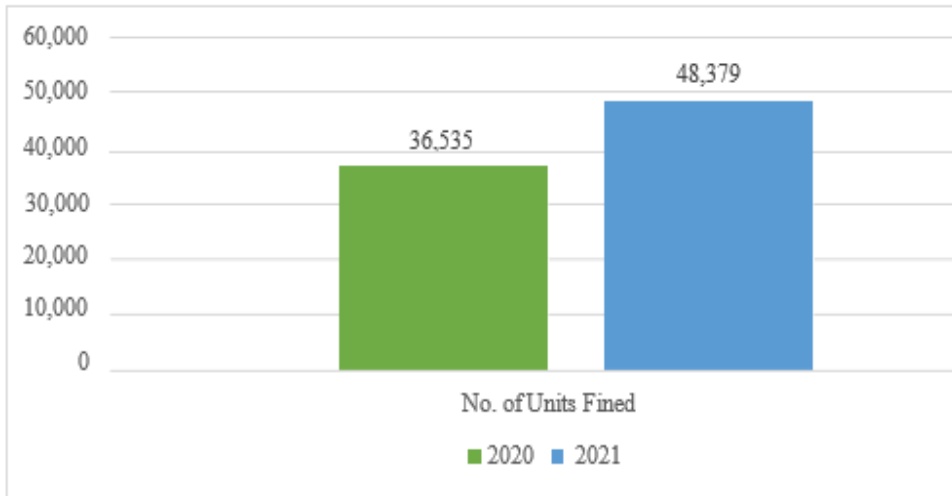
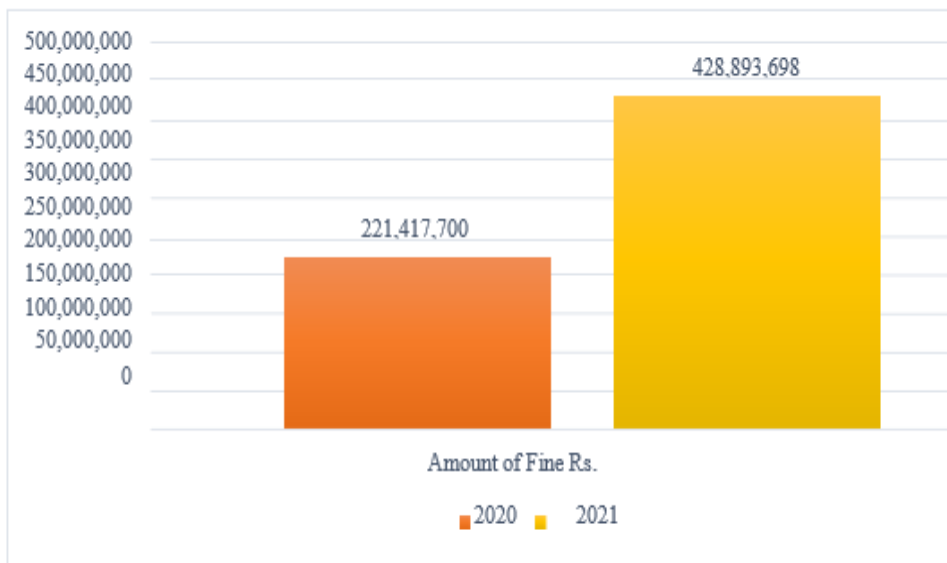


Figure 3

Total Number of Food Businesses Penalized with Fine by PFA During 2020-21

**Figure 4**

Total Amount of Fine Imposed by PFA on Non-Compliance During 2020-21



The operational teams of Punjab Food Authority collect samples to ensure safety and these are sent to concerned laboratories for analysis. As per results of the reports issued by laboratories, operational teams take actions accordingly. The food samples that are not in compliance to Punjab Pure Food Regulations and have safety issues are immediately discarded. In 2020-2021 major food categories that were checked included Meat, Spices, Pulses, Ghee and Water as shown in Figure 5. The major contributors to failed samples were Ghee (29%) and Water (29%) samples, followed by Spices (21%) and Meat (17%). It has been clearly mentioned as in Table 7 that quality of milk checked during 2021 increased compared to 2020, as given in Figure 6. On observation of safety issues, the premises are immediately refrained from any food processing activities by giving them Emergency Prohibition Orders (EPO). The number of EPO served by PFA during 2020-2021 is given in Figure 7. Once the concerned Food Business is rectified, its rectification is checked, and then it is allowed to resume its work. All these measures are taken to improve the food safety status, eradicate food adulteration, and ultimately reduce food borne illnesses.

Figure 5

Category Wise Percentage of Discarded Unsafe Commodities by PFA During 2020-21

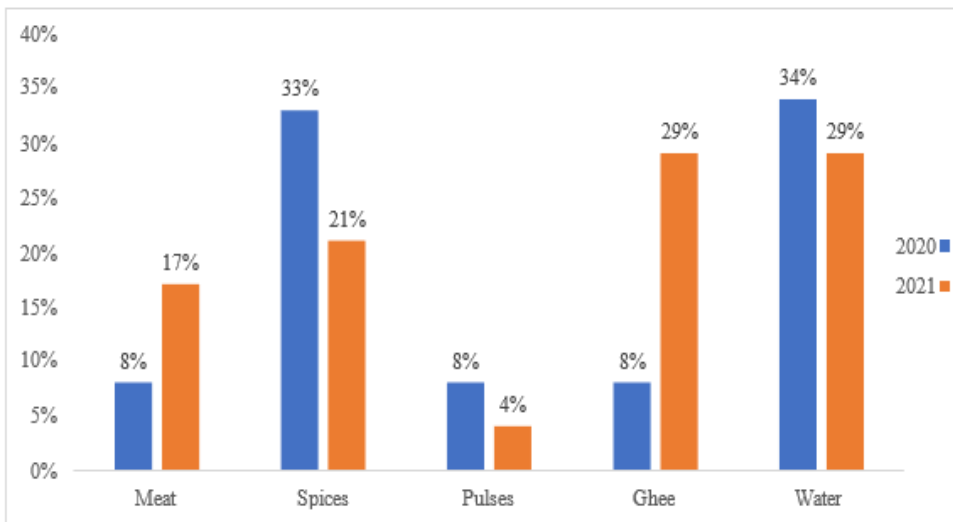
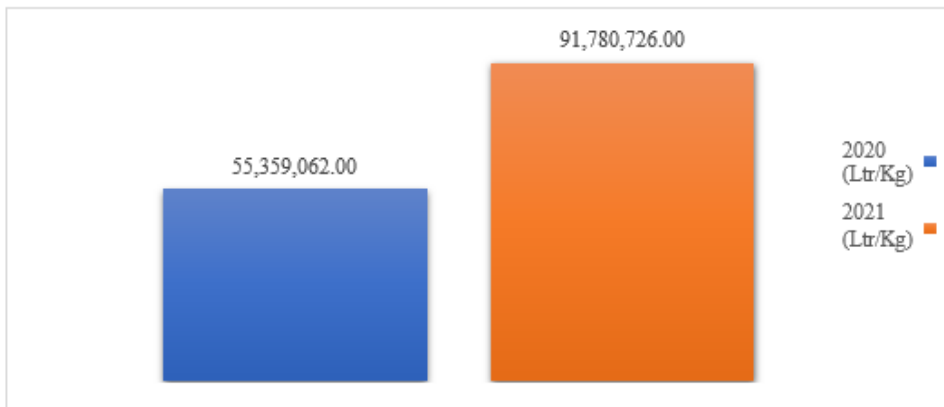
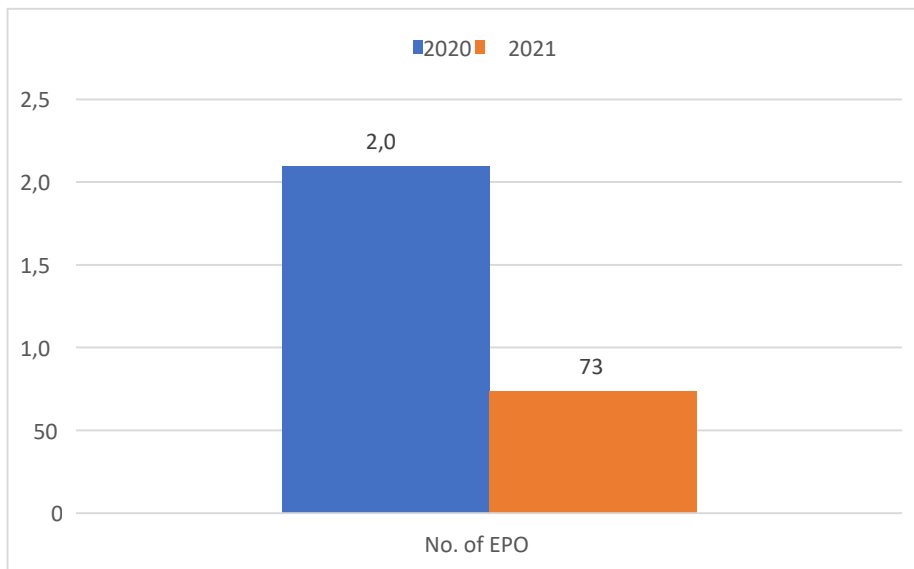


Figure 6*Total Quantity of Milk Checked by PFA During 2020-21***Figure 7***Total Number of Food Businesses with EPO Served by PFA During 2020-21*

Standards/Regulations. In order to curb adulteration and to ensure food safety, a stringent regulatory mechanism is always required. Regulations regarding food safety, known as the Punjab Pure Food Rules, have evolved over time, incorporating input from academia, industry,

governing panel members, and field inspection teams. New versions of these rules were passed in 2011, 2014, 2017, 2018 and the latest version in 2020. These rules are the guidelines for the food business operators working in Pakistan. The implementation of such regulations is encountered by many problems that include poor knowledge related to food safety and practices.

Establishment of Food Laboratories. As per Article 21 of the PFA Act 2011, food laboratories of Punjab Food Authority have been working since May 2012, with the objective of checking adulteration and contamination of food samples in order to ensure food safety and quality.

Punjab Food Authority has state-of-the-art laboratories working around the clock that carry out food testing for food hygiene and food adulteration under the supervision of qualified staff. Currently, three stationary laboratories are operational in Punjab, with two in Lahore and one in Multan. Moreover, seven mobile food laboratories are working in Lahore, Rawalpindi, Sahiwal, Sargodha, Faisalabad, Gujranwala and Multan.

Establishment of Medical Laboratories. Medical Screening Facilities are responsible for conducting the screening of food handlers for communicable diseases, aligning with international best practices to curb foodborne illnesses throughout the food supply chain.

Trainings of Food Handlers. Punjab Food Authority Training Schools aim to ensure that all food handlers working in environments where food is handled receive proper training. Punjab Food Authority Schools are functional in 34 districts of the Punjab and impart food safety training at levels I, II, and PIC/Hygiene Manager courses in food safety.

Food Safety is a Shared Responsibility

Food safety can't be ensured by any single entity alone; it's the responsibility of all departments, and organizations whether in private or government sector.

Organizations such as Nutritional International; Gain by Food Fortification Program pay important role in addressing nutrient deficiencies and preventing diseases in children, pregnant and lactating women.

1. Malnutrition is a global problem.
2. Iron, Iodine, Zinc, Vitamin A and Folic acid are the major

micronutrient deficiencies.

3. It causes significant economic losses by
 - a) High mortality rate among women and children
 - b) Reduced intellectual development in children

According to the WHO, the Copenhagen Consensus, and the FAO, one of the top four methods for preventing micronutrient malnutrition is food fortification.

Food fortification provides a nutritional benefit without requiring consumers to change their eating habits or purchase patterns. In Pakistan, Nutrition International, is in collaboration with Mott MacDonald implemented food fortification programs (Food Fortification Program, [2016](#)).

Food Fortification Programs.

Nutrition International. They have focused for vitamin A fortification in fats and oils and Iron, Zinc, Folic Acid and B 12 fortification in wheat.

Fats and Oil Fortification. Pakistan mandated the fortification of edible oil in 1965 as a strategy to address high prevalence of vitamin A deficiency in the country. However, due to weak implementation and enforcement, the coverage and adequacy of oil fortification remained limited. Nutrition International, in collaboration with Mott MacDonald, started supporting edible oil fortification with vitamin A and D under the DFID funded Food Fortification Program (FFP) in 2017. The program focuses on improving the capacity of millers as well as government partners to ensure adequate fortification of oil.

Prior to the start of this programme, a quick market analysis of edible oil availability across Pakistan's regions was carried out in order to assist the Food Fortification Programme (FFP), Pakistani government agencies, and regulatory bodies in determining the market availability of loose and unrefined oil. This was done to recommend ways to increase the fortification of vitamin A and D in edible oil and ghee, as well as to formulate strategies for an effective ban on the sale of loose oil. For this assessment data was collected from Punjab.

The program worked with national and provincial food regulatory bodies to amend and harmonize edible oil fortification standards to create

an enabling environment for fortification. It also established a market-led premix supply chain system to ensure availability of high-quality premix to the mills.

The FFP gave testing kits to mills so they could verify the levels of fortification and trained employees from oil mills on internal quality assurance and fortification procedures. The FFP also trained government regulatory staff on quality control, building their laboratories for enforcement of standards for fortification.

Wheat Fortification. Implemented by Mott MacDonald and Nutrition International, the wheat fortification program was initiated in June 2018 in Pakistan. The wheat flour mills were initially registered, and micro-feeders were installed by FFP, followed by staff training.

Health, Education and other departments should educate the people to demand fortifiedatta and wheat flour mill should be under domain of Punjab Food Authority.

Salt Fortification. Nutrition international has played an important role for iodine fortification in salt to preventgoiter and thyroid diseases. For this purpose, they have not only provided trainings to food business operators as well as to regulators. Punjab Food authority has imposed a ban on saleof loose salt.

Gain: Global Alliance for Improved Nutrition. GAIN has been working with governments, businesses, and civil society to transform food systems to deliver more nutritional food for all people, especially the most vulnerable. They are also working in Pakistan to reduce malnutrition related to micronutrient deficiencies by fortification of staple food, vitamin A in fats and Oils. As per the report of GAIN Working Paper Series 4 regarding PFA it has been concluded that

Since the PFA's establishment, greater compliance with standards at inspections and higher rates of food businesses being licensed imply likely improvements in food safety. Food labelling and safety issues are openly communicated to the public. The PFA also works to encourage food businesses to choose fortified products and check fortification quality, thereby helping support improved nutrition. Enabling factors for the PFA include the devolution of authority from national to provincial levels and supporting legislation, including the PFA Act, which establishes the provincial food

authority and sets the foundation for the PFA's work. The existence of an independent scientific panel also ensures that all PFA outputs, including standards or messages to the public, are based on scientific evidence. The organization has benefited from a solid and growing source of funding from the province, supplemented by improved licensing compliance by food businesses. (Nemer et al., [2020](#))

Pakistan National Accreditation Council (PNAC)

Quality and Safety Standards must be followed by each entity related to food production, including farms, processing industries and testing laboratories. For this Pakistan, National Accreditation Council (PNAC) plays a crucial role by accrediting of food related vicinities to specified ISO standards, ensuring the implementation of international standards. The food testing laboratories working under the domain of Punjab Food Authority are ISO/IEC 17025 accredited from PNAC. ISO 17025 is the international standard that sets out the general requirements for the competent, impartial, and consistent operation of laboratories.

World Food Safety Day

On 7th June, World Food safety day is celebrated to draw attention towards food borne illness. New plans are made to take each step towards food safety as a shared responsibility between governments, producers and consumers.

World Food Day

World Food Day is celebrated worldwide on 16th October to draw attention towards foodsecurity and combat hunger. Various organizations, including the World Food Program, the World Health Organization and the International Fund for Agricultural Development, participate in the celebrations.

The necessity for governments, international organizations, and stakeholders to participate in a coordinated and proactive effort to protect the world's food supply is emphasized in the strategy conclusion.

Gaps in the Current Policy

Punjab food authority working best but there are many gaps yet which can be filled with stronger policy. The following gaps in the current policy have been identified:

Lack of Regulatory Framework

There lacks a comprehensive and up-to-date regulatory framework that effectively addresses emerging food safety challenges. The existing regulations i.e. Punjab Pure Food Regulations have not been updated since 2018, placing the effective implementation and enforcement mechanism at stake. This particular aspect has also been highlighted by Muhammad Rafay Anis ur Rehman in the research paper Food and Drug Safety Management in Pakistan in these words:

The regulatory framework for food and drug safety in Pakistan is the responsibility of several federal and provincial agencies, including the Drug Regulatory Authority of Pakistan (DRAP) for drugs and the Pakistan Standards and Quality Control Authority (PSQCA) for food. However, the system faces several challenges, including weak regulatory frameworks, a lack of resources, corruption, and a lack of public awareness. (Ur Rehman, 2023)

Surveillance and Monitoring

Effective surveillance and monitoring systems are essential for identifying food safety hazards, promptly detecting outbreaks or contamination incidents, and ensuring compliance with regulations. The analysis of the current food safety regime reflects an inadequacy in the existing systems for surveillance, data collection, and analysis, and recommend improvements if necessary (Akhtar, 2015)

Stakeholder Engagement

Food safety authorities have been established in all provinces of Pakistan to ensure food safety. However, there is a lack of coordination and an inclusive approach among all relevant stakeholders, including government agencies, industry representatives, consumer organizations, and civil society, which is crucial for the success of any food safety strategy.

Capacity Building

Adequate training and capacity building programs for food safety inspectors and other relevant stakeholders are crucial. The policy analysis should assess whether there are sufficient resources, training programs, and guidelines in place to support a well-equipped workforce capable of carrying out effective food safety inspections and enforcement.

Insufficient Staff

PFA is working in operation with only 25% of staff than required for full potential. Only 110 teams working throughout the province. This understaffing has led to a significant workload for food safety teams, impacting their performance.

Mixed Jurisdiction

While PFA aims to ensure the safety all food items, other departments such as livestock department, have their own jurisdictions. For instance, livestock department is responsible for animal health, milk quality at farm, and meat quality checks, creating a potential overlap in responsibilities.

Specific Areas of Jurisdiction

PFA has jurisdiction in some areas, but in specific areas locations within Punjab, the PFA cannot operate, such as cantonment areas. This allows adulteration mafia to shift their production units to such areas, produce adulterated food items and sell them both within and outside cantonment areas. So, on traceability, the food safety teams are not able to curb them to stop their illicit production.

Lack of Special Food Courts

When food safety teams apprehend a food safety case or adulteration case, and the accused appear in court, there are no special food courts. This absence of specialized courts leads to delays in adjudicating adulteration and food safety cases, sometimes resulting in inadequate prosecution.

Lack of Field Testing Resources

During inspections, especially in food production units and food storage areas, food safety teams conduct on-the-spot testing. But, food safety teams lack modern testing equipment, such as CDR food lab. While some teams working in major cities may have this equipment, those working in other districts lack modern equipment for food testing.

Conclusion

This policy paper has delved into the current food safety policy of Punjab and the working of Punjab Food Authority that shows how a food-related governance mechanism can be comprehensive and effective. The existing food safety policy of Punjab illustrated the value of prioritizing governance

to create better food systems and improve nutrition. Despite the context specificity, it offers useful insight about enabling factors and barriers for improving urban governance for nutrition in different geographical locations. Key governance choices such as creating a formalized governance mechanism, basing decisions on a scientific evidence base, and ensuring a solid source of funding contribute to the effectiveness of PFA. The PFA houses its operations, technical functions, and resource and licensing function under one roof, and has a scientific panel for input and advice. These governance-related choices contribute to its effectiveness, since all issues, policies, and practices can be addressed in a coordinated and evidence-based manner. The analysis of food safety strategy reveals that most significant advancements in ensuring food safety from production to consumption can be achieved through a scientific risk-based system. This ensures that surveillance, regulatory, and research resources are allocated to maximize effectiveness. This will require identification of the greatest public health needs through surveillance and risk analysis. The state of knowledge and technology defines what is achievable through the application of current science. Allocating public resources based on this combined risk assessment and technical feasibility analysis can have the greatest positive impact on public health.

Recommendations

Efficient and robust food system infrastructure enables foods such as fruit and vegetables, animal source products, grains and pulses to be produced and reach to consumer in a form that meets nutritional requirement without causing any health hazard. To fill the gap areas and to ensure a safe, nutritious and whole-some food supply, the following recommendations are proposed for current food safety strategy of Punjab:

- Implementation of food standards aligned with the international standards i.e codex, FAO, FDA, is the first critical step to be adopted to ensure food safety. This helps in harmonizing local standards with global benchmarks.
- All food laboratories must test food commodities by following standardized testing parameters across the district of Punjab.
- The integration of various departments related to food is another requirement to ensure food safety. Food authority is currently dealing with all food commodities being sold in the market in processed form.

It is crucial to integrate all other departments related to food at farm, including dairy, cereals, poultry and meat. Ensuring the safety of raw foods by controlling factors like pesticide use, fertilizer application, and feed quality is vital for a comprehensive food safety strategy.

- Its need of time to focus on the safety and quality of packaging material that come in direct and indirect contact of food. It should not pose any harm to consumers and should be environment friendly.
- Strengthening communication and collaboration between provincial food authorities, such as Punjab Food Authority, Sindh Food Authority, Baluchistan Food Authority, and KP Food Authority, is crucial. Establishing policies that promote joint efforts can significantly contribute to controlling adulteration and maintaining consistent food standards across regions.

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