

PROGRESS AND PARADOXES; FOOD SECURITY IN PUNJAB, PAKISTAN BY 2025, A PUBLIC HEALTH ASSESSMENT.

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According to the World Food Summit 1996, the concept of food security is that, when people are physically and economically privileged at all times to have an adequate, safe, and nutrient-rich food that is also capable of meeting their dietary needs and food choices, to lead a healthy and active life. It revolves around four dimensions, which include physical availability of food, economic and physical access to food, food utilization, and stability of these components over time.¹ In the public health domain, this particularly refers to reduction in stunting and wasting, improved nutrition for mothers, greater immunity, and a decrease in non-communicable disease risk throughout life. Despite overall improvements in food safety regulations, production of essential staples, and expanded social protection programs for nutrition, Pakistan's food security in 2025 is marked by a complex intermix of chronic malnutrition, substantial reliance on climate-sensitive crop production, constant affordability crises, and expanding diet-quality issues. According to the data of Global Food Security Index (GFSI) 2022, Pakistan scored about 52.2 points out of 100, ranked on 84th position out of 113 countries and was classified as lower-middle-income, with major inadequacies in affordability and sustainability while many neighboring countries like Bangladesh, Sri Lanka Vietnam and India scored more points, reflecting better performance in terms of food availability, quality, safety and sustainability.^[2] Statistics on the Global Hunger Index (GHI) 2025 are also unsatisfactory for Pakistan, scoring only 26 points and the level of hunger being categorized as “serious”. Unfortunately, Pakistan ranked at 106th out of 123

countries in the Global Hunger Index (GHI) 2025, which is worse than many regional peers³ A total of around 20.7 percent of the population is reported to be undernourished in Pakistan. About 18 percent of under 5 children suffer from acute malnutrition, and approximately 40 percent of children are stunted, while it is around 28 percent in Bangladesh and 35 percent in India.⁴ National Institute of Population Studies (NIPS) reported high levels of severe stunting (45%), wasting (15%), and underweight (30%). These problems are particularly high in rural areas (46%) and in certain regions like FATA (58%), Gilgit Baltistan (51%), and Baluchistan (52%).⁵

Pakistan is ranked as the eighth most vulnerable country subjected to the impact of climate change, and has been affected by unprecedented floods. The country has faced one of the most devastating monsoon seasons in recent years. Record-high prices of food and fuel, exacerbated by effects of climate change on agriculture and infrastructure, have put strain on Pakistan's most vulnerable population. It is also struggling with high multidimensional poverty. The monthly expenditure of nearly half of an average Pakistani household goes toward food, and yet 82 percent of the population is unable to afford a healthy diet.⁴

As far as the Province of Punjab is concerned, Punjab is important to Pakistan's food security domain. It employs approximately 37–38 million people and accounts for more than half of national GDP. ⁶ It is the country's fundamental wheat, rice, and sugarcane belt, and has been the national breadbasket ever since. Being the most populated province, if Punjab thrives, the food security and nutrition profile of the whole of Pakistan improves; if Punjab stumbles, the national indices also deteriorate. The province has achieved computable progress in agricultural

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production, regulations for food safety, and some nutritional outcomes. Unfortunately, at the same time, the province still lags behind many better-performing counterparts in middle-income countries on child nutrition, diet ^{quality} and access, resilience in the food system, and governance.

Availability and production of staple food have largely been improved by 2025. Wheat production has considerably increased over the last decade. Pakistan's wheat output was around 28.2 million tonnes in 2023–24.⁷ Punjab food security perspective, Punjab has some real achievements as it has maintained its role as the chief supplier of wheat to all other provinces. Under the Punjab Agriculture Policy 2018, Improvements in agricultural practices have led to increased productivity and diversified crops, in accordance with the National Food Security Policy 2018.⁸ These policies explicitly link agricultural growth to eliminating hunger and malnutrition through diversification of crops, increased productivity, and improvements in the value chain. This alignment appeared as a major governance gain compared with the fragmented approaches of the past. From a public health perspective, Punjab's most visible success is seen in food safety regulation. The Punjab Food Authority (PFA), by implementing the Punjab Pure Food Regulations 2018, has put restrictions on contaminants and trans-fats in edible oils and fats; the trans-fat content is limited to 0.5%, aligning with WHO's REPLACE guidelines. This legislation by the provincial government has paved the way for a national trans-fat elimination standard, which was adopted in 2025 and now applies a standard TFA limit across 58 categories of food⁹ This is not inconsequential because trans-fats of industrial origin are strongly linked to CVDs, and controlling them is one of the most successful and cost-effective interventions in the prevention of NCDs globally. This, indeed, is a genuine public health success. Punjab Food Authority (PFA) has also strengthened the licensing system of restaurants and food premises through routine inspections and penalties. It has also pushed forward the standards for staple food fortification (wheat flour, edible oil, salt), supplementing the initiatives of federal fortification initiatives. While enforcement is not even, these regulatory frameworks are more

developed in comparison to many other lower-middle-income settings.

As far as the nutritional status of the population is concerned, moderate but real progress has been achieved. Anthropometry and micronutrient status are the ultimate indicators of food security. Reports from the Punjab Multiple Indicator Cluster Survey (MICS) 2017–18 done by UNICEF show that the prevalence of stunting among children under 5 years in Punjab was about **31.5%**, which dropped from roughly 42% in 2007.¹⁰ A multi-level analysis using the same data validated that “every third child is stunted” in Punjab, but also demonstrated a declining trend and emphasized the importance of maternal education, antenatal care, and WASH practices in reducing stunting.^[11] Recent analysis of Punjab child undernutrition indicated stunting at about 27.8%, underweight around 19.2%, and wasting 9.0% by mid-2020s¹² This shows a relative 10–14% point reduction in the prevalence of stunting over a decade, which is not ideal, but better than the national statistics, where stunting was reported to be 40% in 2018.

Attribution is complex, but several overlapping initiatives have made contributions in this regard. Amplification of the Lady Health Workers network, immunization, and dedicated maternal and child health services are all linked with improvement in child growth across Punjab compared to other provinces. Initiatives specific to nutrition like vitamin A supplementation, Infant Young Child Feeding (IYCF) counselling, micronutrient and supplement powders in some districts, and nutrition-sensitive measures like female education, water, sanitation and hygiene (WASH) practices, and cash transfers all led towards better progress of Punjab. Evidence from Punjab between 2011 and 2018 shows that scaling up such interventions and initiatives, particularly maternal education, access to safe water and health service utilization, has all been related to a reduction in stunting, especially in the regions of Northern and Southern Punjab.¹³

Food security is not just about food production; it is more about affordable and stable access to food. While focusing at the National level, the

Household Integrated Economic Survey (HIES) is used to monitor food insecurity using the Food Insecurity Experience Scale. The Benazir Income Support Programmed (BISP) and Ehsaas-linked cash transfers (Kafaalat, Nashonuma) cater to large numbers of poverty-stricken households in Punjab, buffering access to food, particularly after the COVID-19 pandemic and during inflation spikes. Provincial measures, which include subsidized wheat flour, Ramzan and model bazaars, and targeted relief during events of floods and inflation episodes, have improved periodically. These social safety initiatives have somehow prevented intense failure of household food security during conditions of high inflation.

Despite these achievements, the issue of food security in Punjab remains precarious, and there is an incomplete transition from “enough calories” to “nutritious, equitable and sustainable diets”. Punjab still faces the paradox of the double burden of malnutrition. There is a high stunting rate and micronutrient deficiencies, especially in South Punjab. In the late 2010s and even in the early 2020s, about one in three children is stunted in Punjab.¹⁴ On the other hand, obesity is also on the rise. Data shows that our national obesity prevalence is about 7.8% and is continuously increasing.² Although Punjab performs better as compared to other provinces, it is still a part of this national picture. This indicates that food availability has improved somehow, but the quality of diet, especially intake of fruits, animal-source foods, and low use of ultra-processed foods, is by far poor for many households. Data from different studies suggest that South Punjab disproportionate burden of stunting; most of the stunted children live in about 11 districts in this region^{13,14} Rural-urban and wealth gradients are steeper among poorer rural-urban communities; people who are living in rural areas and with low literacy rates have considerably higher odds of child undernutrition, even when overall average situation of the provincial averages look fine.^{11,15} Despite the loopholes in availability of food, healthcare services and WASH infrastructure, average performance of Punjab brings a masking effect to the overall national picture. Global Nutrition reports show that the approximate prevalence of stunting in under-five children is

around 28% in Bangladesh and 19.6% in Vietnam at the national level, while as per 2018 data, it is around 31.5% in Punjab, Pakistan.¹⁶ So far, Punjab is performing relatively better than some South Asian peers but worse than high-performing LMICs like Vietnam. Moreover, the Sustainable Development Goal target is to reduce stunting prevalence to below 3%, and Punjab, being at around 28–31%, is far off from the benchmark.

The issues of diet quality and diversification cannot be overlooked. The dietary habits of people in Punjab are predominantly skewed toward cereals, particularly wheat and rice, sugar and trans fat oils, with relatively lower intakes of fruits and animal-source foods in low-resource households. National analyses based on the National Nutrition Survey 2018 highlighted that almost 39.6% of households are food insecure, and dietary patterns have limited diversity.¹⁷ While Punjab has taken initiatives to promote agricultural diversification, real farm-level diversification remains limited. From a public health point of view, this represents a major gap. Food security is still framed largely as wheat security, not as security of dietary patterns. Neighboring Countries like Vietnam and has managed a shift toward greater diversity in diet, such as higher intake of fruits, vegetables, animal-source foods and policies for regulation of ultra-processed foods and sugary drinks. Punjab has also made a strong start with trans-fat elimination, but sugar, salt and ultra-processed food regulation is still weaker, and school-food environments largely remain unregulated. This ultimately leaves Punjab behind in maintaining nutritional quality and NCD prevention.

Punjab’s food system is highly climate-sensitive. The 2025 monsoon rains and floods submerged significant parts of Punjab and Sindh, affecting roughly a tenth of national crops and over 90% of vegetables in some districts, and damaging 1.8 million acres of farmland. A chain of extreme events one after the other (2010, 2014, 2022 and 2025) have shown how quickly food availability, prices and access can deteriorate, especially for laborers and smallholders. In addition, water security is also an emerging concern. The Indus River system, which irrigates almost 80% of

Pakistan's agriculture, is under great stress from glacial melt, reduced flows and contentious transboundary water politics of neighboring countries. Punjab's agricultural system is heavily dependent on canal irrigation and unsustainable extraction of groundwater. A narrow set of water-intensive crops, notably rice in certain belts, further intensifies this issue. All these factors lead to the undermining of the sustainability and adaptation dimension of food security and very well explain Pakistan's weak GFSI scores on this pillar.

Finally, there are gaps at the governance level. After devolution, provinces had gained responsibility for agriculture, health and nutrition, but inconsistent coordination between these sectors and the federal government is still a major barrier. Multi-sectoral nutrition plans like National Food Security Policy (2018), Pakistan Multi-Sectoral Nutrition Strategy, Sustainable Development Goals (SDG-2) alignment, Pakistan Dietary Guidelines for Better Nutrition, Trans-fat elimination (2025 national standard) and Salt iodization, wheat flour and oil fortification efforts, all exist on paper which are evidence based, yet coverage, quality and scaling up of interventions is not up to the mark in the worst-affected districts, especially in region of South Punjab.¹⁴ Monitoring and evaluation systems are continuously improving but are not always used for rapid, district-level targeted actions. From a public health perspective, the challenge is not the lack of strategy formulation but fragmentation and weak implementation.

From a public health physician's perspective, Punjab's post-2025 food security agenda must shift from a narrow focus on wheat production to ensuring sustainable, equitable access to diverse and nutritious diets by prioritizing high-burden districts for intensive maternal and child nutritional interventions, strengthening antenatal care and infant feeding practices, and embedding nutrition indicators into district performance systems. Simultaneously, agricultural policies should incentivize diversification toward pulses, fruits, vegetables and small livestock through supportive pricing, public procurement and farmer risk protection, while food safety regulation must be expanded beyond trans-fat

control to include front-of-pack labelling, restrictions on unhealthy food marketing to children, and stronger enforcement capacity. Climate resilience should be built through climate-smart farming, flood-resistant infrastructure and shock-responsive social protection, alongside investments in storage. Cold chains and efficient value chains to reduce post-harvest losses and food waste. Finally, sustained progress will depend on stronger multi-sectoral governance and co-ordination, and better use of routine and survey data to identify local vulnerabilities. At the same time, expanded implementation research to scale context-appropriate, evidence-based nutrition and food system interventions across the province. Only then will Punjab move from being the "breadbasket of Pakistan" in a narrow sense to being a true engine of nutrition and health, and it will then be able to keep up with the performance of better-off countries on global food security and nutrition indices.

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