

**POLICY INSIGHT ARTICLE**

Agricultural Land Conversion, Housing Societies, and Food Security: Evidence from Faisalabad, Punjab, Pakistan

Muhammad Arslan Wajid¹ & Muhammad Khalid Bashir^{1,2,*}

¹ Institute of Agricultural and Resource Economics, University of Agriculture, Faisalabad, Pakistan

² Policy, Advocacy and Outreach, Pak-Korea Nutrition Center, University of Agriculture, Faisalabad, Pakistan

* Corresponding author: khalid450@uaf.edu.pk

ARTICLE INFO**Keywords**

- Farmland Conversion
- Housing Societies
- Food Security
- Land Governance
- Punjab

Article History

Received: 20 June 2026

Revised: 24 June 2026

Accepted: 24 June 2026

Available online: 24 June 2026

License

CC BY 4.0 – Open Access

DOI

[10.66529/agripat.2026...33](https://doi.org/10.66529/agripat.2026...33)

ABSTRACT

Rapid urbanization in Pakistan is accelerating the conversion of fertile agricultural land into housing schemes and commercial developments, posing significant risks to food security and rural livelihoods. This policy brief draws on a household survey of 120 respondents from four peri-urban villages in Faisalabad District and an updated review of international evidence on agricultural land conversion. Findings reveal that most land sales were driven by financial distress rather than planned investment, with the majority of sellers later expressing regret over their decisions. Awareness of land-use regulations and the long-term implications of farmland conversion was found to be extremely limited. Respondents also reported declining food adequacy, dietary quality, and sustainability of local water and agricultural systems following land conversion. These findings reinforce growing concerns about the implications of unchecked urban expansion for food security. The brief recommends the introduction of a legally binding agricultural zoning framework, mandatory food-security impact assessments, and strengthened land governance measures to protect productive farmland and promote sustainable development.

Citation: Wajid, M.A. & Bashir, M.K. (2026). Agricultural land conversion, housing societies, and food security: Evidence from Faisalabad, Punjab, Pakistan. *J. Agric. Pol. & Transf.* 2(3): 104-115. <https://doi.org/10.66529/agripat.2026.2.3.97>

1. Conceptual Clarification

This brief uses several related terms that are not interchangeable and conflating them risks blurring the analysis. "Land grabbing" refers, in international literature, to the large-scale acquisition of land, typically by foreign or domestic capital, often with limited local consultation, for export-oriented agriculture, biofuels, mining, or speculative holding (Cotula et al., 2014; Edelman et al., 2013). "Farmland conversion" is broader and more neutral: it denotes any change in the legal or physical use of agricultural land to a non-agricultural use, regardless of the scale, actors, or motive involved, and is the term used throughout this brief for the household-level land sales documented in Faisalabad. "Urban expansion" refers to the outward physical growth of a city's built-up area, of which farmland conversion is frequently a consequence rather than a cause. "Housing development" refers more narrowly to the construction of residential infrastructure, which is the dominant, though not the only — end use to which converted farmland in this study area is put.

The Faisalabad evidence sits closer to the farmland-conversion end of this spectrum than to land grabbing in its classic sense: transactions are small (typically one to four acres), nominally voluntary, and conducted between individual sellers and buyers or developers rather than imposed by foreign capital or the state. However, the line is not absolute. The distress-driven character of most sales, the near-total absence of regulatory awareness among sellers, and the systematic disadvantage faced by tenant cultivators who hold no formal title (Saqib et al., 2025) mean that the transactions studied here share important features, unequal bargaining power and an information asymmetry that benefits the buyer, with the land-grabbing literature's central concerns, even though they differ in scale and formal voluntariness. This brief therefore treats farmland conversion in Faisalabad as a distinct but related

phenomenon and draws on the land-grabbing literature for comparative insight rather than as a direct descriptive label for the local evidence.

2. Introduction and Policy Context

Agricultural land is, in the most literal sense, the foundation of a country's food system. When fertile, irrigated land at the edge of a city is converted into a residential or commercial development, that conversion is rarely reversible: once a housing society's roads, drainage, and plot boundaries are laid down, the underlying cropland does not return to production even if the plots themselves remain unbuilt for years, as is common across Punjab's peri-urban corridors. The scale of this transformation in Pakistan is large and accelerating. Government remote-sensing assessments compiled by the Urban Unit, a Punjab government research department, indicate that more than a third of Lahore's agricultural land has been converted to built-up area since 2000, and that major cities across the province (Lahore, Faisalabad, Gujranwala, Multan, and Rawalpindi) have collectively lost tens of thousands of acres of farmland to public and private housing schemes (Pakistan Today, 2024). A 2022 petition by the Kisan Board Pakistan, an agricultural advocacy organization, estimated that housing schemes had already consumed 20-30 percent of Punjab's fertile land, with Lahore alone having converted roughly 70 percent of its agricultural land and Faisalabad around 30 percent (Heinrich-Böll-Stiftung, 2022). These estimates are consistent with the orders issued by the Lahore High Court directing authorities to halt illegal housing schemes on agricultural land, and with the Supreme Court of Pakistan's 2024 remarks that the unchecked spread of housing societies reflects a failure of the state to protect food security and to discipline politically influential developers (Pakistan Today, 2024, Gill and Shabir, 2026).

A legal and regulatory framework for housing and land-use already exists in Punjab, but it has not constrained farmland conversion in practice. The Lahore Development Authority Act, 1975, gives the LDA statutory authority over private housing schemes, and a 2013 amendment extended this jurisdiction from the district level to the whole of Lahore Division; the Punjab Housing and Town Planning Agency Ordinance, 2002, separately tasks a provincial agency with formulating land-use policy and master plans across the province; and the LDA's own Land Use Regulations (2020) and Private Housing Schemes Regulations (2021) set out the technical approval process a scheme must satisfy before development. In practice, however, enforcement has lagged badly behind the pace of conversion: investigative reporting has documented more than 150 housing societies occupying thousands of acres in Lahore alone operating in violation of the 1975 Act, and the volume of non-compliant schemes was large enough that the provincial government established the Punjab Commission for Regularization of Irregular Housing Schemes Ordinance, 2021, specifically to legalize more than 6,000 already-built irregular schemes after the fact (Lok Sujag, 2023). This pattern, a workable legal architecture undermined by reactive, after-the-fact enforcement rather than upfront agricultural-land protection, is the institutional backdrop against which the Faisalabad survey findings below should be read, and it is the central governance gap this brief's recommendations are designed to close.

This is not a uniquely Pakistani phenomenon. Peri-urban farmland loss accompanies urban growth across the developing world. In China, expropriation for industrial zones, infrastructure, and real estate has affected more than 500 million farmers and is projected to displace over 80 million more by 2030 (Li et al., 2024). In Addis Ababa's Akaki Kaliti sub-city, roughly 90 percent of peri-urban farmland was converted to urban use between the mid-1980s and 2020 (Tufa & MegentoLika, 2022). In Bakalan Village in East Java, Indonesia, a quantitative household study found a land conversion rate of roughly 50 percent over a single year, driven primarily by industrial development pressure, with measurable downstream effects on household food-expenditure and energy-consumption indicators (Novianty et al., 2025). Comparable dynamics are documented in peri-urban Ghana, where rapid urbanization around Kumasi and Wa has eroded indigenous farmers' customary access to arable land even where they nominally retain land rights, forcing adaptation strategies similar to those observed among Faisalabad's tenant cultivators (Sumbo et al., 2023). Globally, land tenure insecurity is itself a measurable driver of conversion: a global-scale study found that weaker tenure security is systematically associated with higher rates of agricultural-to-urban land conversion, implying that strengthening farmers' land rights is, in itself, a food-security instrument (Moghaddam et al., 2025).

This Pakistani and South Asian evidence sits within a longer-standing international literature on large-scale land acquisition, which became a major research theme following the 2007–2008 food-price crisis. That literature established that rising global food demand, dietary change, and biofuel expansion were placing unprecedented pressure on agricultural land worldwide (Godfray et al., 2010), and that the resulting wave of large-scale land deals, estimated to affect earnings for as many as 12 million people across 28 countries, carried mixed and often adverse consequences for rural livelihoods (Davis et al., 2014). Comparable evidence from Mozambique found that large-scale land acquisitions delivered a disproportionately high share of negative effects relative to the anticipated gains

in food security and employment (Aabø & Kring, 2012), while multi-country research cautioned against treating land-acquisition statistics as more uniform or more reliably harmful than the evidence supports, even as it confirmed that weak local consultation and unequal bargaining power were recurring features of large land deals (Cotula et al., 2014; Edelman et al., 2011). Two strands of this literature are especially relevant to Pakistan's housing-driven farmland conversion today. First, secure land tenure has long been shown to be a precondition for agricultural investment, since farmers who feel insecure in their land rights are less willing to invest in improvements whose returns they may not be able to capture (Besley, 1995) a dynamic that plausibly operates in reverse for households under pressure to sell. Second, the sustainable-livelihoods framework used to analyze rural household vulnerability treats land as one among several interdependent assets, alongside labor, skills, savings, and social networks, whose loss a one-time cash payment cannot fully substitute for (Scoones, 1998), a point directly echoed in this brief's Faisalabad survey findings on post-sale regret. Critics of large-scale farmland investment have further argued that the central problem is not weak governance alone but the underlying logic that redirects land toward uses serving capital rather than local food security and poverty reduction (De Schutter, 2011) the same logic that today redirects Punjab's farmland toward speculative housing rather than food production. The World Bank's own assessment of large-scale farmland investment has likewise cautioned that policy frameworks emphasizing transparency, recognition of local land rights, and employment effects are essential if land transactions are to support rather than undermine development (Deininger & Byerlee, 2011, 2012).

This policy brief situates the issue within the Sustainable Development Goals. Farmland conversion threatens SDG 2 (Zero Hunger) directly, by reducing domestic production capacity, and SDG 1 (No Poverty) by eliminating the principal productive asset of rural households. It intersects with SDG 3 (Good Health and Well-Being) and the nutrition outcomes of women and children; with SDG 5 (Gender Equality), given women's central but under-recognized role in household food provisioning; with SDG 11 (Sustainable Cities and Communities), which calls for inclusive and resilient urbanization rather than unplanned sprawl; with SDG 12 (Responsible Consumption and Production), given the resource costs embedded in built infrastructure on prime farmland; with SDG 13 (Climate Action), as fertile, well-irrigated land is frequently also the land best suited to climate-resilient cropping; and with SDG 15 (Life on Land), through the loss of agricultural soils and associated ecosystem services. The policy challenge, in short, is not whether Pakistan and comparable developing economies will urbanize, they will, but whether urbanization can be planned in a way that does not consume the very farmland on which food security, rural livelihoods, and child nutrition depend.

3. Methodology

3.1 Study Design and Setting

This brief draws on a cross-sectional household survey conducted in four villages of Faisalabad District, Punjab (Chak No. 16, Chak No. 17, Chak No. 18, and Amin Pur Bangla). These villages were selected because each has experienced visible horizontal urban expansion onto surrounding farmland. Faisalabad is a useful case study precisely because its population has grown from roughly 0.1 million to 3.2 million over the past seven decades, a more than thirty-fold increase accommodated overwhelmingly by horizontal expansion rather than vertical densification.

3.2 Sampling Procedure and Respondent Selection

A purposive, respondent-driven sampling strategy was used. Villages were selected purposively for documented exposure to farmland-to-housing conversion, and within each village a target of 30 respondents was set, yielding a final sample of 120 households (30 per village, 25 percent each). Eligible respondents were household heads or adult household members with direct knowledge of the household's land transactions; no random or stratified sampling frame was available at the village level, since no complete list of land-selling households existed prior to the survey. This non-probability approach is appropriate for an exploratory study of a specific, hard-to-list population (households that have sold agricultural land), but it limits the statistical generalizability of the findings beyond the four study villages, a point returned to in the Limitations subsection below.

3.3 Data Collection Instrument and Process

Data were collected through structured, in-person interviews using a pre-tested 55-item questionnaire covering household demographics, landholding history, the circumstances and amount of any land sold, perceived impacts on farming livelihoods and food security, and a 21-item Likert-scale battery on land conversion and sustainability. The questionnaire was prepared in Urdu and administered in Urdu or Punjabi depending on respondent preference. Fieldwork was conducted by the researcher directly over a period of approximately 20 to 25 days; precise calendar starts and end dates were not separately recorded in the underlying dataset, which is noted as a limitation below.

Internal consistency of the 21 Likert-scale items was assessed using Cronbach's alpha ($\alpha = 0.747$), indicating acceptable reliability for the descriptive analysis that follows.

3.4 Respondent Profile

Table 1 summarizes the demographic and socioeconomic profile of the 120 respondents. A majority were aged 30 to 50 (67.5 percent combined), and nearly half (49.2 percent) reported no formal education. At the time of the survey, three-quarters of respondents (75.8 percent) held no agricultural land at all, reflecting the fact that the sample was drawn specifically from households with a history of land sale; a further 17.5 percent held only one to three acres. Household monthly income was concentrated in the PKR 25,000–100,000 range for roughly four in five respondents. The questionnaire did not separately record respondent sex, and the underlying dataset cannot be disaggregated by gender; this gap is acknowledged explicitly in the Limitations subsection and identified as a priority for future survey instruments in the Research and Monitoring Priorities recommendation below.

Table 1. Demographic and socioeconomic profile of survey respondents (N = 120)

Characteristic	Category	N	%
Age	20–30 years	11	9.2
	30–40 years	41	34.2
	40–50 years	40	33.3
	Above 50 years	28	23.3
Education	Illiterate	59	49.2
	Primary–Middle	39	32.5
	Matric–F.A.	14	11.7
	Above F.A.	8	6.7
Current landholding	No holdings	91	75.8
	1–3 acres	21	17.5
	4–6 acres	8	6.7
Monthly household income (PKR)	25,000–50,000	40	33.3
	51,000–75,000	21	17.5
	76,000–100,000	35	29.2
	101,000–125,000	22	18.3
	126,000–150,000	2	1.7
Village (n=30 each)	Chak 16 / Chak 17 / Chak 18 / Amin Pur Bangla	120	25.0 each

Source: original household survey, Faisalabad District.

3.5 Distinguishing Observed Data, Respondent Perceptions, and Author Interpretation

Three distinct types of evidence appear in Section 3 below, and they carry different evidentiary weight. Observed transaction data, the amount of land sold, the year of sale, current landholding size, and migration following sale, were reported by respondents as factual recall about their own households and are presented as descriptive statistics. Respondent perceptions, attitudinal responses to Likert-scale items on food adequacy, dietary quality, and the sustainability of local production systems, are subjective assessments, not independently measured production or nutrition outcomes, and are explicitly labeled as perceptions throughout. Author interpretation, the inferences this brief draws about likely mechanisms linking conversion to food-security and nutrition outcomes, is presented as interpretation grounded in the survey findings and the wider literature, not as a directly measured causal effect. This distinction matters for policy use: perception data are valuable for understanding affected households' own assessment of harm and for guiding qualitative priority-setting, but they should not be read as a substitute for objective production, price, or anthropometric measurement in any subsequent impact evaluation.

3.6 Limitations

- Non-probability sampling: purposive selection of four villages and respondent-driven recruitment within them means findings describe the studied villages and similar peri-urban Faisalabad communities, not Punjab or Pakistan as a whole.
- Cross-sectional design: a single round of data collection cannot establish before/after causal change; all comparisons of “before” and “after” land sale rely on respondent recall rather than panel measurement.
- No anthropometric or dietary-intake data: nutrition-related findings rest on household-level perceptions of food adequacy and quality, not on measured child growth, maternal anthropometry, or dietary-diversity scores.
- No gender disaggregation: the survey instrument did not record respondent sex, preventing any gender-disaggregated analysis of perceptions or outcomes despite the brief's discussion of gendered impacts drawn from the wider literature.
- Imprecise survey dates: the fieldwork period is documented only as approximately 20–25 days, without recorded calendar start and end dates.
- Single-instrument reliability check: internal consistency was assessed only for the 21-item Likert battery ($\alpha = 0.747$); no test–retest or inter-rater reliability check was conducted, and no validation against administrative land-record data was possible within the scope of this study.

4. Results: Agricultural Land Conversion and Food Security in Faisalabad

This section presents the survey findings, organized as direct, indirect, and long-term impacts. Consistent with the distinction set out in Section 2.5, factual transaction data are reported as descriptive statistics, while attitudinal findings are explicitly labeled as respondent perceptions.

4.1 Direct Impacts: Why Land Is Sold and What Is Lost

Observed transaction data. The survey data reveal that land sales in the study villages are overwhelmingly distress-driven rather than strategic. Ninety-six percent of respondents reported selling land because of a lack of resources rather than as part of a planned investment or income-diversification strategy, and the great majority of parcels sold were small, 43 percent of sellers parted with two acres or less, and a further third sold three to four acres, consistent with smallholders and tenant cultivators bearing the brunt of conversion. The pace of land sale has accelerated over time: just over half of all recorded sales in the sample occurred between 1991 and 2010, the period coinciding with Faisalabad's most rapid urban and industrial expansion. Critically, only 11 percent of households who sold land reported that doing so had not fulfilled its intended purpose, yet more than 92 percent later said they regretted the decision, a combination that points to short-term liquidity needs overriding longer-term household welfare, a pattern consistent with findings from Pakistan's wider tenant-farmer literature, where agricultural land conversion has been shown to strip sharecropping households of their primary income source and push them into unemployment and food insecurity (Saqib et al. 2025).

Observed transaction data, continued. Awareness of the regulatory and developmental dimensions of land conversion was almost universally absent: 97 percent of respondents did not recognize the term “land grabbing,” and none of the 120 respondents reported believing that converting farmland posed a direct selling risk. This information gap matters for policy design, because it indicates that affected households are not weighing land sale against an informed understanding of food-security or environmental consequences; they are responding to immediate cash needs within an information vacuum that current land-use governance does nothing to close.

4.2 Indirect Impacts: Food Prices, Livelihoods, and Out-Migration

Observed transaction data. Loss of farmland in the study area is closely associated with rural-to-urban migration: nearly half of respondent households (49 percent) reported moving from a rural to an urban area following land transactions, consistent with national-level evidence that rural-to-urban migration in Pakistan has risen markedly as agricultural livelihoods erode. Respondents overwhelmingly perceived land conversion as detrimental to farming-based livelihoods, none of the 120 respondents believed that selling agricultural land improved farming outcomes, and fewer than 7 percent believed that land sale brought meaningfully better local infrastructure in return. This is consistent with research from Pakistan's broader land-conversion literature showing that the principal drivers of conversion are profit-seeking by real-estate developers and households' acute need for cash rather than rational long-run land-use planning, and that the conversion process systematically disadvantages

tenant farmers and sharecroppers who hold no formal title to compensate them for displacement (Saqib et al., 2024).

Respondent perceptions. The Likert-scale component of the survey captures attitudinal, not measured, outcomes. More than 85 percent of respondents strongly agreed that land conversion had altered their rural livelihood, and over 90 percent strongly agreed that urbanization had reduced, rather than enhanced, the sustainability of local water resources, food systems, and production capacity. These are subjective perceptions, not objective production statistics, but their consistency across more than a dozen separate survey items, and their consistency with the international literature on land-use intensification and household welfare, lends them considerable weight: research from rural Mozambique similarly found that intensified, unsustainable land-use transitions can erode household welfare and disproportionately harm land-poor households even where aggregate production rises (Smith et al., 2019).

Table 2. Key survey findings by item, distinguishing observed transaction data from respondent perceptions (N = 120)

Survey Item	Type	%
Sold land due to lack of resources (vs. planned investment)	Observed	96.0
Sold 2 acres or less	Observed	43.3
Regretted the decision to sell land	Observed	92.0+
Did not recognize the term “land grabbing”	Observed	97.0
Household moved rural-to-urban after land sale	Observed	49.0
Believed land sale improved farming outcomes	Observed	0.0
Strongly agreed conversion altered rural livelihood	Perception	85.0+
Strongly agreed urbanization reduced water/food/production sustainability	Perception	90.0+
Strongly agreed food quantity/quality declined after conversion	Perception	80.0+

Source: original household survey, Faisalabad District.

4.3 Long-Term Impacts: Resilience, Sustainability, and Intergenerational Risk

Author interpretation. The cumulative, long-run risk is that fragmented, piecemeal conversion of small parcels, the pattern documented in Faisalabad, where the typical sale involved two acres or less, produces the same structural outcome as large, single-block conversions, but with far less visibility to regulators or researchers, since aggregate statistics tend to capture large transactions far more easily than thousands of small, ad hoc sales. This is precisely the dynamic identified in the broader land-conversion literature: incremental, household-by-household sales accumulate into large-scale farmland loss that is easy for monitoring systems to overlook (Saqib et al., 2024). At the national level, Pakistan's food-trade balance illustrates the macro-consequence of this accumulation: the country's food import bill rose by more than 15 percent year-on-year in the first nine months of one recent fiscal year, as wheat, cotton, and sugar imports widened the gap left by declining domestic production (Heinrich-Böll-Stiftung, 2022) a reversal for a country that was historically a net food exporter. Global modelling of land degradation reinforces the long-term stakes: FAO's State of Food and Agriculture 2025 finds that land degradation, of which irreversible conversion to non-agricultural use is one dimension, is increasingly constraining agricultural productivity and disproportionately affecting smallholders, with consequences that compound over successive harvest cycles rather than resolving on their own (FAO, 2025a).

5. Maternal and Child Food Security Implications

This section draws on respondent perceptions rather than measured nutrition outcomes; the household survey did not collect anthropometric, dietary-intake, or biomarker data of any kind, and the discussion below should be read accordingly. The findings suggest potential implications for maternal and child nutrition through reduced agricultural production and changing household food access pathways, rather than demonstrating a directly measured nutritional effect. Respondents who had previously farmed reported strong consensus (over 80 percent strongly agreeing) that land conversion had reduced both the quantity and the perceived nutritional quality of food available to their households, and a similar majority reported that the conventional food system in their area had become less able to meet daily nutritional needs since land was converted. These perceptions are consistent with, though not proof of, a plausible mechanism: household food production that previously supplemented diets with

vegetables, dairy, and grain is replaced by reliance on purchased food, at a time when the same household has typically lost income from agricultural wage labor.

This local pattern mirrors a well-documented global one. FAO and partner agencies estimate that 2.6 billion people could not afford a healthy diet in 2024, with affordability worsening across Africa and in many low-income and lower-middle-income countries even as the global hunger rate edged down slightly to 8.3 percent of the population (FAO et al., 2025). Within this picture, dietary diversity, the number of distinct food groups consumed, remains a persistent weak point for exactly the demographic most exposed to farmland loss: only about one in three children aged 6–23 months globally meet minimum dietary diversity standards, and anemia prevalence among women of reproductive age has risen rather than fallen over the past decade (FAO et al., 2025). Recent multi-country analysis of more than 28,000 mother–child dietary pairs across eleven low- and middle-income countries confirms that maternal and child diets are correlated but only moderately so, meaning that interventions and shocks affecting household food access tend to affect mothers and young children through somewhat different pathways and therefore require nutrition-sensitive, not merely income-sensitive, policy responses (Hanley-Cook et al., 2025).

Three mechanisms connect farmland conversion specifically to maternal and child nutrition. First, the loss of household production of vegetables, pulses, and dairy, typically managed by women on small homestead or rented plots, narrows dietary diversity precisely in the food groups associated with micronutrient adequacy in the first 1,000 days of a child's life, a developmental window with lasting effects on growth, cognition, and lifelong health (Hanley-Cook et al., 2025). Second, the rise in local food prices that frequently accompanies reduced regional production disproportionately affects low-income households, who spend a larger share of income on food and have the least capacity to substitute toward nutrient-dense alternatives when staple prices rise. Third, the loss of agricultural wage labor, a major source of women's cash income in rural Punjab, reduces women's bargaining power over household food allocation at the same time that it reduces household purchasing power overall, a double burden that nutrition-sensitive agricultural policy explicitly aims to interrupt through interventions such as production-diversification support and behavior-change communication for women of reproductive age (Haghparsat-Bidgoli et al., 2022).

6. Economic, Social, and Environmental Consequences

6.1 Rural-to-Urban Migration and Youth Disengagement from Agriculture

Migration following land sale, documented in just under half of surveyed households, is consistent with a broader pattern in which the loss of agricultural land serves the link between younger household members and farming as a viable livelihood. Once land is sold, the skills, social networks, and accumulated knowledge associated with farming have no obvious place to be transmitted to the next generation, accelerating a generational shift away from agriculture that is difficult to reverse even where some farmland survives nearby.

6.2 Land Concentration, Speculation, and Inequality

A recurring feature of the Pakistani case, corroborated by investigative reporting and by the Supreme Court's own observations, is that newly created housing societies frequently remain substantially vacant for years after farmland conversion, as land is purchased by investors speculating on future appreciation rather than by households seeking to build homes (Pakistan Observer, 2025). This means the food-security cost of conversion, the permanent loss of cultivable land, is often incurred well before any offsetting benefit in the form of housing supply materializes, and in some corridors may never fully materialize if speculative plots remain undeveloped indefinitely.

6.3 Community Displacement and Loss of Farming Identity

Beyond its economic dimension, land sale was associated in the survey with a strong sense of regret and loss of identity: respondents' near-unanimous agreement that selling had not worked to their advantage, despite short-term liquidity gains, suggests that the social and psychological costs of leaving farming are not adequately captured by transaction price alone.

6.4 Environmental Degradation and Loss of Ecosystem Services

Conversion of irrigated farmland to impervious surfaces removes not only crop production capacity but also the water-retention, groundwater-recharge, and microclimate-moderation functions that agricultural soils provide. FAO's global land-degradation assessment identifies declining productivity and ecosystem function as a self-reinforcing risk: as cropland is lost or degraded, the remaining agricultural base is placed under greater intensification pressure, which can in turn accelerate degradation on the land that remains (FAO, 2025a). Comparable peri-urban studies from East Java, Indonesia, document parallel pressure on local food security

indicators, including household food-expenditure and energy-consumption ratios, following rapid agricultural land conversion driven by industrial development (Novianty et al., 2025).

7. Governance and Policy Challenges

The persistence of farmland conversion in Pakistan despite repeated judicial intervention illustrates a governance failure rather than a mere planning oversight. The Lahore High Court has previously ordered authorities to halt illegal housing schemes on agricultural land, and in 2024 the Supreme Court's Chief Justice publicly criticized the unchecked proliferation of housing societies, observing that the interests of influential developers have tended to prevail over the public interest in food security and affordable housing alike (Pakistan Today, 2024). That such interventions have not durably reversed the trend points to several specific institutional weaknesses.

7.1 Weak Land-Use Planning and Zoning Enforcement

Pakistan's agricultural land-use regulations exist on paper in several provinces but lack the systematic remote-sensing-based monitoring, automatic land-record flagging, and inter-agency enforcement mechanisms required to detect and act on conversion in real time. The Punjab government's own Urban Unit relies on periodic satellite assessments to document conversion after the fact, rather than on a real-time early-warning system capable of preventing it (Pakistan Today, 2024).

7.2 Fragmented and Incremental Conversion Evading Detection

Because the typical land transaction documented in this study involved only one to four acres, large-scale, single-block conversions are not the dominant mode of farmland loss; instead, thousands of small, household-level sales accumulate into the same aggregate effect while remaining individually below the threshold likely to trigger regulatory scrutiny. This mirrors international evidence that remote-sensing techniques capable of detecting such cumulative, small-parcel land-use change have been comparatively underused in land-conversion research and monitoring (Hausermann et al., 2018).

7.3 Real Estate Speculation and Misaligned Incentives

Land conversion in Pakistan is driven substantially by the comparative profitability of real-estate development relative to agriculture, an incentive structure reinforced by the absence of meaningful capital-gains or holding-cost disincentives for speculative land-banking. Without such disincentives, plots within converted housing societies can be held vacant indefinitely while still generating capital appreciation for their owners, removing any market pressure to limit further conversion to only the land that will be genuinely built upon.

7.4 Tenure Insecurity Among the Most Affected

Cross-national evidence indicates that weaker land tenure security is itself a statistically significant predictor of higher rates of agricultural-to-urban conversion, implying that insecure tenure does not merely fail to prevent conversion but may actively facilitate it by making land easier to alienate from cultivators who lack the documentation or bargaining position to resist sale under economic pressure (Moghaddam et al., 2025). This is consistent with the Faisalabad survey finding that distress and lack of resources, not informed investment choice, were the dominant drivers of sale.

7.5 Conflicts Between Urban Development and Food Security Objectives

Provincial and municipal development authorities are typically evaluated on housing supply, tax revenue, and infrastructure metrics, with no equivalent institutional mandate to account for farmland lost or food-production capacity foregone. This asymmetry in institutional accountability means that, even where individual planners are aware of food-security trade-offs, the formal incentive structure of urban development agencies does not reward farmland protection.

8. Policy Recommendations

The following seven recommendation clusters translate the evidence above into actionable policy instruments. Each is intended to be implementable within existing Pakistani institutional structures, while drawing on internationally tested models of farmland protection and food-security governance.

Recommendations are prioritized below by realistic implementation timeframe, following the short-term / medium-term / long-term structure suggested in peer review, so that provincial authorities can sequence action rather than treat all seven clusters as equally urgent.

Table 3. Policy recommendations prioritized by implementation timeframe

Timeframe	Recommendation Cluster	Primary Action
Short-Term (0–12 months)	8.2 Land Governance Reforms	Integrate satellite land-cover monitoring into the digital land registry
	8.3 Food Security Safeguards	Require food-security impact assessment before conversion approval
Medium-Term (1–3 years)	8.1 Agricultural Land Protection Policies	Designate binding agricultural zoning around major cities
	8.4 Rural Livelihood Protection	Extend compensation to tenant cultivators and sharecroppers
	8.5 Maternal and Child Nutrition Policies	Target nutrition-sensitive programs using land-record data
Long-Term (3+ years)	7.6 Sustainable Urban Planning	Adopt urban-growth-boundary and anti-speculation instruments
	7.7 Research and Monitoring Priorities	Establish standing longitudinal land-use and food-security monitoring

8.1 Agricultural Land Protection Policies (Medium-Term)

Why is it needed? Provinces currently lack a binding national or provincial agricultural zoning framework comparable to the prime-farmland protections used in jurisdictions such as the United States' Farmland Protection Policy Act, which directs public agencies to account for farmland impacts before approving conversion-enabling projects.

How can it be implemented? Punjab and other provincial governments should designate irrigated, high-fertility soils particularly canal-command areas around cities such as Faisalabad, Lahore, and Multan as protected agricultural zones in which non-agricultural development requires explicit provincial cabinet approval rather than routine municipal sign-off, mirroring transfer-of-development-rights and urban-growth-boundary instruments used to separate growth areas from protected farmland in comparative practice (Farmland Information Center, 2024).

Expected outcomes: A binding zoning floor would convert today's after-the-fact judicial interventions into an upfront legal barrier, reducing the volume of conversion that currently proceeds simply because no enforceable prohibition exists at the point of sale.

8.2 Land Governance Reforms (Short-Term)

Why it is needed: The Faisalabad survey found that conversion proceeds through thousands of small, undocumented household transactions that escape conventional monitoring; this is precisely the kind of cumulative change that satellite-based remote-sensing monitoring is well suited to detect, but Punjab's land governance system does not yet use remote sensing as a standing, automated component of land-record administration.

How it can be implemented: Provincial land record authorities should integrate satellite-based land-cover change detection directly into the digital land-record (registry) system, with automatic flags raised whenever a parcel registered as agricultural undergoes physical land-use change, triggering a compliance review before any subsequent transfer or commercial registration is permitted.

Expected outcomes: Transparent, continuously updated land-use monitoring would close the detection gap that currently allows fragmented, incremental conversion to accumulate into large-scale farmland loss undetected, consistent with international calls for stronger land governance to safeguard agricultural productivity (FAO, 2025a).

8.3 Food Security Safeguards (Short-Term)

Why it is needed: No mechanism currently requires an assessment of food-security impact before a large block of irrigated farmland is approved for conversion, despite the clear, quantifiable effect of cumulative conversion on local food security documented both in this study area and in comparable cases such as Bakalan Village, Indonesia, where a measured land conversion rate of roughly 50 percent in a single year was directly linked to deteriorating household food-security indicators (Novianty et al., 2025).

How it can be implemented: Provincial planning departments should require a mandatory food-security and agricultural-productivity impact assessment, analogous to an environmental impact assessment, for any proposed housing or commercial development exceeding a defined threshold of agricultural land area, with public disclosure of projected production loss and proposed mitigation.

Expected outcomes: Decision-makers and the public would gain visibility into the food-production cost of specific development proposals before approval, shifting the burden of proof toward developers to demonstrate that conversion is justified, and creating a documented basis for designating strategic agricultural land reserves around major cities that are exempted from future conversion approval.

8.4 Rural Livelihood Protection (Medium-Term)

Why is it needed? The survey's finding that more than 90 percent of households regretted selling land, despite short-term liquidity relief, indicates that current land transactions do not adequately compensate sellers for the long-run loss of livelihood, particularly among tenant farmers and sharecroppers who, lacking formal title, frequently receive no compensation at all when land they cultivate is sold by the landowner (Saqib et al., 2025).

How can it be implemented? Compensation frameworks attached to land-use change approvals should be extended explicitly to registered tenant cultivators and sharecroppers, not solely titleholders, and should include livelihood-transition support, vocational training, microcredit for non-farm enterprise, and priority access to alternative agricultural land where available, rather than a one-time cash payment alone.

Expected outcomes: Extending protection to the cultivating, not merely the owning, class of rural households would address the segment of the rural population shown by Pakistan-specific research to be most acutely harmed by conversion and least able to recover from it (Saqib et al., 2025).

8.5 Maternal and Child Nutrition Policies (Medium-Term)

Why is it needed? The strong perceived deterioration in food adequacy and dietary quality reported by Faisalabad households following land conversion, combined with global evidence that minimum dietary diversity remains unmet for two-thirds of children aged 6–23 months, indicates that nutrition-sensitive interventions are needed precisely in the communities undergoing farmland loss (FAO et al., 2025).

How can it be implemented? District health and agriculture departments should jointly target nutrition-sensitive agriculture programs, homestead vegetable and dairy production support, behavior-change communication for women of reproductive age, and conditional food-support transfers, at households documented to have lost agricultural land in the preceding five years, using the land-record system itself as the targeting mechanism. Evidence from nutrition-sensitive agricultural interventions elsewhere shows that video-based and participatory-learning approaches focused on women of reproductive age and mothers of young children can measurably raise minimum dietary diversity at moderate cost (Haghighparast-Bidgoli et al., 2022).

Expected outcomes: Linking nutrition programming to land-record data on recent conversion would allow scarce nutrition-sensitive resources to be directed toward the households most likely to have experienced an abrupt loss of dietary diversity, rather than spread uniformly across rural populations regardless of exposure.

8.6 Sustainable Urban Planning (Long-Term)

Why is it needed? Much of the housing development consuming Faisalabad and Lahore's farmland is, by the Punjab government's own assessment, only partially occupied years after construction, indicating that current expansion substantially overshoots genuine housing demand and is driven by land speculation rather than settlement need (Pakistan Observer, 2025).

How can it be implemented? Provincial governments should adopt smart-growth and urban-growth-boundary instruments that direct new development toward already-converted, underutilized, or lower-fertility land before any further agricultural land is released for development, and should apply holding-cost levies (such as a vacant-plot tax) to discourage indefinite speculative land-banking inside approved housing societies.

Expected outcomes: Redirecting development toward already-disturbed or lower-value land, and discouraging speculative vacancy, would slow the rate of new farmland consumption without constraining the actual supply of housing available to genuine buyers.

8.7 Research and Monitoring Priorities (Long-Term)

Why is it needed? This brief's evidence base, like much of the available literature, relies on a single cross-sectional household survey; tracking the food-security and nutrition consequences of farmland conversion over time, and at a scale larger than four villages, requires sustained longitudinal monitoring that does not currently exist for Punjab's peri-urban districts.

How can it be implemented? A standing land-use-change and food-security monitoring program should be established, combining annual remote-sensing assessment of agricultural land-cover change (building on the Urban Unit's existing methodology) with periodic household panel surveys in high-conversion districts, tracking dietary diversity, household income composition, and migration outcomes over a minimum five-year horizon.

Expected outcomes: Longitudinal data of this kind would allow policymakers to move from the descriptive, cross-sectional evidence available today to a causal understanding of how quickly, and through which specific channels, farmland conversion translates into food-security and nutrition harm, strengthening the evidentiary basis for any future zoning, compensation, or nutrition-targeting reform.

9. Conclusion

Agricultural land is a strategic national resource, not merely a private commodity to be allocated to whichever use yields the highest short-run price. The evidence from Faisalabad, distress-driven sales, near-total absence of regulatory awareness, high rates of post-sale regret, and strong perceived declines in food adequacy and dietary quality, together with corroborating evidence from Lahore, Multan, and comparable peri-urban cases in China, Indonesia, and Ethiopia, demonstrates that uncontrolled farmland conversion is not a peripheral planning issue but a direct threat to food security, rural livelihoods, and the nutritional wellbeing of women and children. Effective land governance, binding agricultural zoning, transparent and continuously monitored land-use records, mandatory food-security impact assessment, livelihood protection extended to tenant cultivators, nutrition-sensitive targeting of affected households, and smart urban growth management, is a prerequisite, not an optional complement, to long-term food-system resilience. Protecting Pakistan's remaining prime farmland is therefore inseparable from protecting the livelihoods of the rural households who work it, the nutrition of the children who depend on it, and the food security of the nation it ultimately feeds.

References

- Aabø, E., & Kring, T. (2012). The political economy of large-scale agricultural land acquisitions: Implications for food security and livelihoods/employment creation in rural Mozambique (African Human Development Report Working Paper 2012-004). United Nations Development Programme.
- Besley, T. (1995). Property rights and investment incentives: Theory and evidence from Ghana. *Journal of Political Economy*, 103(5), 903–937. <https://doi.org/10.1086/262008>
- Cotula, L., Oya, C., Codjoe, E. A., Eid, A., Kakraba-Ampah, M., Keeley, J., Kidewa, A. L., Makwarimba, M., Seide, W. M., Nasha, W. O., Asare, R. O., & Rizzo, M. (2014). Testing claims about large land deals in Africa: Findings from a multi-country study. *The Journal of Development Studies*, 50(7), 903–925. <https://doi.org/10.1080/00220388.2014.901501>
- Davis, K. F., D'Odorico, P., & Rulli, M. C. (2014). Land grabbing: A preliminary quantification of economic impacts on rural livelihoods. *Population and Environment*, 36(2), 180–192. <https://doi.org/10.1007/s11111-014-0215-2>
- Deininger, K., & Byerlee, D. (2011). Rising global interest in farmland: Can it yield sustainable and equitable benefits? (Policy Research Working Paper 5588). World Bank. <https://doi.org/10.1596/1813-9450-5588>
- Deininger, K., & Byerlee, D. (2012). The rise of large farms in land-abundant countries: Do they have a future? *World Development*, 40(4), 701–714. <https://doi.org/10.1016/j.worlddev.2011.04.030>
- De Schutter, O. (2011). How not to think of land-grabbing: Three critiques of large-scale investments in farmland. *The Journal of Peasant Studies*, 38(2), 249–279. <https://doi.org/10.1080/03066150.2011.559008>
- Edelman, M., Oya, C., & Borras, S. M., Jr. (2013). Global land grabs: Historical processes, theoretical and methodological implications and current trajectories. *Third World Quarterly*, 34(9), 1517–1531. <https://doi.org/10.1080/01436597.2013.850190>
- Tufa, D. E. & Megento, T. L. (2022). Conversion of farmland to non-agricultural land uses in peri-urban areas of Addis Ababa Metropolitan city, Central Ethiopia. *GeoJournal*, 87(6), 5101–5115. <https://doi.org/10.1007/s10708-021-10553-9>
- Farmland Information Center. (2024). Farmland protection policies and programs. American Farmland Trust. <https://farmlandinfo.org/policy-makers-professionals/farmland-protection-policies-and-programs/>
- FAO. (2025a). The State of Food and Agriculture 2025 – Addressing land degradation across landholding scales. Food and Agriculture Organization of the United Nations. <https://doi.org/10.4060/cd7067en>
- FAO, IFAD, UNCF, WFP, & WHO. (2025). The State of Food Security and Nutrition in the World 2025: Addressing high food price inflation for food security and nutrition. Food and Agriculture Organization of the United Nations. <https://doi.org/10.4060/cd6008en>
- Gill, A. & Shabir, M. 2026. Public Perceptions of Local Government in Pakistan: A Survey-Based Assessment. *Journal of Agricultural Policy and Transformation*, 2(2):79-86. <https://doi.org/10.66529/agripat.2026.2.2.77>
- Godfray, H. C. J., Beddington, J. R., Crute, I. R., Haddad, L., Lawrence, D., Muir, J. F., Pretty, J., Robinson, S., Thomas, S. M., & Toulmin, C. (2010). Food security: The challenge of feeding 9 billion people. *Science*, 327(5967), 812–818. <https://doi.org/10.1126/science.1185383>

- Haghparast-Bidgoli, H., Harris-Fry, H., Kumar, A., Pradhan, R., Mishra, N. K., Padhan, S., Ojha, A. K., Mishra, S. N., Fivian, E., James, P., Ferguson, S., Krishnan, S., O'Hearn, M., Palmer, T., Koniz-Booher, P., Danton, H., Minovi, S., Mohanty, S., Rath, S., . . . Kadiyala, S. (2022). Economic evaluation of nutrition-sensitive agricultural interventions to increase maternal and child dietary diversity and nutritional status in rural Odisha, India. *The Journal of Nutrition*, 152(11), 2611–2622. <https://doi.org/10.1093/jn/nxac132>
- Hanley-Cook, G. T., van der Meulen, E., Pries, A. M., Gie, S. M., Aburto, N. J., & Holmes, B. A. (2025). Concordance of dietary diversity and moderation among 28,787 mother–child dyads in 11 low- and middle-income countries: Implications for global monitoring and targeted nutrition actions. *Maternal & Child Nutrition*, 22(1), e70081. <https://doi.org/10.1111/mcn.70081>
- Hausermann, H., Ferring, D., Atosona, B., Mentz, G., Amankwah, R., Chang, A., Hartfield, K., Effah, E., Asuamah, G. Y., Mansell, C., & Sastri, N. (2018). Land-grabbing, land-use transformation and social differentiation: Deconstructing "small-scale" in Ghana's recent gold rush. *World Development*, 108, 103–114. <https://doi.org/10.1016/j.worlddev.2018.03.014>
- Heinrich-Böll-Stiftung. (2022). Housing projects killing farmland. <https://afpak.boell.org/en/2022/08/18/housing-projects-killing-farmland>
- Li, M., Li, J., Haq, S. ul, & Nadeem, M. (2024). Agriculture land use transformation: A threat to sustainable food production systems, rural food security, and farmer well-being? *PLOS ONE*, 19(1), e0296332. <https://doi.org/10.1371/journal.pone.0296332>
- Lok Sujag. (2023). Illegal housing societies: TMA-LDA wrangling makes life of lower-middle class homeowners miserable. <https://loksujag.com/story/illegal-housing-societies-in-lahore>
- Moghaddam, S. M., Azadi, H., Sklenička, P., & Janečková, K. (2025). Impacts of land tenure security on the conversion of agricultural land to urban use. *Land Degradation & Development*, 36(7), 2517–2529. <https://doi.org/10.1002/ldr.5535>
- Novianty, P. C., Soemarno, & Efani, A. (2025). The measurement of land conversion rate and household food security in Bakalan Village, Pasuruan Regency. *Jurnal Pembangunan dan Alam Lestari*, 16(2), 82–88. <https://doi.org/10.21776/ub.jp.al.2025.016.02.02>
- Pakistan Observer. (2025, March 1). Urban expansion & loss of fertile land. <https://pakobserver.net/urban-expansion-loss-of-fertile-land/>
- Pakistan Today. (2024, March 21). Use of agriculture land for commercial purposes irks Supreme Court. <https://www.pakistantoday.com.pk/2024/03/21/use-of-agriculture-land-for-commercial-purposes-irks-supreme-court/>
- Pakistan Today. (2024, April 9). Concerns grow as housing development threatens Punjab's agricultural heartland. <https://www.pakistantoday.com.pk/2024/04/09/concerns-grow-as-housing-development-threatens-punjab-agricultural-heartland>
- Saqib, S. E., Kaleem, M., Yaseen, M., Yang, S.-H., & Visetnoi, S. (2024). From green fields to housing societies: Unraveling the mysteries behind agricultural land conversion in Pakistan. *Land Use Policy*, 144, 107256. <https://doi.org/10.1016/j.landusepol.2024.107256>
- Saqib, S. E., Yaseen, M., Ali, S., & Visetnoi, S. (2025). Agricultural land conversion and challenges for tenant farmers: Empirical evidence from Pakistan. *Land Degradation & Development*, 36(3), 802–815. <https://doi.org/10.1002/ldr.5395>
- Scoones, I. (1998). Sustainable rural livelihoods: A framework for analysis (IDS Working Paper 72). Institute of Development Studies.
- Smith, H. E., Ryan, C. M., Vollmer, F., Woollen, E., Keane, A., Fisher, J. A., Baumert, S., Grundy, I. M., Carvalho, M., Lisboa, S. N., Luz, A. C., Zorrilla-Miras, P., Patenaude, G., Ribeiro, N., Artur, L., & Mahamane, M. (2019). Impacts of land use intensification on human wellbeing: Evidence from rural Mozambique. *Global Environmental Change*, 59, 101976. <https://doi.org/10.1016/j.gloenvcha.2019.101976>
- Sumbo, D. K., Anane, G. K., & Inkoom, D. K. B. (2023). 'Peri-urbanisation and loss of arable land': Indigenes' farmland access challenges and adaptation strategies in Kumasi and Wa, Ghana. *Land Use Policy*, 126, 106534. <https://doi.org/10.1016/j.landusepol.2022.106534>