



# REVITALISING AGRICULTURE: ROAD TO GREEN REVOLUTION

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The agricultural sector is constantly in the spotlight, attracting attention from all corners. Despite various efforts, diverse initiatives, talks of agricultural revolutions, and the emergence of concepts like Green Revolution 2.0, there's a noticeable lack of sincere attempts to understand the sector's deep-rooted challenges that hinder its full potential. Superficial discourse has overshadowed deeper introspection into the fundamental issues plaguing agriculture. Investigating these complexities is crucial to unlocking the sector's full capacity and promoting sustainable growth.

## AGRICULTURE CENSUS

The first and foremost emphasis should be on updating the census data, specifically the agriculture and livestock census. A whimsical outcome is unavoidable when all the planning is based on data that is almost 14 years old for agriculture and 18 years old for livestock. We are developing and recommending strategies to assist farmers, but are unsure of which specific number to emphasise. Based on these data points, we intend to revolutionise the agricultural sector: a recipe for disaster. This problem of transparency also undermines the accuracy of growth figures and sectoral dynamics.

Developed countries such as the US and Japan conduct their agricultural censuses every five years. Even India has so far conducted 11 agricultural and 20 livestock censuses, which have a weighty impact on its agriculture sector. Echoes of a new agricultural census are now being heard in Pakistan, and if this initiative materialises, its efficacy could be greatly enhanced by shifting its approach from being based on traditional administrative boundaries to agro-ecological zones. Such a move would undoubtedly aid in addressing the consequences of

climate change.

A census should also be prioritised and carefully conducted every five or ten years, as it is crucial for research and development, resource allocation, policy formulation, monitoring, and evaluation, without which the agricultural sector will continue to suffer. If this fails to happen, all dreams about a second 'Green Revolution' are mere fantasies based on outdated figures.

## PRODUCTIVITY

Pakistan holds a prominent position in global agriculture, often ranking among the top ten producers in several crops. However, productivity levels lag considerably behind. For example, despite being the 7th largest wheat producer globally, Pakistan ranks 62nd in productivity. Similarly, in rice production, it is placed 13th but ranks 54th in productivity<sup>1</sup>, and so on. Despite maize competitiveness, there is substantial scope for improvement. If we can lift our average production up to the level of progressive farmers, only five major crops could add Rs. 1.76 trillion in the economy. These figures represent lost potential, owing to productivity issues. Low productivity basically stems from issues related to current land dynamics, problems with input markets (specifically seeds and fertilizers), distortions in output markets like wheat support price, insufficient and inadequate storage facilities, lack of business opportunities with respect to food processing and second-hand mechanisation.

<sup>1</sup><https://pide.org.pk/research/evaluation-of-seed-industry-way-forward/>

## FRAGMENTED LAND

Pakistan's agricultural landscape is characterised by small and fragmented land holdings. The average landholding size is relatively small, making it challenging for farmers to adopt modern farming techniques, mechanisation, and efficient resource management. As a result, productivity remains low, and the sector's growth potential is largely untapped. To harness its full potential, Pakistan must consider Agricultural Land Consolidation (ALC) as a strategic, long-term solution.<sup>2</sup>

ALC is a land management procedure which entails restructuring, reorganisation or redistribution of land holdings by reducing the number of plots or parcels to create larger, more efficient, and more logically shaped land holdings. The legal provisions for this are present and suggest promising advantages, presenting a compelling argument for adopting ALC in Pakistan. This shift would establish the groundwork for a more prosperous and sustainable agricultural future. Such a transformation would not only benefit farmers but also play a crucial role in enhancing food security, promoting rural development, and contributing to overall economic growth. However, there have been no substantial efforts made towards implementing ALC in Pakistan.<sup>3</sup>

## INPUT MARKETS

In the realm of input markets, seeds play a pivotal role. A concerning observation is that despite a diverse range of varieties and increased production of certified seeds, only 37 percent of the required seeds is certified for all the crops.<sup>4</sup> The entire industry is beset with numerous challenges. Firstly, the current regulatory processes of seed certification and variety approval involve multiple government departments, causing delays and hindering growth. Over-regulation has deterred private sector investment in research and development (R&D), as brand reputation outweighs government certification. The private sector is reluctant to share germplasm with government authorities for approval due to conflicts of interest and lengthy approval procedures. Consequently, some companies release varieties without official approval. Informal seed suppliers proliferate due to regulatory failures which result in low-quality seeds in the market, ultimately contributing to low agricultural productivity. Hence, there is a pressing need to liberalise the seed sector from a centrally managed variety approval systems to a free market mechanism, where entry and exit are not impeded by restrictions. There is a need to abolish the stringent seed certification process to attract private sector investment. The role of FSC&RD should be to maintain records of registered firms only. The involvement of the public sector in the seed production business and price regulation must be eliminated.<sup>5</sup>

The Government of Pakistan allocates significant funds annually to input subsidies, such as fertilisers, seeds, etc. aiming to maintain low prices. However, the actual impact of subsidies on price reduction is minimal and ultimately proves to be an ineffective policy tool for price control. Primarily, these remain ineffective because they are reimbursement-based, which are not helpful for already cash constrained small farmers. About 64 percent (with less than 5 acres of land) of them fail to get benefits, and technical complexities in the procedures make matters even worse. Hence, there's a critical need to redesign the entire input subsidy model to better support small farmers.

The government's plan to support tube wells on solar energy is promising, particularly amidst soaring petroleum costs for farmers. However, without modern irrigation techniques, there is a risk of water wastage and overuse, exacerbating the already declining groundwater reserves. This necessitates fair water pricing for sustainable agriculture. The potential of current warrabandi<sup>6</sup> is about Rs. 13 to 19 billion even after the amended rates. Adequate water pricing could generate revenues of almost Rs. 800 billion for the government. A price on water will also lead to more sustainable and judicious use of the scarce resource in agriculture.

The land transfer regulations, dating back to pre-partition times, have seen minimal updates since the 1967 revision of the Revenue Act of 1887, failing to meet modern needs. Revising these outdated laws is crucial by integrating technology for automated procedures. Excessive local government involvement decrease land tax revenue due to undervaluation by patwaris. This has prompted a reevaluation of Land Transfer Fees and an elimination of the DC rate system. Land valuation should consider location, amenities, and other factors, using PLRA and satellite data. Simplifying transfer procedures, reducing intermediaries, and enhancing information exchange amongst stakeholders, including Revenue and Agriculture Departments and farmers, are vital for improving agricultural production and resolving land-related disputes.

## THE DILEMMA OF SUPPORT PRICES

In terms of output markets, the wheat support price system proves detrimental as it consumes a big share of the agricultural budget but fails to keep up with the population growth or demand for wheat, resulting in the need for wheat imports every year. Additionally, the government struggles to provide wheat to consumers at reasonable prices each year, thus failing on both policy objectives. Moreover, the support price advantages do not reach out to small-scale farmers. Wheat, a staple food providing 60 to 70 percent of caloric intake for a large population, is primarily grown for food security. 35-40 percent of produced wheat is used for home consumption, seeds, and animal feed.

<sup>2</sup><https://pide.org.pk/research/land-refroms-through-agricultural-land-consolidation/>

<sup>3</sup><https://pide.org.pk/research/agricultural-land-consolidation/>

<sup>4</sup>[https://www.finance.gov.pk/survey\\_2023.html](https://www.finance.gov.pk/survey_2023.html)

<sup>5</sup><https://pide.org.pk/research/evaluation-of-seed-industry-way-forward/>

<sup>6</sup>System of water rotation as per a schedule, used to determine water prices.



Large-scale farmers dominate production and sales, leaving small-scale farmers with minimal benefits. Large-scale farmers account for 79 percent of wheat production and sell 84 percent of it, while small-scale farmers produce 11 percent and are only able to sell 6.4 percent. The policy of supporting wheat has created a huge circular debt, and the burden of which on just the Punjab government is estimated to be about Rs. 680 billion. The government procured about 24 percent of wheat produced during 2023, but the total burden of this wheat procurement was about Rs. 233 billion exclusive of rental cost. Interest payments alone were about Rs. 89 billion. Furthermore, the support price system leads to a significant area under wheat cultivation, reducing the land available for more profitable competing crops. Therefore, immediate abolition of the wheat support price system is recommended, allowing market forces to dictate prices, as demonstrated by the case of maize crop.

## INSUFFICIENT AND NON-STANDARDISED STORAGE FACILITIES

Insufficient and non-standardised storage facilities in Pakistan lead to significant post-harvest losses for grains and perishable crops like fruits and vegetables due to spoilage, pests, and improper handling. Traditional warehouses lack proper ventilation and pest control, reducing the quality and quantity of stored grains. Additionally, the lack of cold storage facilities decreases the shelf life and market value of perishable goods. Pakistan cultivates a variety of fruits and vegetables year-round, but faces significant fruit wastage due to inadequate cold storage facilities, especially in KPK and Balochistan, where distances to storages are extensive – amounting to averages of 77 and 133 kilometers respectively.<sup>7</sup> A crucial aspect lies in standardising the existing cold storage units. Prioritising this aspect could save the losses of about USD 1.3 billion<sup>8</sup> and significantly amplify export earnings for the country.

## FOOD PROCESSING AND SMALL BUSINESS

Fostering the growth of regional agricultural enterprises is crucial for expanding our agricultural economy. However, budget allocations for subsidised loans to support these businesses is insufficient (PKR 5 billion, 2023-24)<sup>9</sup>, to effectively promote the development of new agricultural enterprises. Furthermore, the food processing sector has historically been overlooked, leading to significant challenges, particularly for commodities like vegetables and fruits with short shelf lives. There is a lack of awareness amongst farmers regarding the value addition potential of agricultural products, coupled with inadequate facilities in this regard. To address these issues, special attention is required to this sector to attract more investments. A five year tax exemption is granted to processing units, which is expected to generate earnings of around

Rs. 80 crores. To ensure the success of these units and realise the true export potential, it is recommended that loan acquisition align with international standards for their establishment. Furthermore, awareness campaigns and training programs should be implemented to enhance food safety practices and boost domestic exports.

## SECOND-HAND MECHANISATION:

For years, the agricultural sector has received support aimed at enhancing the efficiency and speed of the harvesting process. The government has taken steps to ease the financial burden by repealing taxes and fees on machinery, with particular emphasis on essential equipment like combine harvesters, seeders, planters, and dryers for rice harvesting. However, there's a significant limitation hindering the sector's true potential: the use of second-hand imported machinery. This practice not only compromises efficiency but also increases the risk of losses during harvesting. To address this issue, it is imperative to consider either restricting the importation of second-hand machinery or encouraging the importation of first-hand machinery or supporting the local industry in developing more efficient machinery options. This approach will not only enhance productivity but also contribute to the long-term sustainability of the agricultural sector.

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<sup>7</sup><https://www.pbs.gov.pk/content/mouza-census-2020>

<sup>8</sup><https://www.eurasiareview.com/08112022-pakistan-needs-food-grain-storage-facilities-oped/>

<sup>9</sup>[https://www.finance.gov.pk/budget/Budget\\_2023\\_24/Budget\\_in\\_Brief.pdf](https://www.finance.gov.pk/budget/Budget_2023_24/Budget_in_Brief.pdf)