

Agricultural decline in Pakistan and how to counter it

Outline

I. Introduction

- a. Hook
- b. Background
- c. Thesis statement: Pakistan's agricultural decline result from water mismanagement, climate stress, outdated technology, governance failures and weak markets, However targeted reforms includes; technological institutional, financial and climatic that can reverse the trend.

II Importance of Agriculture in Pakistan:

- 1) Contribution to GDP (23%)
- 2) Employment of nearly 40% of labour force.
- 3) Backbone of major industries; textile, sugar and dairy.
- 4) Role in rural livelihoods and poverty reduction.
- 5) Importance for food security and

III. Root causes of Agricultural Decline in Pakistan:

A. Structural Problems:

1) Outdated farming practices and low mechanisation.

2) Discouraging land investment.

B. Water crisis and management:

1) Overdependence on canal irrigation

2) Poor irrigation infrastructure.

C. Climate change and environmental stress:

1) Changing growing seasons and crop vulnerabilities.

2) Heatwaves, droughts and floods.

D. Technological Backwardness:

1) Low adaption of certified seeds.

2) Inadequate modern tools.

E. Governance and Policy failures:

1) Inconsistent pricing policies.

2) Weak agricultural institutions and outdated laws.

IV. How to Counter Agricultural Decline in Pakistan:

A. Policy and Institutional reforms:

- 1) Reform of land laws.
- 2) Regulation of groundwater use and proper water pricing.
- 3) Ensuring price stability.

B. Water management and Climate-Smart Agriculture:

- 1) Modern irrigation scheduling.

Reforestation and Salinity management

Early warning systems for floods.

C. Technological Modernisation:

Adoption of certified seeds and bio technology.

Encouraging private-sector agricultural innovation.

D. Financial Inclusion and Farmer Empowerment:

Expanding agricultural schemes.

Training programs for farmers.

Strengthening farmer cooperatives.

(V) Conclusion:

Agriculture has historically been the backbone of Pakistan's economy, employing a significant portion of the

population and ensuring national food security, however, ensuring despite its centrality, this vital sector has suffered severe decline due to structural, environmental and institutional failures. Pakistan was born as an agrarian state where over 80% of its early economy depended on farming. Today, it ironically imports wheat, sugar and cotton. This reversal shows not only lack of resources but a failure to manage them. The decline of agriculture poses serious economic, social and national security challenges.

"Pakistan, a country created by farmers now imports food." This decline in Pakistan is primarily the result of structural inefficiencies, water mismanagement, climate vulnerabilities, policy inconsistency, and technological backwardness; however, through comprehensive reforms including improved governance to climate-smart technologies - the sector can be revitalized and made globally competitive.

Agriculture contributes around 23% to Pakistan's GDP and employs almost 40% of the labour force,

It supports major industries such as textiles, sugar, and dairy. For rural populations, agriculture is not only the source of income but a core component of social stability. Thus, any decline in agricultural performance affects overall economic growth, export capacity, rural development, and poverty reduction.

One of the key driver of agricultural decline is the fragmentation of land holdings. Most farmers in Pakistan own less than 5 acres of land, making mechanisation and modern farming unfeasible. Land inheritance traditions further divide land among heirs, reducing productivity. Moreover traditional farming practices, low seed quality, and lack of crop diversification keep yields low. Without structural reform on the farm level, Pakistan cannot achieve sustainable productivity.

Pakistan is rapidly escalating toward becoming one of the world's most water-stressed countries, with its agricultural sector bearing the brunt of the crisis.

Agriculture is the biggest culprit in water consumption; utilising nearly 90% of available fresh water resources.

Furthermore, the unregulated and excessive groundwater extraction for tube wells, driven insufficient surface water, has led to a rapidly declining water table across much of the country, risking permanent resource depletion. This human-made crisis is intensified

by climate-change-induced hydrological uncertainty, including glacial melting and intense rainfall-patterns. The unreliable shortage of water, particularly during critical crop growth stages, existential threat to Pakistan's entire agricultural future, leading directly to the crop losses and competition between different farming communities.

Pakistan is consistently ranked among the top ten countries most-vulnerable to the adverse effects of climate change, a factor that highlights existing agricultural challenges. The increase in average

temperatures, catastrophic floods, unpredictable droughts, and the emergence of aggressive pest attacks are collective challenges for crop yields, livestock health, and farming infrastructure.

Furthermore, rapid deforestation and a severe loss of biodiversity

further reduce the productivity of agricultural land. Climate stress reduces viable growing seasons and threatens the survival of livestock

breeds. Without a comprehensive national strategy for climate adaptation and resilience-building, Pakistan's agriculture will remain unable to recover in future, increasingly severe climatic shocks, risking repeated national emergencies.

Modern global agriculture is fundamentally an innovation-driven enterprise, But in Pakistan the

national mechanisation rates

are critically low, especially among the vast population of smallholder farmers who cannot access or afford necessary equipment like modern

tractors, precision planter and automated harvesters. The utilisation of certified, high-quality seed remains inadequate. Furthermore, there is a problem of fertiliser imbalance. The lack of proper, scientific storage infrastructure is another huge source of loss, with post-harvest losses for grains, fruits, and vegetables commonly estimated at between 20% to 30%. In contrast, advanced agricultural nations boost yields through the widespread use of improved seeds, automated irrigation, drone technology and other climate-resilient-tools-technologies that Pakistan has yet to adopt at any meaningful scale, perpetuating its low productivity trap.

Agricultural decision making and sector management in Pakistan is disturbed by political interference, short-term policy fixes, and institutional flaws. The sector suffers from overwhelming elite.

bureaucratic hurdles that actively discourage much needed private sector investment in key areas like technology. Furthermore, essential institutions, such as agricultural research centres are under funded, poorly staffed, and largely disconnected from the practical need of the field. Procurement

systems favour large landowners while small farmers receive minimal benefits. The absence of long-term evidence-based policy planning mean the sector is reactive. Addressing these causes requires coordinated actions and strategies focused on sustainable resource management, technological adoption, and supportive government policies to ensure the revitalize the sector and food security.

Reviving Pakistan's Agriculture sector requires an integrated, holistic strategy that tackles deep-rooted structural issues. Key institutions and policy reforms must include:

those national Agricultural policy (NAP). that can take measurable long term goals over years. There must be Land reforms aimed at preventing further land fragmentation, potentially through legalizing and facilitating corporate and cooperative farming structures. Strict legislation must be passed regularise ground water extraction. Research institutes

must receive massive, targeted funding and to be mandated to promote genuine public-private partnerships for seed development. As system of transparent crop pricing policies driven by market dynamics must be introduced.

Rural farmer schemes must be scaled up, specially targeting small farmers with low-interest, easily accessible loans for input purchase and farm mechanisation.

Effective water management and the widespread adoption of Climate-smart Agriculture are two interdependent pillars for

Pakistan's agricultural crisis.

Given that the sector consumes approximately 90% of the nation's fresh water, the immediate priority is to improve water use efficiency, reducing to the 50-60% wastage in the current system.

This requires moving away from traditional, outdated flood irrigation to micro-irrigation techniques like drip and sprinkler systems. Climate smart Agriculture provides the necessary adaptive response to Pakistan's extreme climatic vulnerabilities, such as floods, drought and heatwaves. This integrated approach, linking efficient water use with resilient farming methods, making agriculture more profitable and secure for the future.

Technology is the essential tool. Pakistan needs to fix its old, struggling farming system and make it competitive globally. This mean using

drones, mobile apps and sensors to check soil health, water needs and potential diseases in real-time. This smart data helps farmers use the exact amount of water and fertilizers, which saves a lot of money and reduces waste. We also need to use better, stronger certified seeds, that can handle Pakistan's heat and droughts. Furthermore, getting modern machinery like efficient harvesters to small farmers through rental centres will make work faster and increase yields. By using these technologies, farming can become a modern and secure business. Smart farming, Better seeds, modern machines and stopping food waste are the key components to enhance the development of Agriculture Sector. Storage technologies should be reformed to store the grains and other agricultural commodities for a greater period of time. For this purpose, the success stories of the

Progressing nations should be followed.

Financial inclusion and Farmer empowerment are critical pillars in reversing the decline of Agriculture in Pakistan. Expanding agriculture-focused schemes and training programs ensure that smallholders and rural communities gain access to modern farming techniques, credit facilities and markets. Initiatives such as subsidized loans, crop insurance and programs to empower farmers to invest in high-yield seed, fertilizers and mechanized tools, which significantly enhance productivity. Moreover training programs that focus on sustainable practices, post harvest management, and value addition enable farmers to maximize profits while minimizing losses. Strengthening farmer cooperatives is equally important, as these organizations facilitate collective bargaining, reduce input costs, and improve access to storage and transport infrastructure. Marginalized groups

including women and landless labourers benefit from such cooperative skills development, participation in decision-making, and access to financial resources. By integrating financial inclusion with Education and

cooperative strengthening, the government and private sector can transform agriculture into a more resilient and profitable sector. These measures not only promote rural employment, but also contribute to national food security.

Overall, Agriculture remains the lifeline of Pakistan's economy, society and national identity, yet it stands in a poor condition due to decades of mismanagement, policy inconsistency, environmental stress, and structural weaknesses and have collectively erode its productivity and growth. The country's dependence on food imports, despite possessing one of the world's largest irrigation systems and vast fertile land, reflected a deep rooted systemic crisis that

threatens both economic stability and national food security. By adopting comprehensive reform agenda on long term policy continuity, institutional strengthening, water conservation, and the aggressive adoption of modern, climate resilient technologies, Pakistan can transform its agriculture sector into competitive and inclusive engine of growth. Ultimately reviving Agriculture is our national responsibility, essential for ensuring food sovereignty, reducing rural poverty, and securing a prosperous future for the coming generation of Pakistan.

"No nation can prosper without feeding its own people".