

Agricultural decline in Pakistan and how to counter it.

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a. Introduction + Thesis statement

b. Agricultural decline in Pakistan

1. Water shortage and mismanagement makes crop land barren which reduce crop yield.
 2. Technology and Research gaps keeps agricultural production stagnant.
 3. Monocrop culture affects cropland by reducing its fertility.
 4. Weak market linkages discourage farmers for agricultural practices.
 5. Vulnerability to climate change exacerbates structural weakness in agriculture sector.
 6. Governmental policy distortion push farmers towards inefficient crop patterns.
- c. Ways to counter agricultural decline in Pakistan

1. Transform flood irrigation system into drip irrigation or some high efficiency irrigation system.
2. Technology and Research-led modernization is crucial for competitive yield.
3. Promote crop diversification for high value production.

4. Expand agricultural market to encourage small-scale farmers.
5. Build climate resilient agriculture system and seeds of crops.
6. Reorientation of governmental policies for major crops of Pakistan.

D. Conclusion

Agriculture has long been the backbone of Pakistan's economy, contributing to food security, rural employment and industrial raw material. Yet over the past several decades, agriculture sector has experienced systemic decline. It is evident water scarcity and mismanagement of available water is major contributor to lower crop yield. The worsening water scarcity, inefficient market structures, and increasing climate vulnerabilities causing agricultural decline. Despite employing a large share of the labour force and sustaining key agro-based industries, the agriculture sector has failed to modernise and

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keep pace with regional competitors. This downward trajectory threatens national food security, rural livelihoods, and export competitiveness. Understanding the root cause of decline and revive the policies are essential for agricultural development and stability. Agricultural decline in Pakistan stems from structural weaknesses ranging from water shortage and mismanagement, technology and research gaps with less market linkages, ~~and~~ vulnerabilities to climate change and ~~some~~ ~~others~~. These can be counter by reform strategies that focused on water-efficient practices, technological upgrading, market restructuring, and climate resilient policies to restore productivity which ensures agricultural developments.

Water shortage and mismanagement makes cropland barren which reduces crop yield, a major cause of agricultural decline in Pakistan. Barren land cannot fulfil the requirements of better crop production as it has

low nourishing capacity due to less or no water supply. Agriculture practices mainly depends on Indus Basin irrigation system, now it has a very low delivery efficiency only about 36%. As per 2022 report of IRSA, Pakistan receives 10-15%.

less water in dry years. In 2022, early summer melt brought 30% lower flows in Indus and Jhelum, reducing irrigation supply. So, water shortage and mismanagement using flood irrigation at once causing dryness of land which is the major cause of agricultural decline in Pakistan.

In addition to this, technology and research gaps in agriculture sector are major contributor in agricultural decline in Pakistan. As Pakistan a developing country there is backwardness in use of technology and research based developments in agriculture sector. Still ~~majority~~ farming practices are carried out by old tools, which are less efficient and time consuming. Farmers are unaware of genetically modified

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seed plantation and use plain crops which produce less yield. It is evident that Pakistan spend approximately 0.16% of GDP on research and development as per 2023 report. Provincial research stations, PARC have limited operational and development budgets, constraining field trials, adaptation to local conditions but low seed breed development. Hence, technology and research decline playing major role in decline of Pakistan's agriculture:

Another major wrong practice in agriculture sector is monocrop culture that affects crop lands, reducing its fertility by washing out nutrients.

Repeatedly growing the same one or two crops on the same land harming the health of soil, reducing its long term productivity and ~~reducing~~ ^{contributing} to decline in agriculture. A recent 2025 study from Punjab compared different cropping systems - mixed cropping vs monocrop system - like rice-wheat, cotton-wheat etc. It found that diversified cropping had

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higher soil organic matter, better yield, and economic return than monocrop-based system. So, monocropping is the foremost cause of agriculture decline in Pakistan.

Transform ~~good~~ water management system from flood irrigation into drip, sprinkle or high efficiency irrigation system is crucial way to counter agricultural decline in Pakistan.

High efficiency irrigation method is water saving and wisely serving in which water is delivered slowly and directly to roots of plants. This can save 40-60% water compared to flood irrigation. As per 2024/2025, the Asian Development Bank (ADB) sanctioned a project to improve irrigation through high efficiency system such as, drip, sprinklers etc for water management because it improved delivery of water over $\approx 70,000$ hectares in southern Punjab. Hence, the water management system can be a gamechanger in reviving agricultural development in Pakistan.

Moreover, technology and research-led modernization is important for competitive yield to eradicate agricultural decline in Pakistan. Modern tools and crop (genetically modified) can enhance productivity. For example, according to recent assessment by International Atomic Energy Agency (IAEA) in cooperation with food and Agricultural Organization (FAO) explained that using nuclear-derived modern techniques improved fertilizer and water use efficiency. It will be a promising approach toward sustainable agriculture and food security in Pakistan.

To conclude, Agricultural decline in Pakistan is due to range of weaknesses in its structure and implementation includes scarcity of water and mismanagement, backwardness in technology, vulnerabilities to climate change and many more which can be counter by adopting structural reforms to enhance agricultural development in Pakistan. Shortage of water and its management can be shift to modern irrigation techniques.

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Technological advancement is necessary to counter the decline and maintenance of market supply chain can enhance development in agriculture sector. Reorientation of governmental policies are necessary to revive agriculture progress and building climate resilient structure can ~~or~~ counter agricultural decline in Pakistan.
