



Exploring Agricultural Progress: Uphill Paths Ahead

The superb arena for micro-capital investment, particularly in developing countries, lies within cultivated land holdings. Proportional demarcations with respect to unorganized farming versus formal/systemized inputs and outputs handling are of a higher degree, and AgriTech is also in its infancy. Greater decency is yet to be reaped into agricultural processes.

Underlying myths closely correlated with agricultural uphill battles would be a function of:

- B:** Bearing spending capacities.
- A:** Annualized buffers of consumable stocks.
- R:** Returns earned.
- R:** Reinvestment threshold.
- O:** Obligations carry forwards.
- N:** Net losses to be absorbed

Statistics enumerate the deep-rooted geographic dispersion of the agricultural sector in the country. The agricultural committee had demarked an agricultural credit target of Rs1.3 trillion for Pakistan's agriculture sector in FY20. Banks achieved a loan portfolio of Rs1.2 trillion against the given target. However, the agricultural borrower population had decreased to 3.74 million from 4.01 million at the close of FY20. The concentration of Pakistan's export agricultural products (textiles and allied commodities) overwhelms its imports of raw inputs for the edible food industry (palm oil,

soybeans, tea) coupled with raw cotton. The agricultural sector significantly contributes to the national economy, accounting for 18.9% of GDP and employing about 42.3% of the workforce. Rich crops such as wheat, cotton, and mangoes are particularly beneficial, with Pakistan being the world's fourth-largest producer in terms of volume.

Deployment Patterns: The trend of deploying innovative equipment for handling is increasingly shifting towards advanced mechanical engineering mechanisms, replacing basic manual methods. Limited outflow capabilities of niche mushroom leaseholders are a key contributing factor.

Facilitations in Place: Various sophisticated agricultural tools or devices can be envisioned to provide support in the following areas:

- C:** Colossal Designing.
- O:** Occasional utilization.
- S:** Support for recurring maintenance.
- T:** Total solutions and associated initial slower paybacks.

Geographical Dispersion: The potential for industrial agricultural expansion is promising locally, considering the significant agricultural holdings, leaseholdings, farmer slots, and to some extent, cultured farming. Pakistan's outstanding cumulative agricultural credit stood at Rs581 billion in June 2020 (FY19 - Rs562 billion - with a 3.3% increase).

Revenue Challenges: Agricultural revenues are primarily limited due to small-scale cultivation, vulnerability to natural environmental exposures, sudden pest outbreaks, and unfavorable weather conditions. Pakistan is also trailing behind Kingdom of Saudi Arabia (KSA) in tea imports (Rs 0.54 billion), which could be tapped as a potential area for export gap bridging. In the last 15 months alone, KSA's tea import bill amounted to SR1.3 billion.

Development Stagnancy

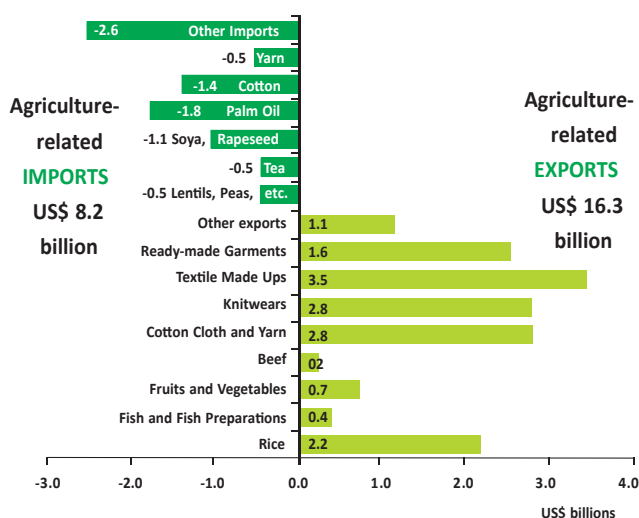
Industrial Barriers: The development of AgriTech may be hindered by the pace of local availability of seasoned inputs/outputs, scientific research and development, total quality logistics for chain management, infrastructural outlays, and innovative molds and designs for technology and systems.



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Net Food Importer

Pakistan's Agro, Food and Textile Trade (FY20)



Capital Shortage: The main area of concern for the rapid growth of agricultural innovation would be overcome through:

- A:** Arrangements through Takaful promotions.
- D:** Delivering inputs on extended credit facilities.
- E:** Equity joint ventures or micro-banking options with marginal costs.
- Q:** Quantitative bargains and commercial deals.
- U:** Universal sourcing channels through collective fundings.
- A:** Alternative markets for output easing.
- T:** Transition from manual to shared high-tech for increased efficacy in production.
- E:** Exchange management for better resourcefulness.

Islamic Banking has contributed tremendously towards extended agricultural facilitations, with Rs42.1 billion loaned in FY20 by a conglomerate of five Islamic banks. Further, Rs43.5 billion (FY20) allocated for agricultural products by Islamic windows of commercial banks.

Inflation Impact: Amongst the biggest hindrances to agricultural specialization are multiplying inflation factors, particularly in less developed economies. Unexpected hikes would lead to:

- Ever-increasing input costs and squeezed output revenues
- Stresses on fuels and hydropower channelization upwards
- Composite conversions subject to currency depressions
- Substantial increases in imported prices
- General purchasing parity depreciation
- Higher prices for green initiatives.

Replacement Strategies: Planned wear and tear with adequately budgeted refurbishments might be carried out conservatively. Organized and trained emporiums may need to be programmed at higher levels for sectoral growth and dimensional shaping.

Static Inputs: Inputs with rapidly growing potential for higher produce alternatives should be integrated into national planning, covering all four seasons. The factors constraining/hindering agricultural credit growth include the impact of Covid-19-like pandemics, locust attacks, and ongoing real-side issues such as water shortages, low cotton and sugarcane production, low fertilizer uptake, and price volatility in agricultural produce.

Impact of Climate Change: Pakistan's agricultural productivity may decline by 10% by 2040 due to climate change. Agricultural productivity in Pakistan is expected to decrease by 8-10% by 2040 due to global warming.

Upsurge

Cross-Border Robustness/Gap Bridging: Western economies have already embarked on sophistication in agricultural infrastructure alongside tech building and utilization. Gap tech may be depicted across the board, including:

- Artificial intelligence harvesting,
- Robotics for inventory trappings,

- Drones' tech systems for outputs management,
- Heavy machinery for robust supply chain transmission for agri-produces,
- Farming site development,
- Dedicated bio-botany approaches,
- Corporate edges over developing nations,
- Hydel, fossil fuels, electrical/solar resources replenishment. Government had earlier undertaken support measures, including relief packages for the farming community/agricultural businesses in downstream value chains.

Global Reconnect/Local Brook-Shields: Bringing together entrepreneurs from various continental levels could result in:

- Global conversions,
- Transmission of best practices,
- Tech reciprocation,
- Sharing of optimal resources,
- Branding/trademarking boosters,
- Quality spreads,
- International trades reapers,
- Global inflationary offsets,
- Transfer of skill sets.

Cordial Lumbers/Micro-Breeding: Basic measures and metrics are evidently crucial for assessing and optimizing sectoral performance. In agriculture, considerations would include:

- Increasing the marketing of produce over time,
- Efficient batching techniques leading to cost savings,
- Significant contributions to the national gross domestic product,
- The prevalence of small-scale setups,
- Adaptations to improve ease of operations.





Resources utilized for future disposals: It is worth noting the contributions made towards small-scale micro-lending by Microfinance banks (MFBs) of Rs139.3 billion and microfinance institutions/rural support programs of Rs28.9 billion, representing significant progress in this area.

In Western economies, traditional agricultural processes have been augmented with the emergence of Smart Farming.

These advancements are marked by:

- Self-driven tools,
- AI-powered robots,
- Combine harvesters,
- Security bots,
- Field sensors,
- Smart irrigation systems,
- Agricultural applications. [Automated Farming & Farming Applications, GPS, UAVs & satellite imaging.]

Food Security

There is an emerging need for determinants of food security due to compromised product handling, processing, lack of branding for raw foods, and bulk selling in cottage food outlets. High food price inflation is being experienced globally, with low and middle-income countries, as well as 86% of high-income countries, struggling to combat rising inflation factors.

Among Pakistan's top 5 imports, pharmaceutical products amounting to \$3.8 billion highlight the importance of effective food security to minimize excessive pharmaceutical expenditures and high illness rates.

Designated farming sites for secure handling of produce, reducing carbon impacts, ensuring clean environmental exposures, and implementing safe packaging and disposal/recycling of bio-impacts are crucial steps towards clean and green food security and environmental sustainability.

Supply chain enhancement is vital to address instances of quality compromise associated with poor supply and storage facilities. Total quality management (TQM) for food intake and industry would greatly assist in ensuring the recurrence of shelf lives for food consumption materials, exploring insulation alternatives, safeguarding needs-based consumption drives, and utilizing any remainders as residual fueling options at farming sites.

Adherence to protocols has been blended at provincial territorial levels in recent years, with the dilution of powers from the center. Reach and access channels are still in their initial phases, and adjustments may be necessary in far-reaching areas.

Standardization of food standards is essential, ranging from base to highly graded forms in accordance with international best practices. Local standards must be aligned with international assurances to optimize food industry rephrasing and availability of solutions.

Fintech and e-commerce initiatives have expanded food chain presences globally, with a focus on adherence to worldwide assurances and support for small-scale cottage industries.

Peru, hosting APEC in 2024, focuses on sustainable growth for resilient development and energy transition through decarbonization of economic activities. EU-funded research emphasizes nature conservation, biodiversity protection, resilient and green communities, zero pollution, circular management of resources, soil health, and sustainable food systems.

Yemen has aided over 7,000 farmers with training and equipment for modern farming techniques to improve productivity and conserve fuel and water, creating 47,500 additional jobs. Saudi Arabia has embarked on expanding dairy farming and model desert cultivation, sourcing cheaper energy to enhance the availability of cheaper bulk dairy and organic produce with modern tech adoption.

The EU's flagship policy to restore damaged nature may be jeopardized due to melting ice caps slowing Earth's rotation, coupled with an estimate of annual food waste worth \$1 trillion.

About the Author: The writer is currently associated with the Attock Refinery Limited [Attock Group] as Deputy Manager Finance and looking after the areas of Treasury Bills and Associates (Related Parties) for the last eleven year. He is a Fellow member of the Institute of Chartered Accountants of Pakistan.