

Agricultural Commodity Markets in Pakistan: Analysis of Issues

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EXECUTIVE SUMMARY

Agriculture markets in Pakistan are still primarily based on a colonial-era model and have not modernised with changing times. This has increased unnecessary costs in the supply chains that put growers and end-consumers at a disadvantage. Additionally, price and supply volatility causes insecurity for policy-makers as information about prices, supply and demand is not structured, timely or reliable.

For decades, agricultural markets have functioned without government focus on innovation. Recent initiatives from various federal and provincial agencies provide hope that this vital area can now finally be addressed. Numerous constraints need to be resolved to bring meaningful change to the ecosystem. The process must start with a fresh policy look and commitment to adopt modern themes. This policy process can be supported by technology and successful lessons from other countries as well as developments in other sectors within the country.

There is a need to develop a certain level of coordination between various federal and provincial agencies. The increasingly fragmented nature of agriculture markets might be useful for some stakeholders as they can innovate according to their needs but it leaves most of the sector at a continually suboptimal level. The lack of progress in modernising core markets has also made it difficult for some innovative solutions to succeed. A rapid assessment of the current environment, key constraints and recommendations for possible development areas is presented in this report.

1. INTRODUCTION AND BACKGROUND

This is a rapid study of wholesale agricultural markets in Pakistan to highlight key issues that require policy intervention. A short introduction to the historical background is followed by a discussion of the current state of agriculture markets. The next section will analyse issues and look at some possible solutions.

Some issues of agricultural marketing are well documented but often stop short of specific recommendations on the way forward. Often, the discussion is limited to exploitation by middlemen and the need to eliminate the role of intermediaries. This simplistic view fails to take into account the wider issues of political and market

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economy, historical development, absence of viable alternatives, policy blindness and the need to prepare for the changing supply chain dynamics of today's world.

This paper aims to get straight to the issues at heart and offer some suggestions for further policy research. Detailed information on historical and current developments in agriculture markets can be obtained from reference sources. The focus here is to provide an analysis of important constraints and issues that may not have been looked at holistically before.

1.1. Historical Development

Wholesale agricultural marketing in Pakistan has its roots in colonial-era laws dating from the 1920s. The Royal Commission on Agriculture recommended in 1928 the regulation of marketing practices and the establishment of regulated markets. It proposed regulation of trade practices and the establishment of markets in the countryside. The government of India prepared a Model Bill in 1938 and circulated it to all states. Punjab was the first in present-day Pakistan to enact the Agricultural Produce Markets Act in 1939. This act has been the foundation of agricultural marketing ever since then. It was replaced by the Punjab Agricultural Produce Markets Ordinance in 1978 and more recently by the Punjab Agricultural Marketing Regulatory Authority (PAMRA) Act 2018 (further amended in 2020). Despite the introduction of new laws, the fundamental operations of wholesale agriculture markets remain the same. The latest legislation does open up the space for modernisation and this will be discussed later but as of now the workings of these markets (mandis) remain based on a 100-year-old model.

Other provinces followed the example of Punjab and established similar regulatory environments for the marketing of agricultural produce. The erstwhile North West Frontier Province adopted the same Punjab law of 1939 for the regulation of its agricultural markets. The NWFP Assembly passed the Agricultural and Livestock Produce Markets Act in 2007 to replace the previous law. Due to resource constraints, the spread of public markets in Khyber Pakhtunkhwa has been limited with only two public markets operating in Peshawar and Dera Ismail Khan. Private markets stepped in to fulfil the growing production and demand needs of the province. In May 2021, the government promulgated the "Model Byelaws for Establishment and Regulation of Private Fruit and Vegetable Markets by Tehsil Municipal Administration or Tehsil Local Government, 2021" under the KP Local Government Act 2013 to bring private markets under regulatory ambit.

For decades, Sindh also followed the colonial-era agricultural marketing legislation of 1939. It was only in 2010 that under a USAID-funded project, The Sindh Wholesale Agricultural Produce Markets (Development and Regulation) Act was passed by the assembly to replace the 1939 Act. This act has many reforming and modernising aspects including encouragement of private markets. However, the lack of implementation through lack of rules has made it ineffective and the good intentions of a reformed regulatory design have not been achieved.

Balochistan also followed the 1939 Act till 1991 when it passed a new law, The Agriculture Produce Marketing Act 1991. This law also has a similar model as other provinces in terms of the setup of agricultural markets and needs reform based on changing needs and times.

As agriculture is a provincial subject under the constitution, each province pursues its own explicit or implied agricultural policies that include agricultural marketing. The scope of agricultural marketing is primarily concerned with the supply of fruits, vegetables, and grains for spot or immediate delivery of commodities. Another element of commodity markets is in the form of futures markets where delivery is at some date in the future. A futures contract is a type of derivative instrument and is regulated like the securities market by federal laws under the jurisdiction of the Securities and Exchange Commission of Pakistan. Pakistan Mercantile Exchange was established in 2007 under the Securities and Exchange Ordinance 1969 and has the mandate to provide futures trading in approved commodities including agricultural products. The governing legislation for futures trading was changed to Futures Market Act 2016 but SECP remains the regulator of commodity futures trading.

The implications of these different sets of legislation for the pricing and supply of agricultural produce and development needs will be discussed later in the report, but it is important to understand at this stage that the regulatory setup for agricultural commodity pricing is fragmented and is an additional challenge on top of other technical issues that will be discussed next.

1.2. Current Setup

As mentioned above, the general model of agriculture markets in Pakistan remains the same. There are some differences between provinces due to recent legislation but the core functioning model remains the same. This includes the concept of a physical marketplace, managed by a market committee, relying on commission agents acting as middlemen, with auctioning as the price discovery mechanism. For such a system to act as an efficient market, all the constituent components need to be functioning efficiently as well. While this requirement is understood at a theoretical level, its practice has left many issues unresolved and generated new ones as well. However, this should not detract from the fact that wholesale agricultural markets are the mainstay of food supply and make it possible to put food on the table for millions every day. Between about 8 million farmers and 220 million citizens of the country, wholesale markets are the funnel that channels produce to consumers and processors. New supply channels like contract farming, direct marketing and e-commerce are growing, but as of today, their percentage is very small compared to the role of mandis.

The supply chain based on wholesale agricultural produce markets can provide for the needs of a large and growing population daily. On this metric, the system may seem efficient and, in fact, its century-old setup is a testament to the strength of the model. An in-depth critical analysis will reveal various shortcomings of the system that have also lingered and grown over the decades. Some of these are well-documented and have been voiced by stakeholders regularly. The common refrain of exploitation by the middleman is the most aired complaint. While justified, there has been very little analytical explanation of the causes of this exploitation. We need to understand the historical developments before beginning to understand the issues at heart, partly because some of the ‘original sin’ problems are still unresolved.

Creation of Mandis. Ironically, the report of the Royal Commission on Agriculture in 1928 justified the need to establish physical marketplaces in the countryside to counter

the exploitation of the farmer which is still being mentioned as a major issue. Before the 1939 Act, a variety of private markets existed that collected and traded produce. Farmers were not direct participants in those markets given the lack of logistical infrastructure and connectivity between farms and markets. Farmers had no real option but to sell to local middlemen within their villages. Often, these middlemen were also moneylenders and this intertwined role continues to this day and will be discussed shortly. With poor access to market and information, farmers were never able to get a good price for their produce as more knowledgeable and downstream connected intermediaries and participants were able to capture most of the value.

Motivated by the desire to improve price realisation for farmers, the Royal Commission proposed the establishment of public markets in the countryside and the abolition of unregulated private markets. The prescribed design of these markets required a physical location managed by a neutral market committee which should have at least 50 percent representation of growers of the area. These measures were designed for farmers to bring produce to the market instead of selling it in the village. Additionally, auctioning was specified as the mode of price discovery with the hope that it would lead to a fairer price for growers.

For this goal to be achieved, a large number of markets had to be established in a province like Punjab which was a major production region. The government came up with a model that has been in practice for almost a century now. On one hand, it demonstrates perhaps the most successful execution of public-private partnership (PPP), but on the flip side, it also highlights the weakness in design and regulatory oversight that can lead to distortions and market failures. The PPP model enabled the government to establish a large number of markets throughout the province in a short time with minimal public expenditure. A typical transaction modality involved the government (through the Agriculture Department) acquiring 30-40 percent of the selected site with the balance being funded by private individuals (typically large landlords or middlemen). Private partners would, hence, acquire a freehold interest within the physical market area and would become permanent stakeholders with the impossibility of dislodging them.

Market Committees. All efficient markets require specialist intermediaries for smooth functioning. Even in today's technologically connected world, transactions require at least one intermediary. Similarly, the role of the key middleman (known as a commission agent) in wholesale agriculture produce markets was vital for the functioning of the market. The government achieved its goal of establishing a large number of public markets throughout Punjab with the prescribed structure of a market committee and auctioning. The market committees instituted for the management of these markets consisted of growers, consumers, market traders, and government officials. The market committee also had its own staff for regulatory purposes and for facilitating growers who brought their produce to the market. Government representation was mostly through the local administration, typically the District Commissioner.

These committees were supposed to be financially self-sustaining through the collection of transaction and licensing fees. The law also stipulated that a market committee is entitled to collect a market fee on all wholesale produce sold within a geographical notified area in which the actual market was located. This local monopoly on wholesale marketing for each market committee was supposed to provide a level-

playing field for all including those who did not bring their produce to the market but transacted outside. Market committees are also responsible for providing annual licences to commission agents that allow them to conduct business within the market premises and earn a commission on the value of produce auctioned on behalf of growers.

While the management structure of market committees was intended to support farmer representation, in effect it became a vehicle for political ambitions and was dominated by large landlords. Each market committee had a quasi-independent structure with its own bye-laws but overseen and regulated by the agriculture department. This oversight was never strong and over time became ineffectual. Often MCs would be used for local political purposes and many times these would be disbanded and be run by local district administration. In fact, a later amendment in law gave powers to the government to disband MCs at times of general elections.

Commission Agents. The desired objectives of achieving a fair marketplace required that the market committee be able to ensure compliance and enforcement of auction rules and other requirements. In reality, the most powerful group of stakeholders, commission agents, were able to use their pivotal position to their advantage. While the market fee was fixed in Rupees per quintal (100 kgs), commission agents were allowed to charge fees in percentage of the value of the produce auctioned. This difference meant that market committees were never profitable enough to invest in quality infrastructure, staff, and procedures. Due to the poor oversight capacity of market committees, commission agents were able to establish a strong foothold in determining the dynamics of agricultural produce markets.

With their knowledge and financial strength, commission agents are still the major actors in agricultural markets. Their position has remained unchallenged with no alternative channel able to compete. The main consequence of this dominant market role is the extreme hesitancy of any policy attempt to reform lest the disruptions to price and supply are unmanageable. This regulatory vacuum has allowed commission agents to capture a central position in the supply chain with some costs as well as benefits. On the positive side, there is an uninterrupted supply of produce to consumers every day, but on the negative side, there are questions about excessive costs extracted by intermediation that come out of the pockets of growers and end-consumers.

The financial strength of commission agents found a natural outlet in the form of a shadow banking system that is still the prime financier of agricultural production in the country. This informal, unregulated and largely undocumented agriculture lending provides credit to growers for crop inputs, both in kind and in cash. The clever way in which this credit provision can bypass laws against unauthorised lending results in a binding constraint on the efficient price discovery of markets. Most of the lending is in the form of agriculture inputs and the repayment is in the form of commission (along with other deductions based on exploitative practices) earned on the value of produce auctioned through the commission agent's shop in the market. In the absence of easy alternatives to agriculture inputs financing options, farmers are forced to borrow from commission agents. This loan contract binds farmers to sell their crops through the same commission agent. While farmers may view their borrowing as interest-free as no explicit terms are agreed upon, in reality, the implied cost can be very high when taking into account all commissions and deductions made by the agent.

During consultations, commission agents admitted that their business model is now of an investor in agricultural production. They do not see themselves as pure commission-based auctioneers. The financing of agricultural production requires large investments that are locked throughout the crop cycle and the return *on* this investment is through the commission and other deductions at the time of crop sale. The return *of* this investment is also through the leveraged value-addition of the crop. For example, if a 3-6 month horticulture crop requires PKR 100 in the form of inputs, the value of the harvested crop may be PKR 400. The commission deducted from the value of the harvested crop represents considerably high excess returns. Commission agents counter this statement against them by taking the plea that this return is balanced by taking considerable risk. This uncollateralised lending is exposed to many risk factors including crop failure or reduced production, and the borrower deciding to sell the crop through another agent or channel. Often the commission agent is also the financier to farmers for non-production related expenses that may include medical and family emergencies. The ease of accessing the commission agent for funds in times of need makes the middleman an important social support for farmers and the village community. This relationship continues over generations and it is very common for commission agents to keep accounts of rolled-over debts from previous generations.

During high commodity price seasons, commission agents are able to extract larger income which compensates for reduced income during lean periods. The charge of exploitation levied on commission agents has to be analysed in the context of weak regulatory oversight as well as the absence of viable alternative models of credit. Data on the annual growth of agriculture sector credit through banks is impressive but hides the fact that most of these loans cover the whole agriculture value chain and not just farm inputs. Technical requirements for formal bank credit disbursement are a disadvantage for farmers when compared to the relationship-based informality of commission agents. Commission agents and farmers have developed a symbiotic relationship which is considered a necessary evil in the absence of any better alternative. The intertwined dependence of marketing freedom on input credit is the biggest obstacle to the reform of agricultural markets.

Auctioning. The purpose of the auctioning model was to get the best price discovery. The principle of efficient price discovery requires a large number of buyers and sellers. A physical marketplace provides an opportunity to gather buyers and sellers in one place for better price discovery. While agriculture markets are busy with activity, a closer look will reveal that auctions are fragmented with commission agents conducting these at their own shops or using a central area. This fragmented nature of auctioning results in relatively few participants at each auction compared to whether these were consolidated or run by neutral market committee staff. The lack of investment in staff resources by market committees has resulted in poor capacity for performing the role of a neutral and trusted market operator. Necessity dictated that commission agents fill the void and conduct their own private auctions. They can hardly be blamed for capturing space for their self-interest. These markets are operating suboptimally as the market space is not being used for aggregation but for many small auctions taking place instead. The flip side to the potential price inefficiency argument is that a large number of auctions makes it possible to clear the market in a short time which is essential for perishable fruits and vegetables.

Many market participants will say that prices are fairly determined and that even with the fragmentation of auctions, participants have a fairly good idea of the day's price range. This information gathering is an individual exercise by each participant depending on his network, resources and connections. Knowledge about the day's price action in different locations is obtained through phones and is used to make decisions on immediate supply and destinations. This informal mechanism of information dissemination is also a symptom of weak market systems. As auctions are conducted privately by commission agents, real transaction information is not publicly available. This asymmetry of information further impacts the actions and rewards of participants with suboptimal price discovery. Policy knowledge about designing efficient market structures seems to be lacking as reliance has been on century-old practices and the trust that market participants will get the produce to its destination regardless of the cost extracted for intermediation.

Auctioning as a mode of transaction for agricultural produce is now only practised widely in South Asia. Most wholesale markets around the world rely on direct sales. These markets provide space for buyers and sellers to meet and negotiate directly. The market operating entity will provide services and facilities to attract buyers and sellers and ensure compliance with standard procedures and norms in return for a fee. Advanced countries have generally moved away from the concept of physical wholesale markets as private sector supply chains have taken over. Even though the role of wholesale markets has diminished in the developed world, there are some countries like France, Spain, and Italy where wholesale agricultural markets channel up to 50 percent of produce. These provide valuable lessons on how to modernise agricultural markets in the context of Pakistan's requirements.

Internationally, wholesale agricultural markets are not hugely profitable businesses. They are essentially fulfilling a utility role. This is also evident from the current state of markets in Pakistan though there is room for improvement in operational profitability. Given food security considerations, often governments support these markets in some way. Market design can range from completely government-owned and run markets to private markets. Often examples exist of public-private partnerships or government support in terms of land and logistical access.

Wholesale markets in Pakistan fall under the domain of provincial agriculture departments. As discussed above, this is due to the initial legislative design which was motivated by the need to improve access of growers to markets. However, agriculture departments were not the only government stakeholders. Local administration is part of the land acquisition process as well and is also represented on the Market Committee. With an increase in urban population, the need to look after the competing interests of consumers has increased the importance of agriculture supply chains. The institutional inefficiencies of agricultural markets also add to the costs paid by the end consumer, not to mention the price volatility and supply disruptions. In most countries, the responsibility of establishing agriculture markets rests with the local government to ensure food supply to the immediate population. As transport and communication connectivity is different now from earlier times, the legacy oversight of these markets in Pakistan needs to evolve as well to take into account the needs of the whole supply chain including end consumers.

Price volatility of essential agricultural produce is always a sensitive matter and the government is always in a reactive mode when prices escalate. Generally, rapid price escalation is considered a more politically sensitive issue as it affects consumers immediately and feeds into headline inflation. The government relies on Price Control Committees at the district administration level to cap retail profit margins. There is a range of profit margins, typically 10 percent but not more than 20 percent, that the government tries to enforce at the retail level. These prescribed retail prices are based on wholesale market prices that are not subject to any government intervention. As such, these are generally accepted as a fair representation of the immediate demand and supply conditions. Principles of efficient price discovery require non-interference by the government, but equally important is the need to ensure transparency of operations so that other distorting practices can be deterred. Given the poor capacity of the government to oversee market operations and the hold of commission agents, it cannot be assumed that price discovery from current markets is at its best. Still, in the absence of alternatives, current wholesale markets seem to price the produce fairly.

While the wholesale auction price may be acceptable to most stakeholders given the capacity of the system, additional costs added to and deducted from the price for upstream and downstream participants restrict the benefits to growers and end-consumers. These costs are due to a long list of reasons that also include issues of the production system itself. Lack of consistent quality and grading starts from seed and gets amplified throughout the production system. Harvest and post-harvest practices add further factors of variation to the quality of produce reaching the market. In the absence of a sector-wide information system, market prices react to the flow of information that is not structured and adds further uncertainty to demand and supply expectations.

Grading Standards. Despite operating for almost a century, wholesale markets in Pakistan have not shown any signs of innovation. There has been no move to introduce grading standards. Each market operates in isolation as far as development is concerned and the agriculture department's capacity has never been strong enough to envisage or lead any reform. Unless the marketplace devises a mechanism to encourage and reward better quality produce through better pricing, farmers will continue to mix their produce. Commission agents and market committee staff lay the burden of grading on farmers. The most suitable place for grading is indeed at the farm level but without any requirements from the market committee, farmers cannot be blamed for mixing. This is a clear failure of market committees and commission agents and symptomatic of the narrow focus of these actors. Failure to design and enforce quantifiable standards results in a loss of value for producers as well as other stakeholders in the rest of the chain.

The lack of specified standards for packaging is also due to similar reasons described above for grading. The same applies to the lack of any protocols on food safety, hygiene, and phytosanitary requirements. Agriculture departments have never considered the whole value chain in unison. Despite overseeing the whole agriculture production system through its research, water management, crop reporting, mechanisation, extension, and marketing directorates, there is little coordination within the agriculture department to improve various aspects of the supply chain that impact each other. Directorates continue to work in silos according to their initial terms of reference with little effort to take a holistic view. Due to a lack of unifying force, the

agriculture marketing directorate also continues to perform outdated routine operations with no evidence of any strategy to innovate.

PAMRA. International donors have been trying to assist the government for some time to reform agriculture marketing. A new law for agriculture marketing in Punjab was drafted with the assistance of USAID but it was never adopted. Under the World Bank's Strengthening Markets for Agriculture and Rural Transformation (SMART) results-based loan in Punjab, one of the targets was the adoption of a new agriculture marketing law that created a new regulatory authority. The Punjab Agricultural Marketing Regulatory Authority (PAMRA) Act of 2018 was further amended in 2020 to provide continuity for existing public markets while also opening space for new models of agriculture marketing. These new models include private-run markets, virtual markets, collection centres, model markets, contract farming, and direct farmer markets. Areas relating to grading standards and their enforcement are now also the mandate of PAMRA along with training and development of stakeholders. Additionally, the collection and dissemination of market data information is now also under the jurisdiction of PAMRA.

The formation of PAMRA is the first major reform attempt of agricultural marketing in decades. Even this reform was achieved to comply with one of the deliverables of the World Bank programme that required the government to enact a new law for agricultural marketing to receive a loan instalment. As the World Bank instalment clause only required the law to be enacted, the department did not actively follow up on establishing the new authority on sound footing. Till now, no budget has been allocated to PAMRA due to a delay in amending Punjab Government Rules of Business. The authority only has a chairman and a director general with no other staff. Support is currently being provided by the Marketing Directorate of the Agriculture Department. This is yet another example of the level of priority that the department places on reforming this area. At the same time, the government is firefighting price volatility by using powers to control retail profit margins. Without a strategic rethink of wholesale markets, such efforts cannot bring improvement.

The Agriculture Department is already facing capacity constraints in terms of manpower and expertise. A skeleton regulatory authority has further weakened the oversight as well as the development agenda. The setup of the authority is based on a typical but inefficient approach to incorporate many stakeholders with the result that authority membership is spread over *ex officio* members, elected politicians, and some private sector representatives. This too-broad representation of stakeholders on authority boards has shown to be a drag on dynamism, and the organisation loses its ability to develop and execute innovative ideas. Pakistan has a large number of good and bad examples of regulatory authorities and PAMRA's setup could have been better designed based on lessons from other successful regulators. Particularly, the Securities and Exchange Commission of Pakistan (SECP) is a good model to study. While the SECP may also have some organisational flaws, its experience in overseeing capital and commodity markets can guide PAMRA. Issues of regulating market intermediaries, improving investor protection, and striving for fair market practices are equally relevant to agricultural markets under PAMRA.

Establishing independent regulatory authorities is considered a preferred way to develop the confidence of stakeholders and better regulate sectors but it is also motivated

by the government's desire to reduce budgetary expenses. The model of independent regulators places certain onus on these authorities to become financially self-sustaining. This requirement to earn income through regulatory fees can conflict with the need to develop efficient markets. One criterion of efficient markets is low transaction fees. Ideally, transaction fees should be low enough to not impact the decision of market participants to transact. As discussed above, current market fees are too low as these are based on a small historical base. Currently, in Punjab, this fee is PKR 2 per quintal (i.e., 100 Kgs). In comparison, commission agents are allowed to base their fees on a percentage of value. In a desire to correct this low level of market fee and to raise funds for its desired business plan, PAMRA has proposed a market fee of 0.5 percent of value. The level of this fee has not been justified on the transaction cost criterion and, instead, seems to be motivated by the future budgetary requirements of the authority. While the authority is rightly focussed on improving the infrastructure and operations of existing markets, the concept of financing this plan through high fees from participants (under the new proposed rules, buyers will be liable to pay this fee instead of sellers) is difficult to justify. This is one reason, in addition to self-interest, for the strong opposition from commission agents with the result that PAMRA has not been able to implement new market rules.

The government established a new authority without preparing a financial plan for it or providing initial finances. The law requires PAMRA to develop and oversee new areas of agriculture marketing which is a welcome change. Without adequate funding, the seriousness of the department becomes questionable. New areas of oversight require in-house capacity development of technical and specialised expertise. The current setup, on the other hand, is a step backwards and does not indicate improvements in agriculture supply chains.

In an interesting policy change, PAMRA has embarked on an aggressive strategy of issuing licences to new private markets. Since 2021, the regulator has approved over 200 new private market licences. While this is a very positive approach to encourage private sector markets, it comes at the same time when PAMRA has very limited internal HR and system capacity. There is evidence that due to limited resources, PAMRA is being forced to take shortcuts in giving approvals to these new markets when compared with its regulations. This is another example of a good measure being marred due to the typical ineffective regulatory oversight. The number of private market licenses is now the same as the number of public markets in Punjab. While the number of markets has an almost fifty-fifty divide, these new markets are still of small size and the bulk of produce is still handled by public markets. However, with time, private markets will grow and play a much bigger role in supply chains. The risk is that the currently weak regulatory oversight at the time of licencing has created a gap and given capacity issues, these gaps will soon become difficult to close by PAMRA.

PAMRA has also not taken any lead in using this opportunity to encourage better operational and design practices. The same old design and operations of public markets are being replicated by these new private sector operators. An opportunity to modernise through private sector encouragement is being lost and soon it will be too late to rectify. The private sector will replace much of the public markets but without any improvement to the issues already plaguing the sector. In fact, there is evidence that these private

markets are even worse in terms of infrastructure, organisation, operations and facilities when compared to public mandis. Out of over 200 private markets, there are only a handful of progressive operators who have the vision to develop modern marketing channels. Most other private market owners and developers are pursuing a short-term real estate play under which a PAMRA license can increase the value of the agricultural land by reclassifying the market area as commercial. As urban expansion grows, even these new markets will be encroached. Private market developers admit that their markets may only be viable for a maximum of 8-10 years. After that time, the incentive to sell the land at higher prices and close the market will be more attractive than continued operations. PAMRA and PAD need to address this developing issue now and have a policy to counter it. Without a proactive approach, long-term improvement of agriculture supply chains may remain a dream.

Market Data. Current operations of wholesale markets are devoid of any modern technology. Data on transactions and activity is still recorded on paper and is largely for fee collection purposes. A walk-through of all Lahore markets revealed that each market varies in its data collection and recording methods since there is no standard requirement from the agriculture department on how market committees should keep records. The basic data being reported is related to total market fee collection without any detailed source information. Information on average auction prices is based on sampling. There is no system to electronically capture and record price and volume information of every transaction that takes place in a market. As these auctions are effectively private affairs, individual books of commission agents contain detailed accounts. There has never been any requirement from the government that commission agents report their activity. Significant information on market activity is not captured and, consequently, policymakers are not aware of the true state of activity in markets. The absence of timely and accurate data leads to a misdiagnosis of the supply and demand situation and can lead to inappropriate policy decisions. The recent initiative in Punjab to digitise market activity data is an important initiative but a closer study reveals that instead of replacing paper-based recording, an additional layer is added on top whereby the same staff re-enters the data electronically. The digitalisation of operations can only bring benefits if accompanied by the reengineering of processes and retraining of personnel.

Other Provinces. For many decades, all provinces followed the original 1939 Act for agriculture produce markets. In 2018, Punjab adopted a new act which continues with the existing model but opens up space for other types of marketing channels to be established as well. Punjab has the most extensive network of mandis and these have been almost entirely public markets till very recently. Other provinces did not develop such extensive reach. This was due to a lack of demand, finances, or other technical issues related to geography.

The Khyber Pakhtunkhwa government managed to develop only two large public markets and the rest of the needs of the province were met by unregulated private markets. These private markets are the main channels for agricultural produce in the province and the new rules under local government laws are now designed to bring these private markets into the regulatory ambit. The provincial government is not considering public sector expansion of wholesale markets and considers the private sector as the main actor. It is also interesting that the responsibility for regulating private sector agriculture

markets has been placed under local government along with the agriculture department which remains the overseer for the two public markets.

Balochistan has only two wholesale markets of which Quetta is the largest. With a low population and demand within the province, most of the produce goes to wholesale markets in other provinces. Due to large distances, collection and aggregation of produce from farm-gate by private service providers is a well-established practice and shows how it is feasible without farmers having to bring their produce individually to the marketplace. The current draft work on a new agricultural policy for Balochistan recommends the adoption of a similar new law as PAMRA in Punjab. Based on the earlier discussion, it would be prudent to learn from Punjab's issues and alter the design for Balochistan accordingly.

Sindh was the first province to enact a modernising act to replace the colonial era legislation. This act was designed to modernise market committees and corporatise their structure. Private markets were also envisaged under the act, but the rules and regulations required to implement the new act were never prepared. This has left agricultural markets in Sindh in a state of regulatory vacuum. The positive effect of this regulatory vacuum is the development of new supply chains that procure directly from farm-gate. As the needs of the population and growers cannot wait for regulatory reawakening, market forces have continued to innovate. The lack of regulatory clarity has allowed market participants to develop their own channels suited to their needs. In a way, this is a sign of the maturity of agriculture supply chains but, on the other hand, it also means that there is less information and data for policymaking. Many farmers and consumers may benefit from direct marketing channels but other weaker participants risk losing out. Government support in terms of oversight of supply chains and standards may still be needed to assist the large majority of growers not able to market produce directly.

PMEX. Agriculture is a provincial subject. The 18th Constitutional Amendment brought some further devolution but agricultural markets were always under provincial domain. These markets are spot markets as produce is delivered, auctioned, and taken away the same day. Spot markets are the basic underlying transaction channels by which physical commodities change hands. Buyers and sellers agree to exchange goods for a price determined and paid on the spot. This involves price risk for both parties as commodity prices at the time of the transaction can change significantly later on. To manage this price risk, futures markets provide a platform.

Motivated by the need to provide participants with a mechanism to hedge price risk, the National Commodity Exchange, later renamed as Pakistan Mercantile Exchange (PMEX), became operational in 2007. Futures are derivative contracts as they depend on the underlying spot commodity. Being a contract for buying or selling something at a future date at a price agreed today, they are classified as securities. Securities trading is a federal subject and the Securities and Exchange Commission of Pakistan (SECP) is the regulator for the PMEX. The exchange was initially licenced under the Securities and Exchange Ordinance 1969 which was later replaced by the Futures Market Act 2016. Over the years, the PMEX has grown considerably in terms of trading volumes in currency, precious metals, stock indices, and crude oil futures contracts. During the same time, the exchange also listed contracts based on domestic agriculture commodities but none of these have managed to become successful in terms of trading activity.

There are several reasons for the lack of success of agriculture futures on the PMEX. From the start, the exchange was undercapitalised. Attracting business in internationally established leveraged trading contracts on financial assets required little effort as similar expertise existed in the unregulated futures brokerage houses. Development of similar products based on domestically produced agricultural commodities needed more resources. Resources are needed to invest in marketing, training, awareness and the necessary infrastructure network required for handling physical commodities. A considerable amount of time was wasted in permissions from SECP which ate into the already small capital base of the exchange. SECP, being a capital markets regulator, itself did not possess the required in-house skillsets to understand commodity futures with full confidence. This led to a lack of leadership and support for the new area of commodity futures trading that was new to Pakistan.

The PMEX also suffered from the lack of coordination between federal and provincial authorities. A proactive approach by the federal government could have involved provinces and their agriculture departments in pursuing a common strategy that would have improved the functioning of agriculture markets. Again, the SECP's focus on capital markets left it ill-prepared to develop agricultural futures. There has been an element of deliberate hesitancy to work on agricultural matters lest the provinces take it as an encroachment on their domain. This untested view has deterred the development of a consensus national strategy to develop agriculture markets.

To make agriculture futures trading successful, studying the experiences of other countries is useful. The most relevant example is of India and an important lesson is the creation of separate spot exchanges by futures exchanges as well as state-level commodity exchanges. For futures trading to be successful, a certain level of efficiency in spot markets is a prerequisite. The PMEX is an all-electronic exchange and this model contrasts with the already discussed archaic nature of operations of mandis. A similar situation existed in India that forced the commodity futures exchanges to establish their spot trading exchanges. Those exchanges had issues related to internal design but they were able to demonstrate an alternative to wholesale markets. Any attempt or dialogue by the PMEX on a similar approach has not been encouraged by the SECP. This is partly because the jurisdiction for spot markets lies with provinces. But for the PMEX to even apply to a province for establishing a market, it needs a green light from the SECP. The SECP has not encouraged the PMEX to take this route even if done through a separate entity. Again, the regulator is relying on a strict interpretation of the licence of the PMEX to only conduct futures trading. If the PMEX wants to invest in spot market operations to make a success of commodity futures trading, it should be allowed to do this. Detachment from the agriculture sector at the SECP also plays a role in the regulator's lack of willingness to allow innovation.

The recently promulgated PAMRA Act creates a space for the first time for new models of spot markets to be registered. This should provide the basis for a fresh look from the SECP and the PMEX to bridge the gulf between spot markets and futures markets. Any new initiative must involve provinces to have cooperation and coordination something that has been missing till now. Discussions with stakeholders have raised the issue of the 18th Constitutional Amendment as a hurdle to agriculture sector development. An analytical assessment will reveal that this is used more as an excuse by stakeholders as opposed to a real obstacle. Agriculture was already a provincial subject before the amendment, especially

agriculture markets. The 18th Amendment does not restrict cooperation, coordination, and dialogue between provinces and federal agencies. While provinces are confined by geographical boundaries, agricultural produce is grown, transported, traded and consumed across the country. No attempt has been made by any government ministry, department or agency to develop a policy or strategy that focuses on the shortcomings of agricultural markets and associated downstream and upstream activities.

It has already been discussed that commission agents are the linchpin of the current agriculture supply chains. They are not only the financiers for growers but also provide credit to the buy-side wholesalers (called 'phairias') who disaggregate produce for retailers after the wholesale auction. Their production finance role also gives them a foothold in the inputs distribution chain of seed, fertiliser, and pesticide manufacturers. It is not possible to bypass them completely nor should a strategy be designed for that aim. They have long-standing relationships and an embedded knowledge base of the sector. A more intelligent approach should be to incentivise them to modernise with the benefit of increasing their business opportunities. Like other traditional sectors, commission agents are also faced with issues of continuity as their younger generation looks to other career opportunities. With their carry-forward receivables over years from the buy and sell side, they have no choice but to remain rooted in their business. This is also a drag on business expansion and innovation.

The current SECP regulations for brokers are a barrier for commission agents to become members of the PMEX. Being a capital markets regulator with no connection to agriculture, these rules have been framed from a financial markets approach. However, these do a disservice to the goal of developing agricultural commodity futures. There are innovative ways to admit commission agents into the SECP regulatory regime by relaxing some of the conditions that are more suited to financial sector institutions but not conducive to commodity and location-specific agriculture market intermediaries.

A similar approach should be explored by the SBP as well for bringing commission agents closer to the banking sector and perhaps becoming a conduit for bank financing to farmers. Commission agents also have capacity constraints in terms of liquidity and this is one of the reasons for the growth of microfinance as the growing needs of farmers are not fully met by the informal sector. Commission agents can be provided with liquidity to dispense onwards to farmers under a new agent model with banks. Due to this disconnect with banks, a considerable amount of liquidity to commission agents comes from private individuals placing investments with them. This is very similar to the "badla" investments offered by stockbrokers to their clients before stock market reforms by SECP. These realities need to be understood before innovative and out-of-box measures can be designed to improve financial inclusion in a sector that is economically crucial for the country. The alternative road to financial inclusion is going to be a long one as most of the current focus is on simple accounts for money transfers between individuals for consumption purposes.

The SBP and the SECP are jointly involved in developing the ecosystem for electronic warehouse receipt financing (eWRF). The concept of the eWRF is beneficial for the banking sector as well as established players in the agriculture value chain. For farmers to benefit from the eWRF, many constraints have to be overcome. Some of these are technical, some economic, and some regulatory. Just as commodity futures trading depends on spot markets, the eWRF also requires a certain efficiency in these markets. The behaviour of market and

credit intermediaries in agriculture markets also impacts the prospects of success of the eWRF. After all, eWRF is just another bank financing product in direct competition with informal lending by commission agents. The PMEX and Naymat Collateral Management Company (NMC) are also key actors of the eWRF system and they are also lobbying for the inclusion of commission agents into the regulatory ambit for this new concept to succeed. Warehouse receipt financing and commodity futures trading are higher-degree products. In a country where basic bank accounts are still not universally used, a jump to a higher degree of products risks failure or at least a long adoption time. Efforts need to be made in parallel on solutions to reform existing markets as other channels and products depend on the underlying agriculture supply chains. However, no such unified approach by policymakers has been seen so far. A task force led by the SBP was set up at the beginning of 2022 to look into issues of the eWRF. It does provide a broad-based platform with equally inclusive terms of reference. It will be interesting to see if the task force is able to identify the core issues affecting different parties and provide solutions as well.

The recent performance of the collateral management company suggests that undercapitalisation and too broad-based a shareholding has led to a disappointing start, very similar to the PMEX. Some private sector pilots on innovative storage solutions show good results. Under these examples, Islamic banks have more acceptability with farmers than traditional banks. These banks are offering loans to farmers under a collateralised storage model operated by third-party service providers. Development of these products by banks looks like a more viable path in the short term than the overly ambitious desire of regulators to impose an advanced electronic warehouse receipt issuance and trading ecosystem. Small individual steps need to be taken first before any realistic possibility of a large-scale integrated system can be contemplated.

Lastly, deficiencies in market information availability lead to deficiency and delays in policy responses. The recent volatility in prices and supply of agriculture commodities has highlighted the government's dilemma. Stale data collection and processing techniques of government departments have led to incorrect or delayed information for top-level policymakers. Decisions taken at the highest level as a consequence of wrong information were later proved to be misguided. Efficient markets are recognised as the best filter of demand and supply information, but current agricultural markets are so fragmented with no involvement of modern technology that they fail to perform this essential role. Government infrastructure is not designed to capture accurate and timely demand and supply information. This data is currently the private domain of a large number of independent market participants. The absence of strong market operating authorities and regulators has been the reason for this loss of information. Strengthening these markets with modern technology and reformed operations can also lead to better quality data on supply and demand for policymakers.

2. AGRICULTURAL MARKETS ANALYSIS

A description of key features of the current landscape of agriculture markets was presented in the previous section. It also covered emerging areas that offer some solutions but also have some issues of their own. A holistic policy approach to issues of agriculture markets has been missing in Pakistan. The need to reform agriculture markets is acknowledged in some government circles but there is no strategy with specific goals and targets or a vision for the long-term evolution of this area of the agriculture sector.

2.1. Key Issues and Possible Solutions

A tabulation of key issues and recommended solutions for agriculture markets are presented below.

Area	Issue	Possible Solutions
1 Legislation and Rules	Legislation in smaller provinces is either outdated or not supported by adequate rules. The amended act in Punjab currently does not represent a major shift.	Holistic review of provincial legislation with lessons on certain degree of harmonisation. Formulation of rules and regulations if missing or inadequate
2 Local Government	Wholesale markets are mainly the domain of agriculture departments to facilitate growers. This is not suited to the needs of urban populations.	Involvement of local government in developing wholesale markets from a demand-side perspective. This may lead to better production practices if there are market signals from the demand side. Possible reassessment and realignment of Agriculture Department mandate and focus on near-farm interventions rather than feeding urban populations.
3 Policy	National and provincial agriculture policies do not have details on agriculture marketing.	A clarification of long-term objectives for agriculture wholesale markets required from relevant authorities and agencies.
4 Private Sector	The private sector is either not involved or in some provinces operating without oversight.	Policy and laws to make private sector participation attractive and beneficial. A recent surge in approval of new private markets by PAMRA does not come with new models or standards. The same old model of public markets is being replicated by private markets with increased inefficiencies.
5 Certification and Training of Participants	Currently, no regulatory requirement to certify and train approved market intermediaries.	Structured training, certification and training of intermediaries will improve the quality and service of operations.
6 Regulatory Fees	Either too low for historical reasons or too high for new regulatory models	Should be set at levels that encourage market efficiency rather than a drag on activity.
7 Auctioning	Currently the dominant form of transaction in public markets. Not practised widely in the rest of the world now. Current auctioning in markets very is fragmented.	Equal patronage to other channels of supply; contract farming, direct farmer markets, e-commerce & B2B, processor and supermarket procurement, digital exchanges, remote participation, etc. Review of current auctioning operations to bring improved transparency.
8 Regulation of Cash and Non-cash lending	The shadow banking system is the driver of production but also a drag on it. It is unregulated and suboptimal.	Review of existing laws that are not enforced and formulation of new ones that seek to regulate inputs provision and financing to farmers.
9 Input provider registration	Commission agents also act as agents or provide access to inputs. There are variations in the quality of inputs provided and directly bind the borrowing farmer to his crop sale decisions.	A registered trail of inputs provision is one way to document farmer dependency and subsequent marketing decisions.
10 Enforcement of transaction reporting	There is no legal requirement or enforcement on intermediaries to report transactions. Price, volume, source and counterparty data in agriculture markets is only held privately by intermediaries.	A requirement to report market activity data by all intermediaries. Technology makes the solution easier now than in the past.
11 ICT adoption	All market operations are manual and paper-based. These are prone to error propagation and are not helpful for data capture.	All market transactions need to be digitally recorded using ICT technology. Market operations should be digitalised and remote participation made possible.
12 PAMRA Setup	The regulatory body's design and setup perpetuates existing agriculture department practices.	A review and lessons from other market regulators in the country may help improve the governing and operating structure of PAMRA for better impact.
13 PAMRA capacity	PAMRA has no HR capacity and funds for operations. Support from Agriculture Department staff continues the same inefficiencies.	A financially viable and self-sustaining model with budgetary support from the government will enable PAMRA to perform its role.
14 Grading Standards	There is an absence of quantifiable grading and quality standards at markets that encourage higher-value production by growers.	Regulatory prescription for designing and implementing cascading standards is needed to differentiate between various qualities that the market will price accordingly.
15 Packing Standards	No standard packing norms are enforced by markets that may improve quality and reduce losses	Specifications led by markets will be the catalyst for adoption by the rest of the chain.
16 Food Safety Standards	Markets have also failed to design, enforce and reward food safety and hygiene standards. Current markets operate in unhygienic conditions.	Market operators and regulators need to ensure the quality of markets and the produce coming into them is improved.
17 SECP	SECP is detached from the agriculture sector and yet has direct responsibility for some areas: WRF, PMEX, and Crop Insurance. Poor capacity at SECP for understanding the agriculture sector is a hurdle to the future growth of new ideas.	Investment in developing in-house capacity at SECP for commodity and agriculture sector. A policy commitment to play a more proactive leadership and coordination role is required in the case of agriculture-related areas.
18 Market Data	The collection and dissemination of market data are poor and inaccurate. This leads to misinterpretations and possible wrong policy decisions.	The current market data-gathering operations need review and reform to improve trust.
19 PMEX	Undercapitalised exchange has not been able to contribute to agriculture markets.	Commitment from shareholders and regulators is needed to pursue a coordinated approach to agri markets. A reformed policy approach is required to connect PMEX to spot markets.
20 Market Infrastructure	Poor infrastructure of current markets leads to loss of quality and produce with added costs.	Investment to modernise infrastructure, systems, and operations of existing markets.
21 Aggregation	The lack of near-farm aggregation places growers at a disadvantage in terms of bargaining power in the market.	The establishment of near-farm collection centres by independent service providers can improve the market bargaining power of farmers.
22 Coordination between provinces	All provinces follow different approaches but could benefit from coordination.	A forum for coordination and discussion on lessons from each other.

2.2. Way Forward and Next Steps

All of the issues identified above require detailed analysis and consultations to develop consensus on possible solutions. While the issues highlighted here are real, further in-depth research is needed for verification and comprehensive diagnostics. No specific policy research has been undertaken to develop a long-term holistic strategy for agriculture markets.

The modern role of agriculture supply chains is multidimensional. Pakistan needs to move forward from the first stage of agriculture markets at which it has been stuck for decades. Facilitation of growers was the main aim initially but there are equally important requirements for fulfilling the needs of agro-processing and end-consumers. With multiple and growing stakeholders, multiple channels of supply chains need to be encouraged. Experience from other countries shows how they managed to mature their supply chains and Pakistan needs to recognise similar expansion should be facilitated. Government interference and involvement should not cause an obstacle for the private sector. Government insecurity relating to price and supply volatility can be better handled by improved data collection and information dissemination on all supply chain activity. It is in this area that the regulatory philosophy needs to evolve where the government is acting as a facilitator instead of a direct operator. At the same time, provincial agriculture departments need to ditch the silo-based approach to agriculture. Agricultural marketing is still viewed with a very narrow lens focussed on the arrivals at a physical marketplace on a particular day. The modern approach requires policymakers to understand that markets are in a central position to drive innovation through their backward and forward linkages. If markets are not run like businesses vying for the satisfaction of buy and sell-side customers, they will remain basket-case examples of inefficient government-run operations.

After decades of following the same colonial laws, all four provinces are now starting on different approaches to agriculture markets. All these efforts are still evolving and already gaps can be identified. There is conceptual recognition of the need to adopt some reform themes but implementation strategies still seem missing or based on traditional approaches. While provinces are free to pursue their policies, there is also merit in coordination and learning from each other. Given the free movement of produce within the country, marketing practices in one province impact stakeholders in other provinces as well. Similarly, the agriculture produce supply chain will benefit from the leadership of federal ministries and agencies. The ritual excuse of the 18th Amendment as a hurdle should be replaced with a more inclusive approach that can lead to knowledge sharing and learning among all federating units.

No institutional initiative is underway to incorporate modern requirements of standards and food safety. International trade requires modern protocols to be followed for agricultural produce. Agriculture markets are best placed to develop and enforce protocols that are adopted by participants and improve the quality and value of produce. Lack of financial and technical capacity is a hurdle for implementing these reforms. Advances in technology now make it possible to remedy many operational weaknesses. Policymakers also seem oblivious to the need and method to bring about this change. Pakistan has become a country dependent on regulatory prescriptions for the adoption of new technology and practices. Within this scenario, it is incumbent on the government to start the process before the private sector can play its role in its adoption.

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