agribazaar

Agri-trading:

The digital opportunity

WHITEPAPER

Since the green revolution, India's per hectare productivity of staple crops wheat and rice has grown steadily. Data shows that the country's total crop production has more than doubled. Consequently, India has reinforced its position as a global agriculture powerhouse.

Unfortunately, the sectoral growth has not translated into farmer prosperity. As an agrarian country, India is home to 140 million farmers. Of these, 85% are small and marginal farmers. Over the last two decades, the real income of this section India has declined by ~30 percent. One of the main reasons is because the traditional agri-trading value chain is marred with inefficiencies. As a result of these ineptitudes, nearly USD 14 billion worth of food produced in India is wasted. The wastage leads to a colossal price gap in the value chain. Consequently, Indian farmers take home just 30 percent of the market price of their harvests.

Digital technologies can address the challenges facing the agriculture supply chain effectively while adding to its efficiencies. The mechanisms provide sellers with unparalleled transparency and unmediated market access. For buyers, digital platforms offer traceability of their purchases. Further, they harmonize quality standards and provide for quality testing infrastructure. By levying single-point fees for all stakeholders, online trading platforms contribute to pricing efficiency of the agriculture value chain. They also facilitate greater transparency in transactions and payments.

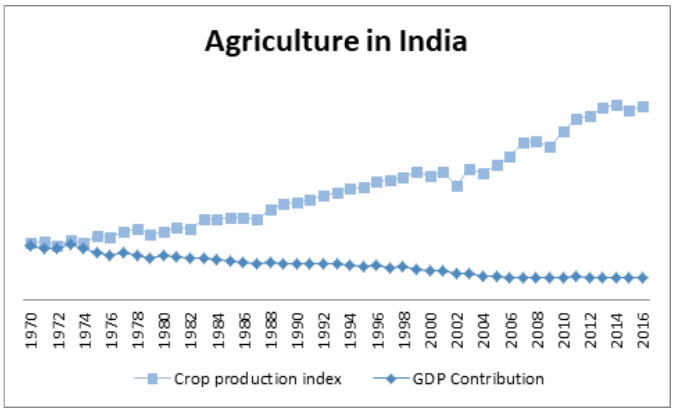
In this whitepaper, we explore the opportunities and benefits offered by the digitalization of India's agri-trading value chain.

Introduction

India is a global agriculture powerhouse. It is the world's largest producer of cotton, pulses, millet, cottonseed, and spices. Over the last decade, the country has emerged as a major exporter of staples such as rice and wheat, and is expected to remain important in each of these markets .

Unfortunately, the sectoral growth has not translated into farmer prosperity (refer chart: Agriculture in India). Over the last two decades, the real income of small and marginal farmers in India has declined by ~30 percent . One of the main reasons is because the traditional agri-trading value chain is marred with inefficiencies.

As a result of these ineptitudes, nearly USD 14 billion worth of food produced in India is wasted. The wastage leads to a colossal price gap in the value chain. Consequently, Indian farmers take home just 30 percent of the market price of their harvests . One way of translating the sectoral growth into tangible returns for farmers is by shortening the supply chain. The potential of India's agri-sector can be harnessed by building fast and seamless agri-trading systems. Digitalization holds great promise to make this happen.



Challenges of traditional agri-trading systems

Farmers in India face obstacles at every step of selling their harvest. Firstly, they have to counter a multi-level, complex network of intermediaries to sell their goods to consumers, the high cost of transporting harvests to distant markets compels them to depend on local moneylenders.

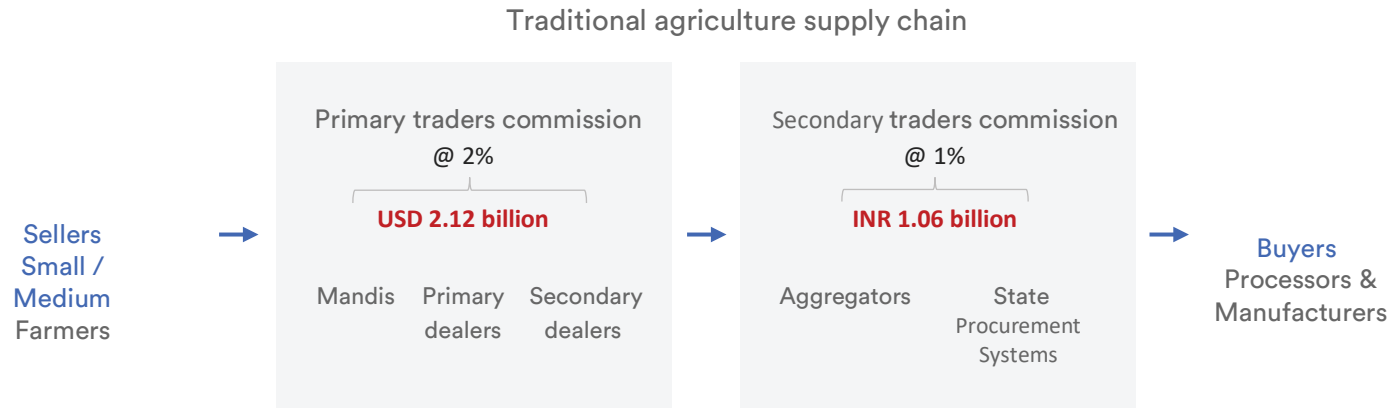
Further, the market prices in local mandis are controlled by trader cartels. The farmers themselves have little knowledge of price movements. The transaction systems lack transparency and are traditionally cash-oriented. In addition, the lack of inexpensive storage facilities leads to loss of harvests. All these factors lead to reduced earnings and increasing farmer distress.

Beyond farmers, lack of co-ordination of stakeholders across the agri-value chain, information asymmetry, lack of access to finance and infrastructure adversely affect the performance and productivity of the entire stakeholder ecosystem. Ensuring agri-trading efficiency is also critical to food security and the overall performance of the sector.

In this section, we explore some of the challenges posed by traditional value chains in greater detail

Inefficiencies leading to large-scale losses across the supply chain

Indian agri marketable surplus: USD 106 billion*



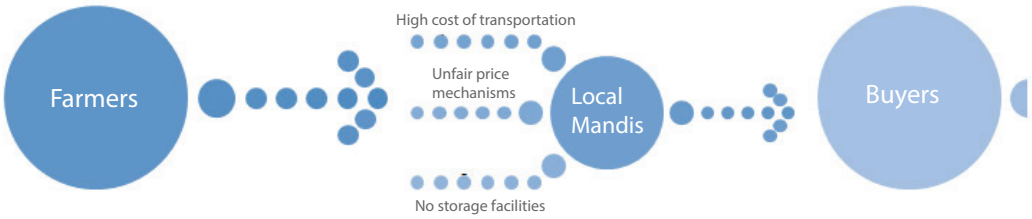
India's agri-marketable surplus is pegged at INR 106 billion. The realization of this potential largely depends on the proficiency of agri-supply chains. Unfortunately, the supply chain currently faces large-scale ineptitudes. Lack of real-time insights into buyers needs leads to excess production, falling prices and spoilage of unsold products. A World Bank study pegs post-harvest losses of food grains in India at 7-10 per cent of the total production from farm to market level and 4-5 percent at market and distribution levels .

The Ministry of Food Processing Industries (MFPI) estimates that 23 million tonnes of grain are lost due in the farm to field transitions . These factors contribute to increasing farmer distress. Additionally, the wastage compounds the challenge of food shortage.

Appropriation of benefits by intermediaries

In remote and poorly economically developed areas, farmers face obstacles at every step of selling their harvest. The high cost of transporting harvests to distant markets compels them to depend on local moneylenders. Further, the market prices in local mandis are controlled by trader cartels. The farmers themselves have little knowledge of price movements. Approximately 3 percent of the produce value transitioned to buyers successfully is distributed among a complex web of intermediaries. In addition, the lack of inexpensive storage facilities leads to loss of harvests. All these factors lead to reduced earnings and increasing farmer distress.

Catering to demand at scale



for agriculture produce is increasing in proportion to the needs of a growing population. Large-scale buyers such as food processing companies require products which are of consistent quality and assured quantity. Plus, as a risk mitigation strategy, they want to be able to trace their purchases from farm to their warehouses. Traditional approaches of vertical co-ordination and supply base integration are found to be wanting in many of these demand parameters.

The solution lies in digitalization of agri-trading

Digital technologies provide an unprecedented opportunity to reshape the industry by efficiently addressing these issues. They hold the potential to empower all the actors across the value chain and ensure better outcomes for their efforts and investments.

Increasing penetration of internet and connectivity facilitate co-ordination at scale and help reduce supply chain constraints. Further, by enabling direct linkages between buyers and sellers, they reduce the need for intermediaries. In the process, digital trading platform reduce the risk and wastage across the agri supply chain by aligning supply with demand. A shortened value chain leads to greater trust and transparency.

Digital technologies reduce constraints in trading for smallholder farmers.

In a study, researchers found that although digital platform prices of commodities closely tracked physical commodity auction prices, farmers obtained significantly higher prices on digital platforms. This is because when farmers trade digitally, they completely bypass intermediaries.

Also, the cost of engaging in trade in substantially lower than the traditional format. Further, by bringing together small farmers across geographic regions, digital platforms enable them to increase their bargaining power.

Reduced asymmetries of information

By connecting buyers and sellers in real-time settings, digital platforms significantly reduce the incidence of supply-demand mismatch. Digital intervention increases the co-ordination across agri value chain - leading to reduced uncertainty and better management. Further, online marketplaces defy the barriers of geographic isolation for farmers located in remote regions. These mechanisms effectively address the problem of information asymmetry between sellers and buyers

Fostering standards

The commodity trade is driven by standardization. To facilitate easier trading, policymakers have developed codes and devised certification for products. However, one of the major barriers to trading is the lack of awareness of these standards among smallholder farmers. Digital platforms can bridge the awareness gap effectively. Through in-built quality-check mechanisms, digital technologies also relieve smallholder farmers of the cost of proving compliance with these standards.

Value creation for buyers

Digitalization facilitates greater transparency and resilience of the value chain. Extensive standardization, which is key demand of large-scale buyers, can only be accomplished through institutionalization of supply.

Virtual marketplaces also improve planning and logistics for the buyers. Traceability of the source of harvests enables the prevention of illicit trade while assuring the integrity of produce. Further, virtual marketplaces enable stakeholders to adhere to multi-level compliance requirements across the value chain.

Access to allied agri-services

Online trading platforms facilitate access to agricultural extension and advisory services. For example, real-time updates about weather conditions or soil fertility levels can enable farmers to better plan their cultivation strategy.
On-demand training technologies boosts their knowledge and confidence to undertake a new approach to farming. These insights empower farmers to enhance the productivity of their land and resources. In turn, these strategies lead to greater quantity of production, better quality of produce and thus increase farmer incomes.

Datafication of agri sector

One of the core advantages of digitalized platforms is the datafication of the agri-sector. Datafication refers to the capacity to create quantified digital data in relation to agricultural assets and production processes, allowing them to be monitored, tracked, analysed and optimized . This on-farm data can be employed to customize and create services for farmers. It is particularly useful for input providers, research & development, and for agri-related financial services. It fosters better understanding and management of agricultural production processes, reduces uncertainty and increases co-ordination capacities.

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