

# AGRITECH



## The Global Agritech Snapshot

The agricultural economy is under pressure around the globe due to changing climate and population explosion especially in developing countries, and only exacerbated by the geopolitical tensions such as the Russia-Ukraine war which disrupted global supply chains of wheat. In such an environment, there is more need than ever to not only move towards sustainable growth but also to protect vulnerable communities.

Technology has the potential to achieve that goal by improving yields, predicting demand

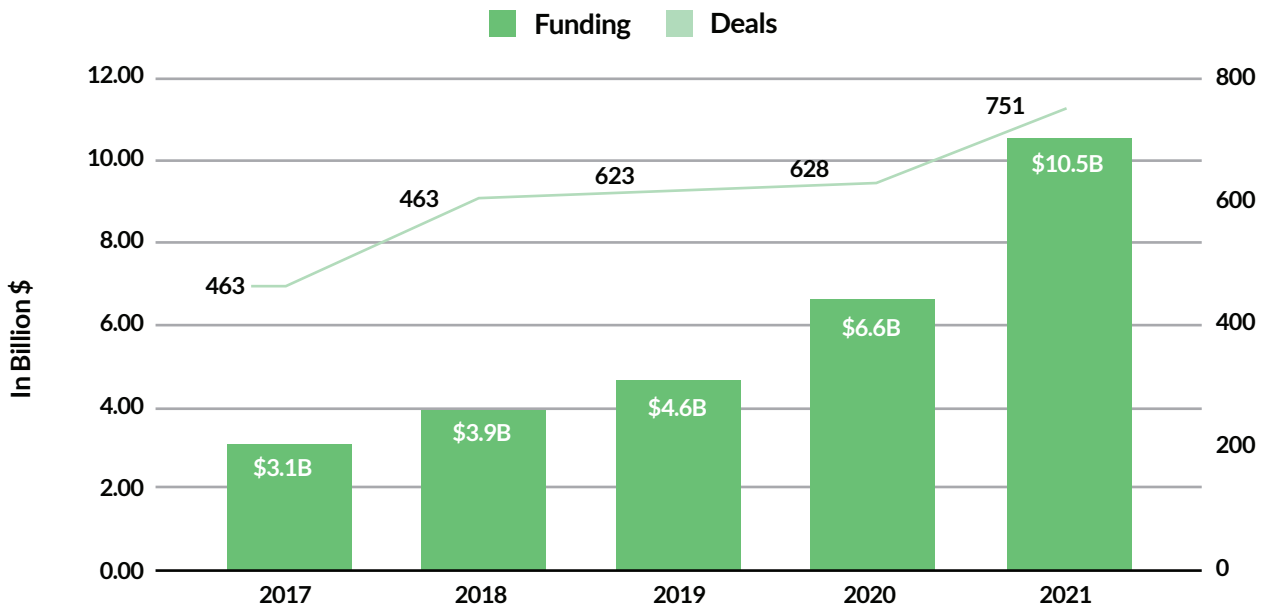
and supply, ensuring better monitoring among other use cases. That presents a massive opportunity for new entrants and incumbents alike to tap around 4% of the global GDP.<sup>1</sup>

Therefore, it should not be a surprise that investments in agritech have consistently increased since 2017, hitting \$10.5 billion across 751 deals in 2021. During the same year, exit activity also reached a record high of \$22.8 billion via 49 transactions, with the dollar value 10x higher than in 2020.



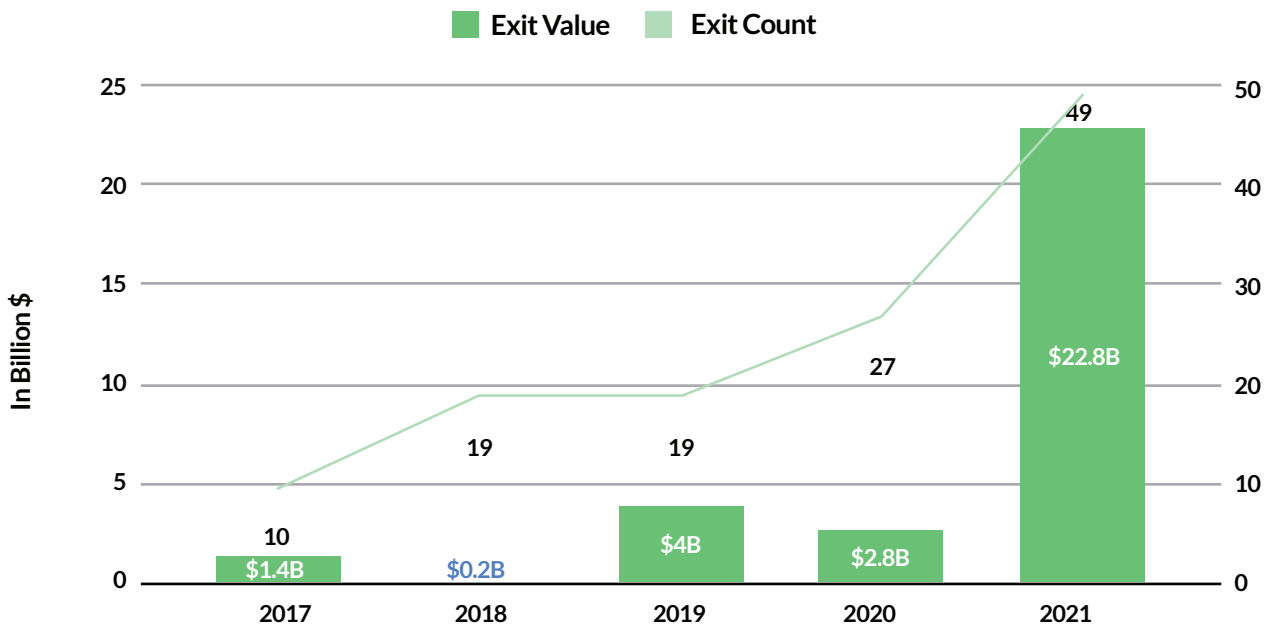
<sup>1</sup> <https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS>

## Global Agritech Funding Activity



Source: Pitchbook

## Global Agritech Exit Activity



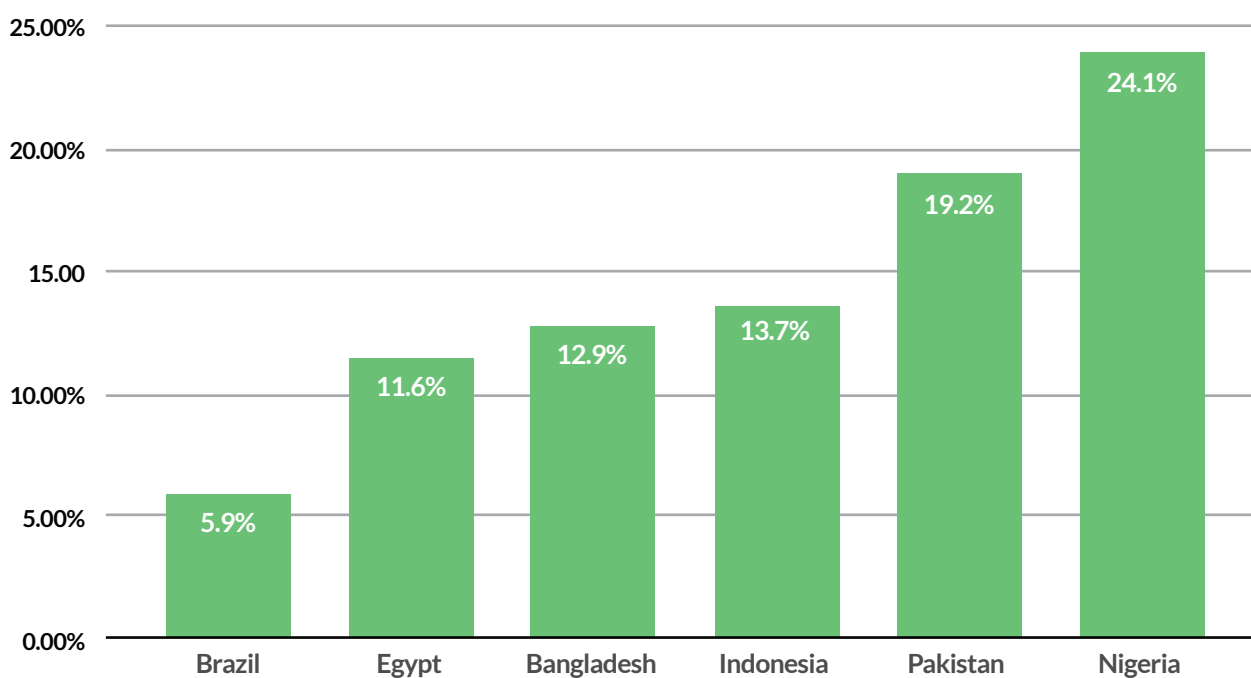
Source: Pitchbook

## Pakistan's Agriculture Sector Ripe for Disruption

Pakistan is a primarily agrarian economy with agriculture accounting for 19.2% of the GDP and 38.5% of the labor force while another 65-70% of the population depends

on the sector for its livelihood.<sup>2</sup> That makes it the most crucial engine of economic activity in the country.

Share of Agriculture in National GDP



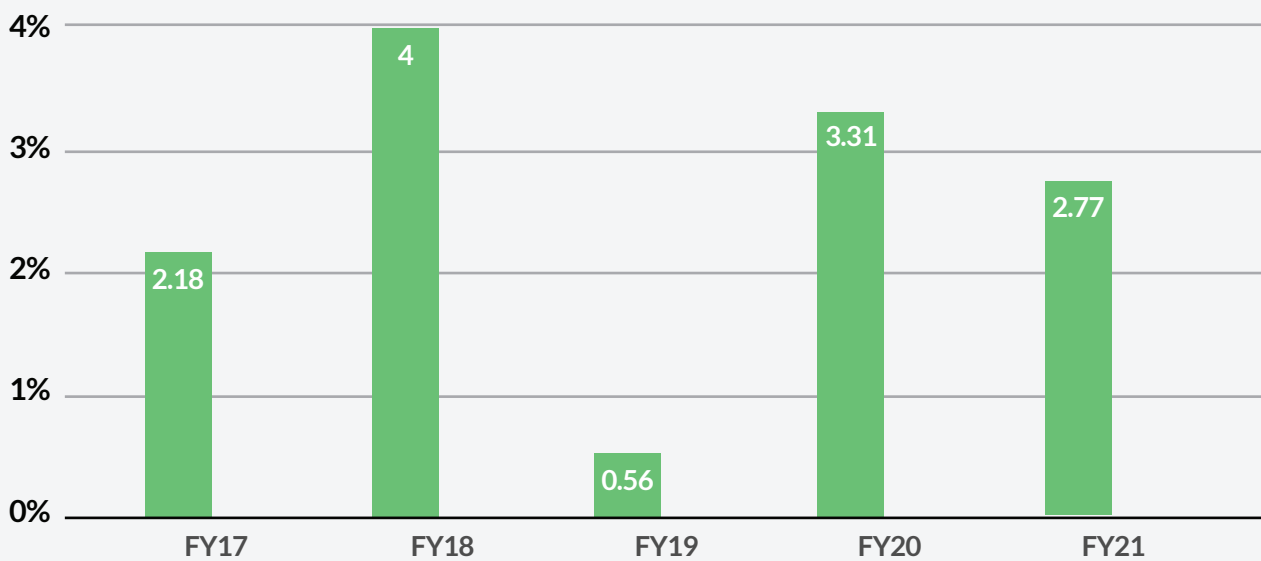
Source: Pitchbook



<sup>2</sup> [https://www.finance.gov.pk/survey/chapters\\_21/02-Agriculture.pdf](https://www.finance.gov.pk/survey/chapters_21/02-Agriculture.pdf)



### Agriculture Performance



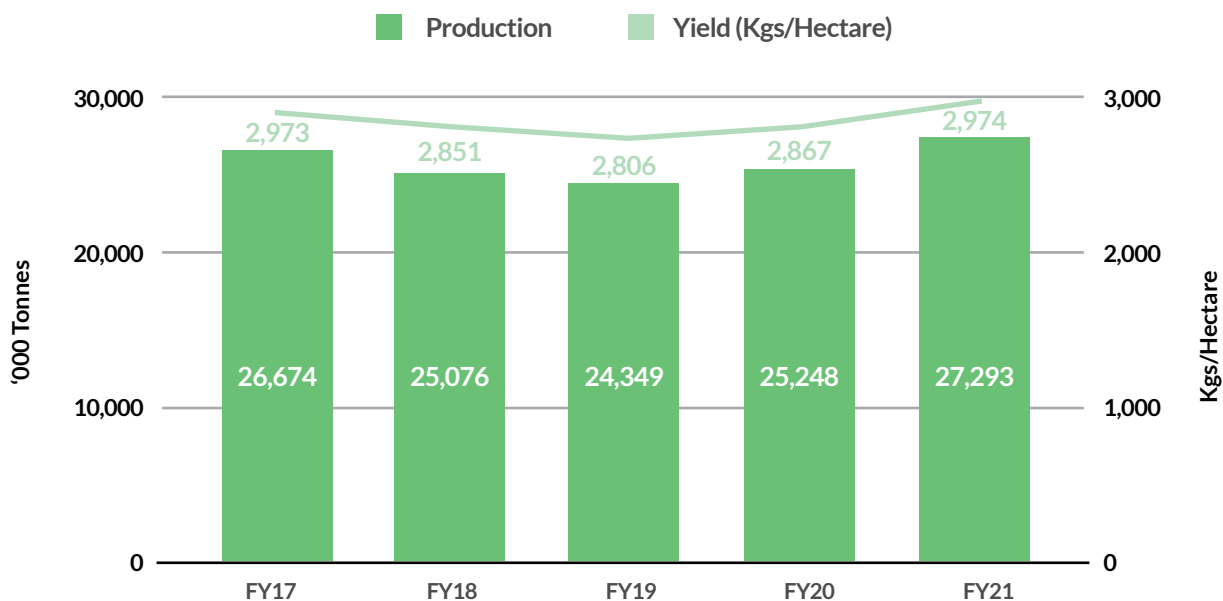
Source: Pakistan Economic Surveys, Dawn

Within the broader agriculture sector, most of the activity is driven by crops which grew at 2.47% in FY21 while forestry edged up 1.42% and fishing a mere 0.73%. The sector has grown sustainably for the most part over the last 5 years, and recorded its

highest growth rate in FY22 at 4.4%. The highest contribution to this performance came from crops, which jumped 6.58%, while forestry and fishing were up 6.13% and 0.35%.<sup>3</sup>

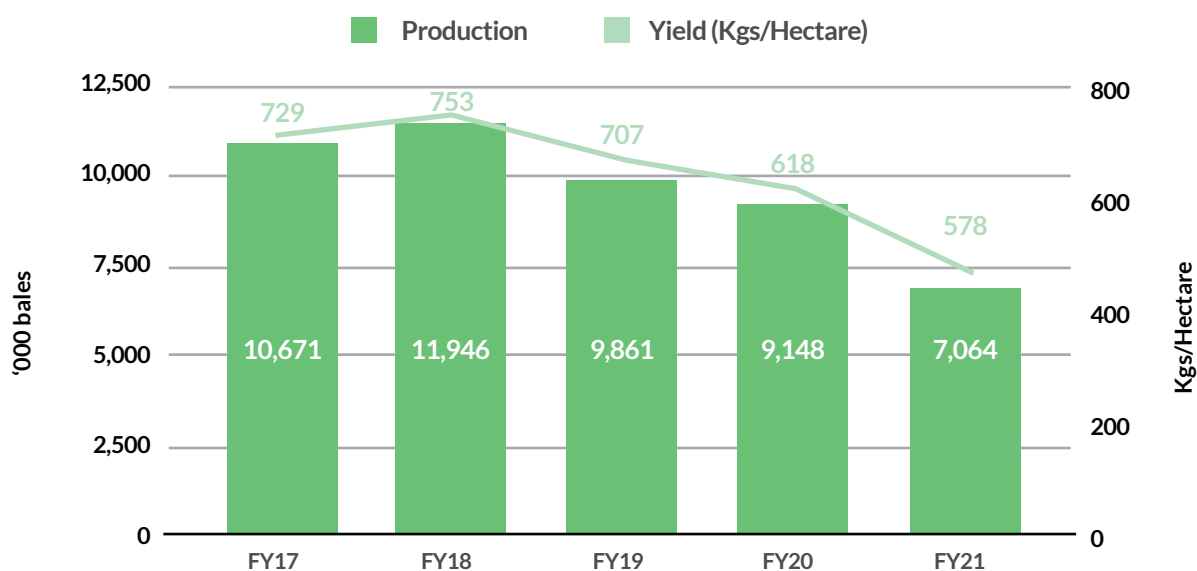
<sup>3</sup> <https://tribune.com.pk/story/2350548/country-fails-to-meet-wheat-target>

### Wheat Production and Yield



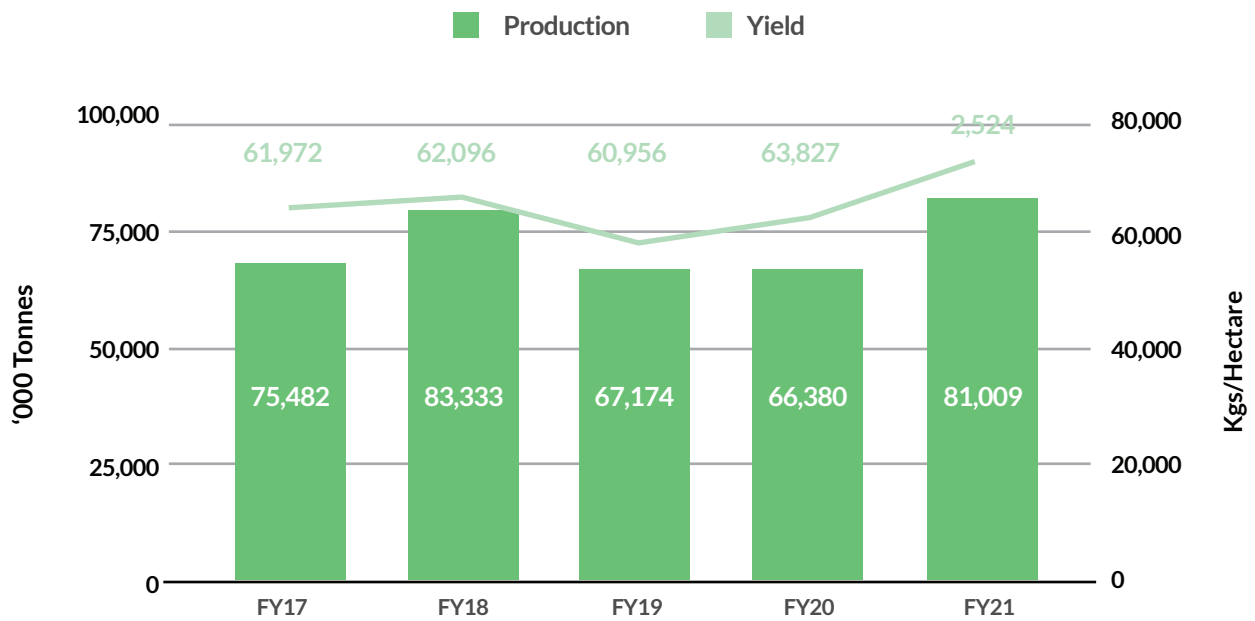
Source: Pakistan Economic Survey 2020-21

### Cotton Production and Yield



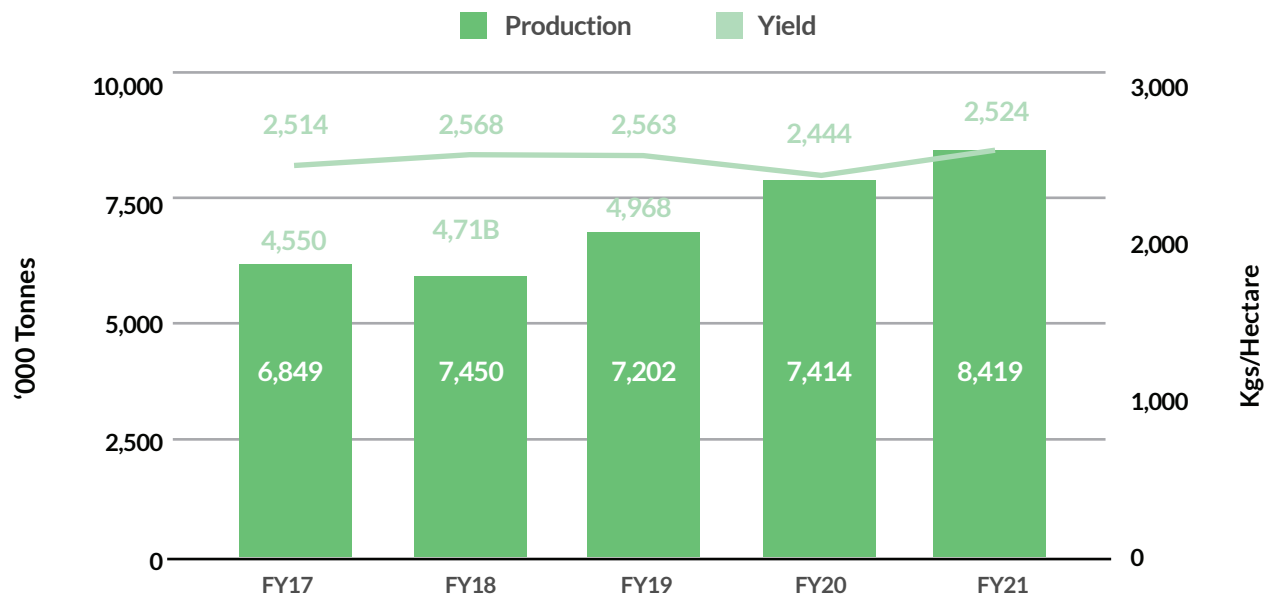
Source: Pakistan Economic Survey 2020-21

## Sugarcane Production and Yield



Source: Pakistan Economic Survey 2020-21

## Rice Production and Yield

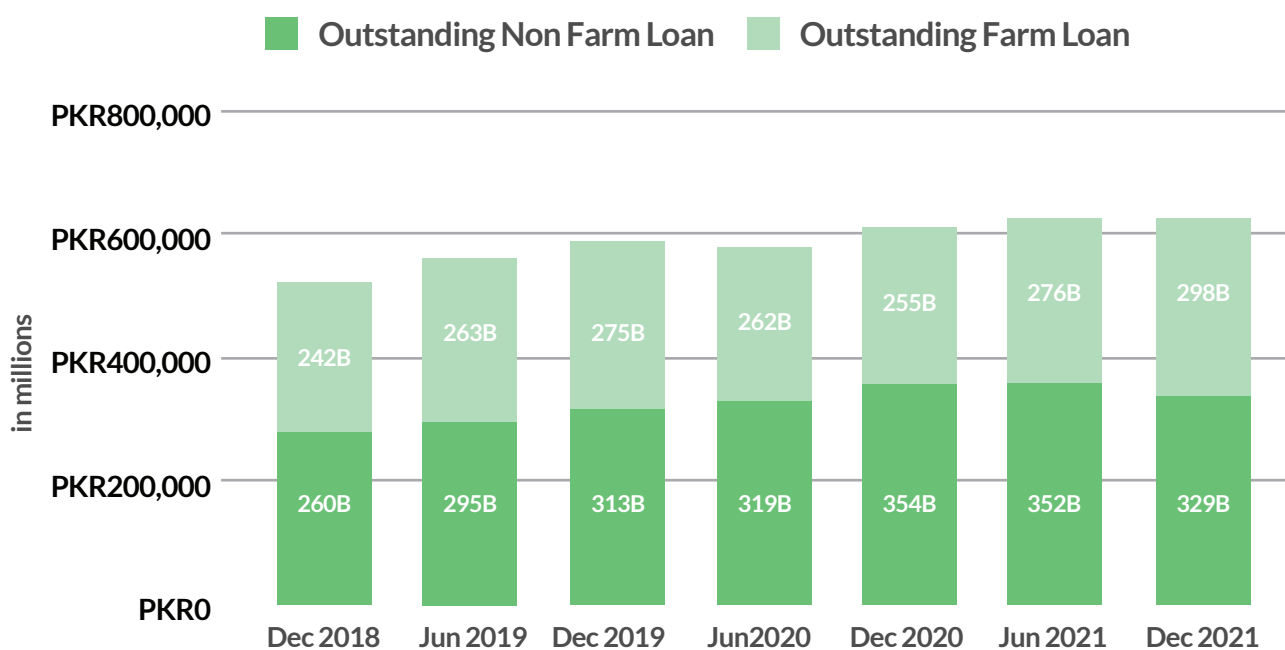


Source: Pakistan Economic Survey 2020-21

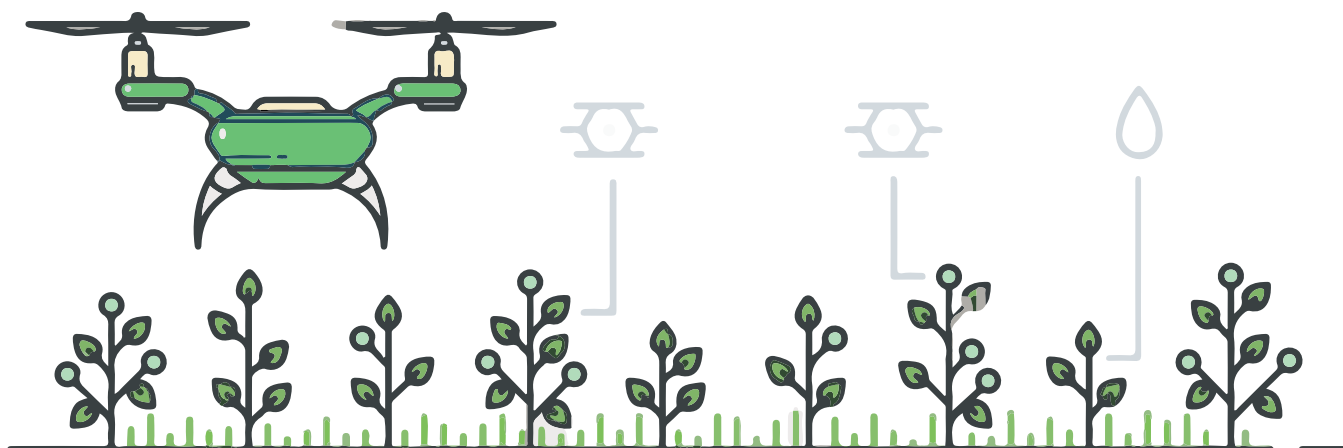
The sector can be further revitalized by promoting access to credit as the total outstanding agricultural loans stood at PKR 627 billion as of 2021 end, sliding slightly lower over June 2021.

Similarly, the number of borrowers has actually witnessed a noticeable decline since 2019, falling from 3.1 million in 2020 to 2.6 million in 2021.

### Outstanding Agricultural Loans

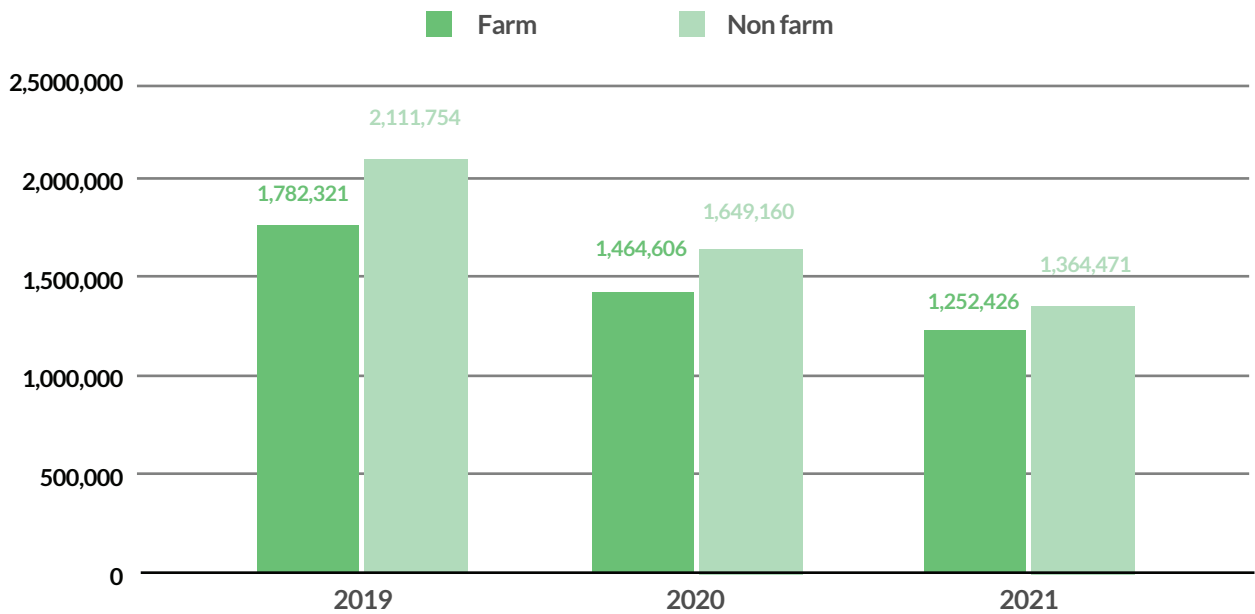


Source: Karandaaz Data Portal, State Bank of Pakistan





## Number of Disbursed Borrowers in Agriculture



Source: KarandaaZ Data Portal, State Bank of Pakistan



Agri-tech companies Overview

The massive opportunity in agri has managed to grab the attention of both startups and some legacy companies to try and streamline the inefficiencies from multiple ends with the use of technology. Among the established players, telecom operators have done well to expand agri to their value-added services. This includes Jazz's Kamyab Kisan, which provides information and advisory to farmers through a mobile app while Telenor Pakistan has two products - Khushaal Zamindar and Khushaal Watan - where farmers can connect with others in the community, get live mandi rates, or talk to legal experts. Within the new-age startups, the farm-to-market segment is the most popular while others have focused on problems like agri-financing, data-driven advisory among others.



2019 with most of the money going towards marketplaces like Tazah (\$6.5 million) and Jiye Technologies (\$2.5 million). Similarly, some newer players focused towards the financial inclusion aspects by promoting access to credit or insurance through traditional banks and microfinance institutions account for the lion's share of these verticals.

In total, agritech startups have raised around \$14.5 million across only seven deals since



# The Push from Government

To make Pakistan’s agri economy more sustainable in the face of global supply chain pressures and climate change, the government has come up with the Agriculture Transformation Plan and identified key areas for intervention, including immediate goals

like cotton output revival to more long-term objectives of developing new clusters. While the policy doesn’t specifically spell out agritech, a number of interventions are aimed at digitizing the agriculture sector such as a digital subsidy mechanism for farmers or crop zoning.

## First Generation Interventions

Bridging the yield gap	Target sectors
<ul style="list-style-type: none"> <li>■ Seed sector reforms</li> <li>■ Inputs: digital subsidy mechanism</li> <li>■ Mechanization</li> <li>■ Water efficiency</li> <li>■ Revamping extension services</li> <li>■ Access to credit</li> <li>■ Post harvest storage</li> <li>■ Restructuring research institutes</li> </ul>	<ul style="list-style-type: none"> <li>■ Cotton revival</li> <li>■ Olive deepening</li> <li>■ Genetic improvement in livestock</li> <li>■ Fisheries</li> </ul>
Second Generation Interventions	
<ul style="list-style-type: none"> <li>■ Horizontal expansion</li> <li>■ International Cooperation</li> <li>■ Value Chain Development</li> <li>■ Clusters (Fruit and Vegetables)</li> <li>■ Perishable produce</li> </ul>	<ul style="list-style-type: none"> <li>■ Crop zoning</li> <li>■ Land consolidation</li> <li>■ Organic farming</li> <li>■ Adaption and self-discovery</li> <li>■ Sub-montane agriculture</li> </ul>

Source: Ministry of National Food Security and Research

As a key driver of economic activity in the country, the government naturally plays an integral role in the upkeep of the agri sector and has lately initiated some major digital transformation projects. For example, the Forest Departments have undertaken ambitious Geographical Information System plans, with the Forest, Wildlife and Fisheries Department of Punjab has set up a dedicated GIS Lab in FY13 and has since mapped 1.11 million acres of the total 1.58 million acres of forest land in the province. Similarly, Punjab

Irrigation Department in partnership with Punjab Information Technology Board developed e-Abiana portal to enable digital collection of water charges and fines.

The Pakistan Mercantile Exchange, owned in part by National Bank of Pakistan and Pakistan Stock Exchange, has also come up with electronic warehousing receipts for agri in order to make farmers’ produce standardized and more tradable.<sup>4</sup>

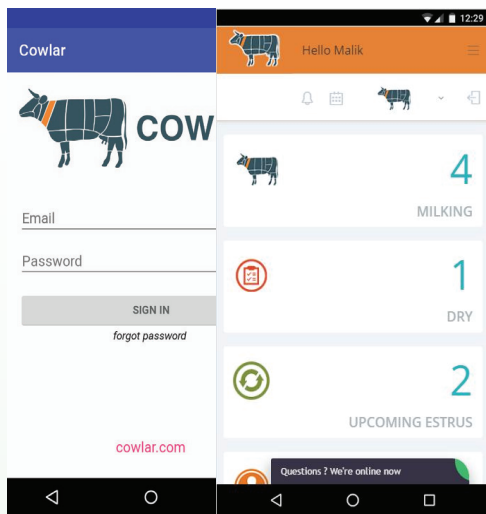
<sup>4</sup> <https://www.pmx.com.pk/#about>

## Agritech Players in Pakistan



### Ricult

Ricult provides a mobile agri platform that farmers can use to procure farm inputs, market their farm products, obtain credit for working capital management, and obtain agronomic services. The company has partnered with major farm input suppliers in Pakistan and also with major food processing companies.<sup>5</sup>



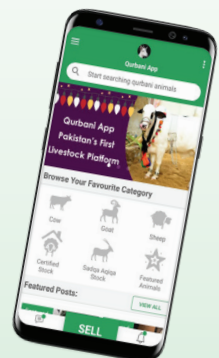
### Cowlar

Cowlar is a provider of IoT-enabled wearable devices for real-time cattle monitoring. It offers wearable collar devices equipped with sensors to measure the temperature and heat cycle activities of animals.

The device collects data on a real-time basis and aggregates them on the software's dashboard, pushing notifications to the farmers or managers regarding any abnormal activity such as drastic changes in temperature. Through heat cycle monitoring, it detects the disease symptoms in the animals and notifies the farmer about the same.<sup>6</sup>



Qurbani App is an online marketplace for livestock where buyers can meet sellers. Their product categories include cow, goat, sheep, sadaqah, and aqiqa. Its app is available for both android and ios users.<sup>7</sup>



<sup>5</sup><https://www.web.ricult.com/>

<sup>6</sup><https://www.cowlar.com/>

<sup>7</sup><https://qurbaniapp.com/>

# ALI AKBAR G R O U P P A K I S T A N

## Ali Akbar Group

Ali Akbar Group is a conglomerate that provides products, technological expertise, and field services for various sectors such as agriculture, energy, and textile. It provides various products which include insecticides, fertilizers, micro-nutrients, herbicides, seeds, and more.<sup>8</sup>

## peepu Peepu

Peepu is a provider of an online agri-trade platform for both farmers and traders. It allows farmers to sell their products online at a competitive price directly to the buyers. The company offers its application available on Google Play.<sup>9</sup>



## As Sammak Farm

As Sammak Farm is a provider of sustainable fish farming using biofloc technology, offering products like BioFloc Fish Tank Accessories, fish seeds etc.<sup>10</sup>



## PakAgriMarket

Pak Agri Market is an online marketplace offering agricultural inputs and produce. Their product catalog includes machinery, seed, fruits, vegetables, plants, etc. The company also claims to provide modern farming information.<sup>11</sup>



<sup>8</sup><https://www.linkedin.com/company/aliakbargroup/>

<sup>9</sup><https://peepu.co/>

<sup>10</sup><https://www.facebook.com/assammakfishfarm/>

<sup>11</sup><https://pakagrimarket.com/>

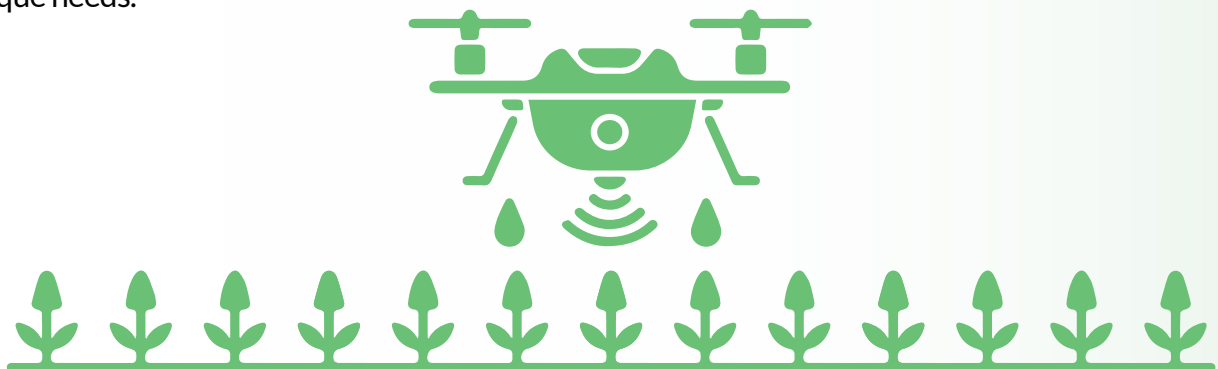
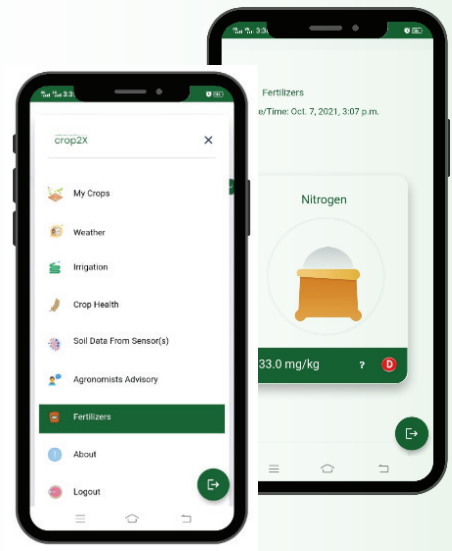
Double Your Crop With

# crop2X

## Crop2x

Crop2x is a provider of field monitoring solutions using AI and satellite imagery. The platform provides insights based on satellite imagery which allows tracking the positive and negative changes in crop development and enables farmers to monitor crops in different areas, fields, and regions.

The startup offers weather data collection services to enable users to research and update crop irrigation patterns, pest control models which help improve the quality of the crop. This is done through the use of sensors to collect moisture, temperature, and electrical conductivity (EC) at multiple depths of the field. Intervals of data measurement and transmission to the cloud can be remotely configured and adjusted to each crop's unique needs.<sup>12</sup>



## Ba Khabar Kissan

Ba Khabar Kissan (BKK) is a startup offering crop advisory services to farmers. It offers an app-based platform that connects farmers with experts in the field of agriculture. Users can get information on topics such as weather, crop advisory, livestock advisory, modern practices, and disaster management. It also provides satellite imagery, fertilizers calculator and current market prices.<sup>13</sup>



## PakZarZameen

PakZarZameen provides precision agriculture services to farmers through drones that enable farmers to track and monitor their crops. It offers Kisan Zar Zameen, an android application, to provide soil conditions, crop health analysis, and weather forecasting using multispectral imagery from satellites.<sup>14</sup>

<sup>12</sup><https://crop2x.com/>

<sup>13</sup><https://bkk.ag/>

<sup>14</sup><https://www.facebook.com/pakzarzameen/>



## Mandi Express

Mandi Express is a fresh produce and grocery delivery service. Their vegetables and fruits are sourced from New Sabzi Mandi, from the same suppliers that supply many 5 star hotels, upscale restaurants and grocery stores in Karachi along with some of our other trusted suppliers. Currently, they are operational only in Karachi and cover almost all areas in the city.<sup>15</sup>



## Crop Drop

CropDrop is a B2B fresh produce supply chain platform. They source quality produce directly from farmers and deliver it to urban retailers, businesses and service providers at competitive prices.<sup>16</sup>



## Farmdar

Farmdar uses deep-tech with high-res, multi-band satellite imagery to create actionable data for farmers and corporations, which helps improve their efficiency and profitability.<sup>17</sup> By virtue of yield increase with waste and input reduction, Farmdar's data also helps reduce the impact of agricultural activity on climate change. It has raised \$1.3 million in a Seed funding round led by Indus Valley Capital with participation from Deesai.<sup>18</sup>



Transforming Agriculture

## Tazah

Tazah is a B2B fresh produce marketplace that connects farmers to businesses. They are working to streamline the extremely complex agriculture value chain end-to-end through tech.<sup>19</sup> Tazah sources the produce directly from farmers, sorts and grades it at its warehouses, and then ships it to the street vendors.<sup>20</sup>



EasyFresh connects farmers with retailers through an online platform. It is working to remove the existing inefficiencies in the agri supply chain while reducing food wastage, enhancing farmers' income and providing superior quality products to retailers across Pakistan.<sup>21</sup>



<sup>15</sup><https://www.linkedin.com/company/cropdrop/?originalSubdomain=pk>

<sup>16</sup><https://www.mandiexpress.pk/topic?name=AboutUs>

<sup>17</sup><https://www.techjuice.pk/farmdar-a-pakistan-based-agritech-raises-1-3-million-in-a-seed-round/>

<sup>18</sup><https://magnitt.com/news/farmdar-1-3m-seed-53473>

<sup>19</sup><https://www.tazahtech.com/>

<sup>20</sup><https://www.menabytes.com/tazah-pre-seed-close/>

<sup>21</sup><https://easyfreshtech.com/about/>

# Jiye

## Jiye Technologies

Jiye Technologies is a B2B agri marketplace that connects farmers and businesses through a lean supply chain model.<sup>22</sup> It purchases directly from farmers at lower rates and sells it to retailers at the prevalent market rate. The operations remove multiple stakeholders in the supply chain which leads to low price uncertainty.<sup>23</sup>



## AgriDunya

AgriDunya is a B2B agritech marketplace solving the challenges faced by farmers and vendors, by supplying input products (fertilizer, pesticides, seeds, etc.) to them on-demand at their doorsteps.<sup>24</sup> They also provide consultancy and financial services to farmers such as loans, employment, weather information, satellite imagery solutions, etc.<sup>25</sup>



## Radical Growth Solutions

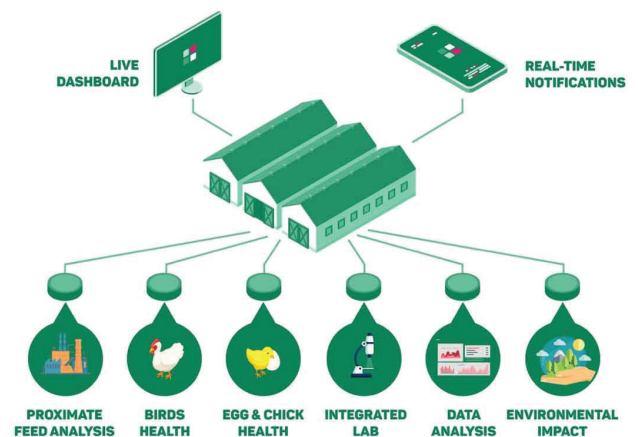


Radical Growth Solutions leverages technology to measure plants' humidity, soil moisture, temperature and light intensity to determine the precise requirements for water.<sup>26</sup> Their solution aims to optimize farming; by enhancing crop quality and quantity, improving the use of farm resources and equipment, real-time monitoring and irrigation management, and converting farms into smart spaces.<sup>27</sup>



## Poulta

Poulta helps farmers with early detection, prediction, and prevention of losses across their poultry farm value-chain.<sup>28</sup> Using IoT and sensor tracking, they provide farmers with real-time data with respect to any unusual activity in their poultry.<sup>29</sup>



<sup>22</sup><https://paganresearch.io/company/jiyetech>

<sup>23</sup><https://profit.pakistantoday.com.pk/2021/12/21/jiye-technologies-announces-raising-2-5m-in-pre-seed-funding-to-scale-farm-to-retail-operations/>

<sup>24</sup> <https://www.agridunya.com/>

<sup>25</sup> <https://tracxn.com/d/companies/agridunya.com>

<sup>26</sup> <https://poulta.com/>

<sup>27</sup> <https://www.f6s.com/poulta>

<sup>28</sup> <https://www.radicalgrowth.solutions/>

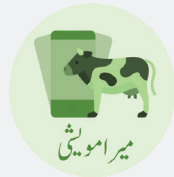
<sup>29</sup> <https://www.brinc.io/portfolio/radical-growth-solutions/>





## Sabzi.pk

Sabzi.pk is an online platform that allows household and corporate customers to procure their fruits and vegetables needs. To ensure quality of the highest level, Sabzi.pk delivers the goods to its customers at reasonable prices.<sup>30</sup>



## Mera Maweshi

Mera Maweshi is an online intelligent disease diagnosis system for the common diseases of four ruminants: buffalo, cattle, goat and sheep.<sup>31</sup> It aims to assist the farmers in diagnosing more than 30 diseases of cows, buffalos, goats and sheep which don't involve pathological or surgical interventions. The platform allows the diagnosis of diseases based on the symptoms that a farmer can feed through an easy-to-use interface in either Urdu or English.



## Reap Agro

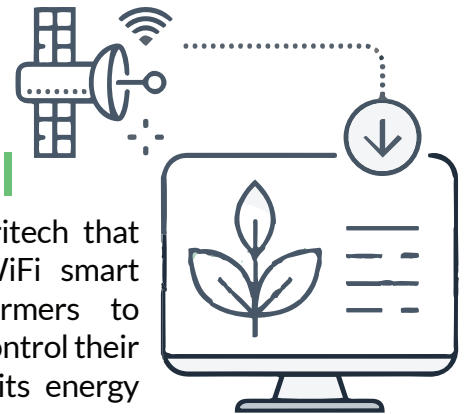
Reap Agro is working to transform the agricultural community by expanding farmers' access to credit. It provides them with interest-free loans in the form of inputs which helps improve their productivity and profitability.<sup>32</sup>



RemoteWell

## Remote Well

Remote Well is an agritech that uses bluetooth and WiFi smart switch to enable farmers to remotely manage and control their tubewell and monitor its energy usage.<sup>33</sup>



## Sawie

SAWiE is offering data-driven solutions to farmers to better manage their farms independently. They use remote sensing tools including Earth Observation and ground-based sensors to meet the needs of all farm types, especially small holdings.<sup>34</sup>



<sup>30</sup><https://pakwired.com/sabzi-pk-acquires-7-5-million-for-seed-round-funding/>

<sup>31</sup><http://meramaweshi.com/>

<sup>32</sup><http://www.reapagro.com/about.html>

<sup>33</sup><https://remotewell.pk/>

<sup>34</sup><https://sawie.info/about/>



## LMKT

LMKT is a technology-based company with a dedicated vertical for agritech under which it offers products and solutions to both government and farmers such as geographical information system, digitization of land records, government-to-farmer communication. It also operates Meri Zameen, a mobile app which helps Punjab Agriculture Department's field assistants to help with marking of farms and collection of soil samples, which allows the provincial government to better track the crop history.<sup>35</sup>



## Digital Dera

Digital Dera is a smart village and the brain of smart agriculture that connects rural remote agriculturally dense areas to the Internet established by Agriculture Republic across Pakistan, the Digital Deras are revolutionizing how the rural regions and farmers connect to the internet and trade their crops and yields directly with retailers across the country.<sup>36</sup>



## Pedaver

Pedaver is making a difference in farming, agribusiness and value chains by providing services such as productivity enhancement, value chain linkages, technology partnerships, business development, sustainability and stewardship.

They are providing quality professional services, keeping in view their clients' needs for continuous improvements leveraging scientific and technological advancements, changing market trends and optimal use of available resources. Pedaver unifies diverse technologies, named as paradoxical agriculture leading to regenerative agriculture.<sup>37</sup>



## Baythak

Baythak is a social commerce fintech for the agri sector. Beythak's closed loop lending platform provides credit lending and farming inputs with closed contracts for buying outputs with 90% reduction in non-performing loans (NPL), elimination of middlemen, lower annual percentage rate (APR), and loan disbursement in seven days.<sup>38</sup>



<sup>35</sup><https://www.lmkt.com/>

<sup>36</sup><https://www.linkedin.com/showcase/digital-dera/about/>

<sup>37</sup><http://www.pedaver.com/>

<sup>38</sup><https://www.beythak.com/>

# TALK TO US



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## ABOUT THIS INDUSTRY ROUNDUP

Pakistan Software Export Board developed this paper by hiring services of an independent consulting firm to prepare this roundup on Pakistan's Agritech sector. The paper focuses on Pakistan-based companies in this vertical and apprises the reader of the expertise available in Pakistan in the Agritech domain.

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