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## SWOT ANALYSIS AND STRATEGY OPTION IN DEVELOPMENT: A CASE OF PAKISTAN'S AGRICULTURE SECTOR

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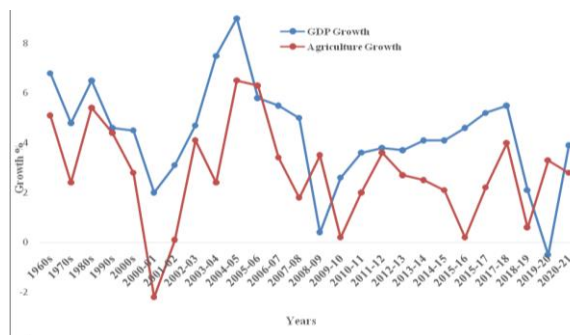
### ABSTRACT

The intransigent concern of agriculture sector in Pakistan is to address the food security issue by providing the fiber, safe and nutritious food for growing population and feed and fodder for the livestock as well as ensuring modest export surpluses. To attain food secure and pro-poor agricultural growth, Pakistan needs to adopt wide-ranging approach towards increasing agricultural production by enhancing per unit productivity rather concentrating upon area expansion approach. Keeping in view the availability of natural resources (land, water, human labor), the management of human food, animal feed and fiber security in future is more challenging and difficult than it was in the past. This paper presents an encapsulated overview of Pakistani agriculture considering its strengths, weakness, opportunities, and threats. To study the aforementioned facts about Pakistan's agriculture sector the SWOT analysis was performed. This paper focused on the agricultural development by performing a brief overview of agriculture sector, bringing out the salient characteristics, the inherent constraints, and problems. With a focus to simplify the performance and productivity in-line with sustainable growth in Pakistan, irrigation techniques, water management, value addition, storage and marketing system must be reformed and modernized regarding of food supply chain.

**Keywords:** agriculture, development, Pakistan, strategy option, SWOT analysis

### INTRODUCTION

Agriculture is contributing as a major part in the food security of Pakistan's economy. It also supports the major segment of the population (65-70%) having the largest workforce (37.4%) and furnishing the raw material to other allied sectors (GoP, 2020-21). In term of significance, agriculture sector in Pakistan, it is most dominant sector of the economy. During the year 2020-21 the four sub-sectors of agriculture like crops (11.69% share in agriculture), livestock (60.56% share in agriculture), forestry (2.13% in agriculture) and fishing (2.06% in agriculture) significantly contributed to agriculture value addition. Overall contribution of agriculture in total exports was 56.7 percent during FY 2020 (GoP, 2019-20). However, the agriculture sector of Pakistan faced various challenges such as water scarcities, land attrition, salt-affected soils, structural problems, lack of mechanization, climate change, low agricultural technology adaptation and many others had caused the fluctuating progress of this sector and resultantly up and down or/and a slow growth (Figure. 1).



**Figure 1.** Historical Growth Trends (1960s-2021)

Source: Various issues of Pakistan Economic Survey. Generally, SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis is used as a tool for evaluation of strategic position of any business in the market. It is finest technique to examine the performance of any business activity by focusing on its strength and weaknesses. As far as reviewed literature is concerned, it has been used in different fields such as management, education, marketing, social media, health, and agriculture (Benzaghta *et al.*, 2021). In the field of agriculture, SWOT technique was firstly used by Faesel and Hill (1995) to study the

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weak agricultural infrastructure through transition of fruit industry of Poland. Previously, many scholars had conducted deep research by using SWOT tool in agriculture context like Damianos and Skuras, 1996 (alternative farm enterprises and strategies in Greece); Garnevska *et al.*, 2007 (farms in the Plovdiv region of Bulgaria); Diamantopoulou and Voudouris, 2007 (water resources management strategies of Zakynthos Island in Greece); Ommani, 2011 (rural areas in Iran); Kumar and Nain, 2013 (overall performance of agriculture sector in India); Kasutjianingati *et al.*, 2020 (Indonesian gain from Robusta coffee bean development strategy in Panti district); Wardhono and Wibowo, 2020 (increase cooperation between Indonesian farmers); Chinese researcher Zhang *et al.*, 2020 (brand development of agricultural products in Jilin Province).

Previously, inadequate literature was found related to SWOT technique based on agriculture sector of Pakistan. In this context, Akhter and Pirzada had performed the SWOT analysis of agriculture sector of Pakistan in 2014. For empirical analysis, primary data was collected through qualitative questionnaires from farmers of different regions. The study brought the suggestion that the sector can be developed considerably when volume of imports will be higher than its exports. Moreover, Kalwar *et al.*, 2018 had reviewed the developmental structure for agro-based industries in secondary cities of Sindh. Ten-Year Medium-Term Development Framework (MTDF) Plans were evaluated through SWOT analysis. The results exposed that main concerned industries were textile and sugar. Decentralization of controls and strong planning strategies in the development plans were suggested. Brohi *et al.* (2020) had focused to assess the performance of agriculture sector of Mirpur Khas (Sindh). For this purpose, SWOT technique through simple frequency distribution analysis was applied. The results of the study highlighted the strength and weakness of the agriculture of the selected area. Keeping in view the existing literature regarding agriculture sector of Pakistan the emphasis of the paper is to analyze strength, weaknesses, opportunities, and Threats (SWOT) of Pakistan' agricultural sector.

## MATERIALS AND METHODS

This article purpose to perform the SWOT analysis of Pakistan's agriculture sector. The specific goals are to discuss the agriculture sector of Pakistan through study of strengths and weakness of this sector. Moreover, to identify the

opportunities and threats of the sector. Previously, in the context of SWOT technique for agriculture sector, it was performed to examine the factors in development of agricultural sector of Kazakhstan (Ncube and Washburn, 2010). SWOT is an investigative procedure that gives answers to the questions related to each of the four words of SWOT (Herliana *et al.*, 2018). This method (SWOT) able the researcher to bring out the strengths (advantages and excellence) weaknesses (things to improve the meager performance) opportunities (existing empowering factors and comparative advantages) whereas threats (obstacles that affect the success). Analysis using the SWOT framework in any field can be useful to highlight the activities into areas of strengths and where the greatest opportunities are available (Sanchez and Omar, 2012).

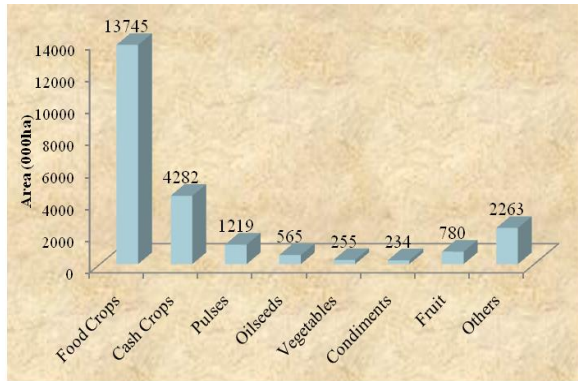
## RESULTS AND DISCUSSION

### A. Strengths of Pakistani agriculture Rich biodiversity

Pakistan is gifted naturally with agro-environment with temperate variant, semi-tropical landmark and verity of fruits, vegetables and crops at suitable locations and climate conferring to the requirements of the crops. At present land used for agriculture purpose in Pakistan is reported about 35% of the total land (cropped plus forest area) which can be its key strength. For the year 2020-21, on the aggregate the performance of agriculture sector was noted 2.77% significantly higher than 0.10 percent growth attained last year. Furthermore, during this year the growth of major crops (i.e. wheat, rice, sugarcane, maize and cotton) was recorded 4.65% (GoP, 2020-21).

### Arable and cultivated land

According to World Development Indicator (WDI) in 2018 Pakistan has 39.57% (30.50 million hector) arable land. The cropped area in Pakistan is about 23.45 M/ha. Pakistani agriculture sector comprises on five major crops wheat 8.80 M/ha (37.53% of total cropped area); rice 3.03 M/ha (12.92%); maize 1.40 M/ha (5.97%); Sugarcane 1.04 M/ha (4.43%) and cotton 2.51 M/ha (10.70%). These five major crops cover about 16.78 M/ha representing 71.56% of the total cropped area. This reflects that a large tract of cultivated land is under five major crops. Other crops cover about 6.67 M/ha, which is about 28.44% of total cropped area in Pakistan (GoP, 2019-20). Figure 2 is presenting the detailed picture of cropped land distribution of different food groups.



**Figure 2.** Distribution of Total Crop Land - By Crops  
Source: Agricultural Statistics of Pakistan 2017-18

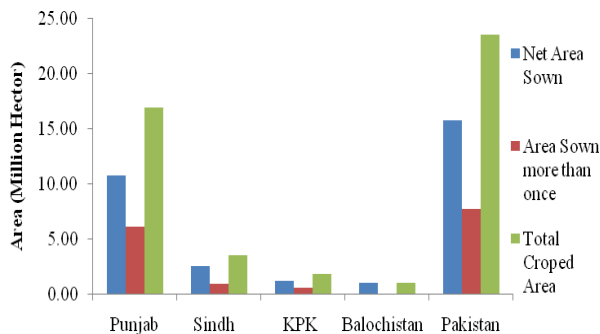
### Natural resources

Being an agro-economic country Pakistan is producing different crops, fruits, and vegetables. It is rich in natural resources and blessed with one of the best fertile lands of the world. For many agricultures produces country has ranked at top ten for its production. In this connection, Pakistan is one of the world's top ten producers of wheat (8<sup>th</sup> largest producer), cotton (5<sup>th</sup> largest producer), rice (10<sup>th</sup> largest producer), sugarcane (5<sup>th</sup> largest producer), mango (5<sup>th</sup> largest producer) and dates (6<sup>th</sup> largest producer) whereas the production of Kinnow and oranges is ranked at 13<sup>th</sup> (FAO 2019).

### B. Weaknesses of Pakistani agriculture

#### Limited cultivable area

In Pakistan only 22.1 million hectares is available for cultivation out of the total area of 79.6 million hectares while the rest of the land is contained cultivable waste, populated forests, and rangelands. Cropped is reported 23.3 million hectares, whereas forests cover 4.6 million hectares of the total land. Figure 3 showed the detailed picture of total cropped area and net sown area for more understanding.



**Figure 3.** Distribution of total crop land - by province (2017-18)  
Source: Agricultural Statistics of Pakistan 2017-18

### Fragmentation of land

Land fragmentation is referred to the term in when an individual ownership holds of various spatially separated land. Similarly, conferring to Alemu *et al.* (2017) land fragmentation defined as farmers working two or more geologically divided tracts of land, taking account of the distances between these fields. In Pakistan, one of the hurdles for agricultural expansion is land fragmentation. Because of this nonstop process of land fragmentation in Pakistan almost, 68% of total farms (about 80% of the cultivated area) has become small and below breadline level farms (Kousar *et al.*, 2020).

### Low technology inputs

Globally, technology innovation is emerging day by day, but Pakistan is still far behind to adopt and introduce agriculture related technology to its farmers. By doing this, output per acre of agriculture sector in Pakistan is low as compared to other counties (Sattar, 2012). Some of main challenges in technology adoption for Pakistani farmers are small land holdings and awareness, availability and accessibility, less profitability, high cost of technologies, scale neutral technologies, indigenization issues, cost benefit issues, less support from public sector (Wang *et al.*, 2020; Khan *et al.*, 2022).

### Inefficient water management

Irrigation is the lifeblood of agriculture in Pakistan. Traditionally, direct flood irrigation method was used for irrigation the crops like wheat and this type of irrigation caused enormous water losses and overexploitation of groundwater. One of substitute methods of water application to crops like Raised Bed (RB) technology were encouraged and suggested to cope up inefficient water managements (Rehman *et al.*, 2016). According to GoP (2021-22), during the year 2021-22, water availability was recorded at 65.1-million-acre feet (MAF) (Kharif 2021) and 27.4 MAF (Rabi season 2021) showing a decrease of 12% over Rabi 2020-21.

### Low value addition

According to the report of World Bank (collection of development indicators, compiled from officially recognized sources) for the year 2020, the value added (% of GDP) for agriculture, forestry, and fishing, in Pakistan was figure out at 23.13%. Value addition (from row to final product) has its great importance to the growth of Pakistan's economy. For agriculture value addition means to get maximum benefits from agricultural products

and convert them into full nourish final product. Value addition sector had a great potential for income generation, exploration of new markets, employment generation (establishment of packaging and storage units) and ensure the food security through reducing and ensuring food safety (Ali *et al.*, 2013). Furthermore, value addition has faced some various obstacles which were described in Figure 4 in detail.

### Exploitative marketing system

In Pakistan, markets for agricultural products are not strong. Middlemen overrule both the farmers and the consumers. Overall marketing system is the weakest link in the agriculture chain and creating more space for middlemen's profit margins (Mukhtar *et al.*, 2010). These types of inefficiencies effect the function of agricultural marketing system which further cause the constant fluctuations in prices, and directly hit the producer share in negative way (Aujla *et al.*, 2007). For betterment of market functions new technologies are required. These innovations can be useful for farmers to achieve high yield and

market prices will help farmers to take appropriate decisions. On consumer will also aware form the current information regarding prices (Yaseen *et al.*, 2018).

### C. Threats of Pakistani agriculture

#### Crop diversification and climate change

Crop diversification is considering a possible strategy for farmers to cope with climate change challenges. Conferring to Global Climate Risk Index 2021 results showed that Pakistan was in list among the top 10 countries which were most affected globally by the impacts of extreme weather (flood, storms, heat waves etc) during 2000-2019. Presently, in Pakistan no procedure is being adopted to deal the soil erosion after harvesting. This is dropping the fruitfulness of land which will lower productivity in future. Determinants of Crop diversification consists of soil quality, agro ecological condition, climate, farmer's characteristics, drought, flood etc and farmer's decision on crop diversification based on these determinants (Adnan and Heman, 2022).

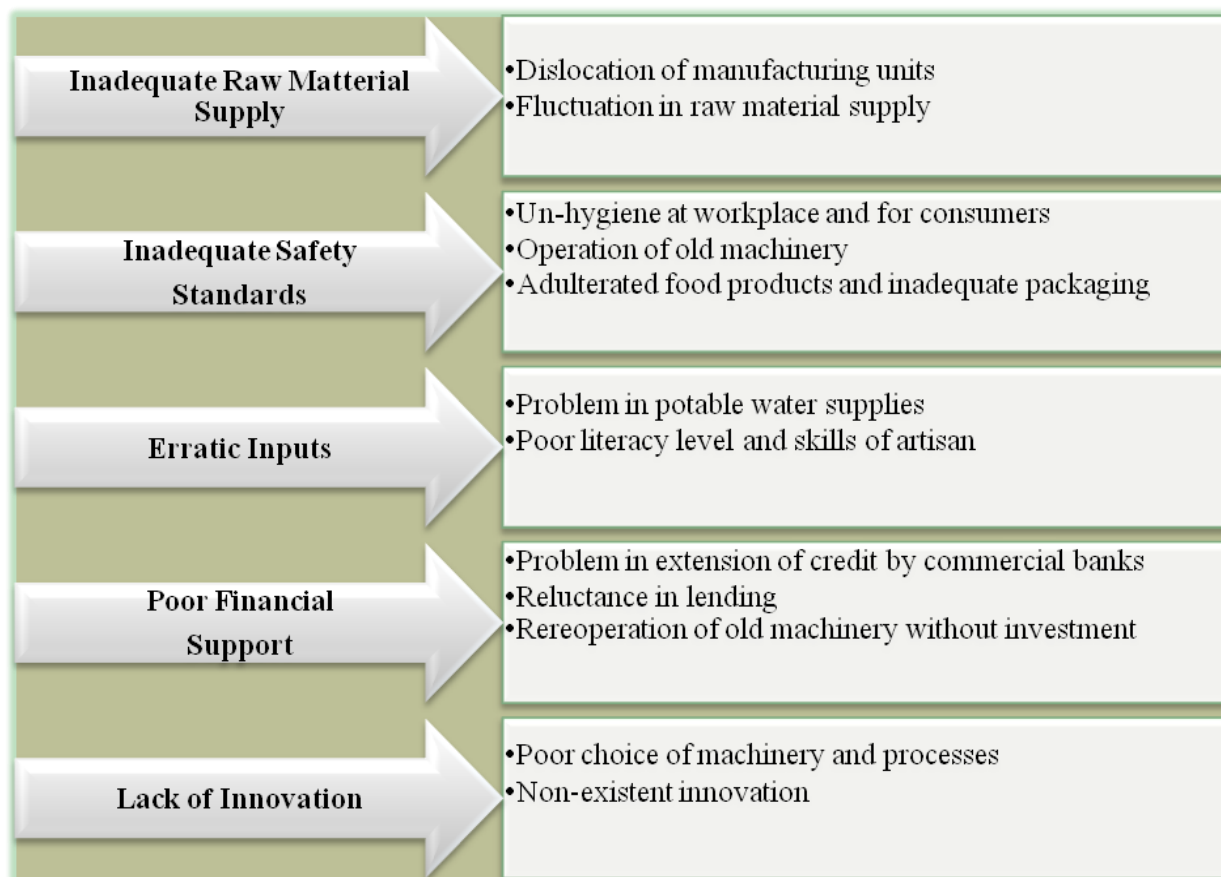


Figure 4. Obstacle to value addition in Pakistan

### **Urbanization**

Because of urbanization people are shifting towards cities. Magnitudes of cities are growing, and agricultural land is being condensed. According to statistics of Pakistan share of urbanization increased from 36.9% to 43.7% in one decade which is alarming (GoP, 2020-21). Pakistan is facing this issue since long time and now its magnitude is much higher. Day by day agricultural land is converting to non-agricultural purposes. Rabia and Maisam (2015) research results endorsed the said situation in Peshawar, Pakistan.

### **Paradigm shifts in policies**

Economic returns are possible only through reliable interferences and a policy of sustainable development. The most suitable approach to achieve economic goals is to develop domestic policies, models, and plans, designed as per needs and ground realities of the country. Unfortunately, Pakistan had been the suffered from the “fancy models”, which did not, met up according to the facts.

### **Imports**

Due to the mismanagement and bad policies of government, despite of this Pakistan is an agrarian country and has a good position for agricultural produce but still it is importing many agricultural items. This is having bad impact on economy and discouraging the farmers.

### **Malnutrition and food security**

Agriculture is the lifeline for the people of Pakistan. The sector holds the key to drawing millions out of poverty, but this sector still faces tremendous social, technological and environmental challenges. Despite steady economic progress, food insecurity and under-nutrition and sustainability remain recognized health challenges in Pakistan. According to FAO (2020), the urban-rural analysis within each province for year 2018-19 shows that households living in the rural areas of Sindh have moderate or severe food insecurity (29.9 percent) followed by rural households in Balochistan (18.1%), Punjab (18%) and KP (16.3%). In Pakistan although food is easily available, but country's overall food security situation is poor. High levels of poverty and high food prices have placed Pakistan as a country facing malnutrition, undernourishment and childhood stunting in the world.

### **D. Opportunities of Pakistan's' agriculture sector**

#### **Mechanization**

Augmented farm mechanization is an essential technological tool to achieve the higher

development of agriculture sector in the field of operations (Abbas *et al.*, 2017). Traditionally, Pakistani farmers performed most of the farm operations (land preparation, land levelling, tillage, sowing) either manually or using different draught animals. Due to these factors past yield was lower as compared to current years (Yamin *et al.*, 2011). Currently, a very major reason is the non-availability of the appropriate agricultural machines at the right time and at affordable prices to the farmer community (GoP, 2020).

### **Rural infrastructure**

Public investment in rural areas is an important tool of public capital to improve the quality of human capital through improved health facilities and rural infrastructure deficiencies. Better infrastructure is key to poverty alleviation in rural farming by development of labor market through income (farm and non-farm) generating opportunities and lowers the cost of either agricultural inputs or purchased goods (Akbar *et al.*, 2022). Quality life and education are the major concerns of the rural community. Butt (1984) found that the productivity of farmers with secondary schooling (used as a proxy for quality education) was significantly higher than the productivity of farmers with only primary education. Education was also positively correlated with fertilizer use and modern technologies adoption.

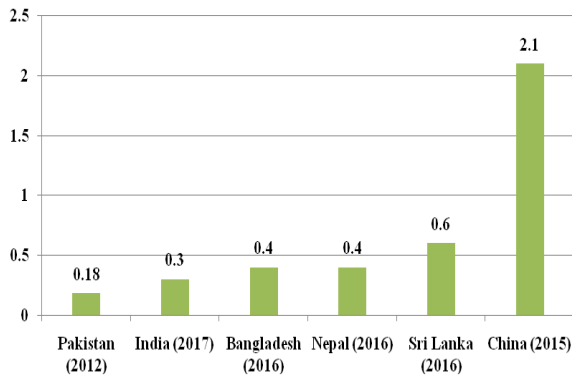
### **Modern cultivation technologies**

Productivity of agriculture sector can be increased with the adoption of new technologies. Farmers training programs are necessary for new technology adoption because in rural areas only T.V and radio are only mean of communication. So, awareness among farmers can be created by increasing the programs related to new agricultural techniques through T.V and radio. These programs should be telecasted in regional languages. It was reported that 65% farmers listened to radio programs while 63% farmer's viewer of agriculture programs on TV (Saleem *et al.*, 2021).

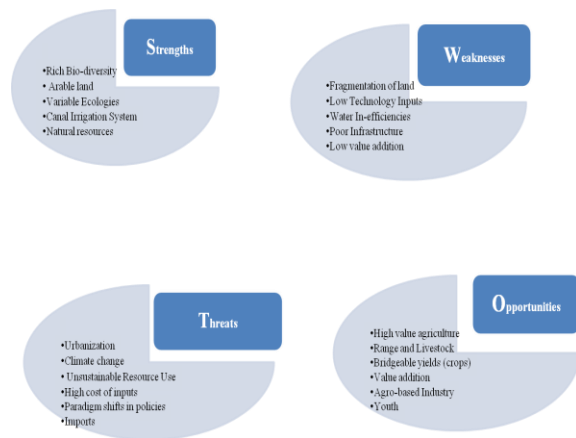
### **Low investment in research and development (R and D)**

Pakistan (due to a lot of agricultural problems) had not been capable to invest in research and development (R and D) in sub-sectors of agriculture. The more intimidating concerns are lack of investment in research and development in the agriculture sector, delinking of agriculture researchers from the private sector and

government. Pakistan is one of the countries with the lowest investment rates in R and D spending as percentage of agriculture GDP in Asian region (Figure 5).



**Figure 5.** Agriculture R and D spending as % of agriculture GDP  
Source: Agricultural Science and Technology Indicators, IFPRI, Washington ([www.asti.cgiar.org](http://www.asti.cgiar.org))



**Figure 6.** Pakistan agriculture - SWOT analysis

## CONCLUSION AND RECOMMENDATIONS

Since its inception, Pakistan has been struggling to achieve the dream of economic growth, development, and prosperity. Agriculture is still the largest sector of the economy of Pakistan by engaging the largest work force and providing raw material to most manufacturing sector. During FY 2020, the performance of the agriculture sector improved over the last year, and it also performed better than other sectors. Despite of all this it is also facing the challenges due to climate change, pest attacks and shortage of water etc., kept agriculture production far less than the potential. Considering its potential, agriculture sector has the ability to not only to feed the domestic

population but to have surplus production for exports, which can ensure food security as well as add foreign reserve. The process to boost up the Pakistani agriculture can be summarized as follows:

Government should change its mode of spending from direct subsidies scheme to research and development activates, generation of new technologies (like seed varieties development and breeds), improved cold storage facilities, upgrading rural infrastructure, capacity building of stakeholders, establishment of agricultural research institutes, develop linkages between public-private partnership (PPP) to uplift this sector.

In history, every government offered several agriculture credit schemes, but the outcomes of these schemes were not fruitful. The interest rates of these plans were very high or not in line with the farmer's Islamic values. So, there is a need to revisit the terms and conditions of these schemes to get the desired results.

Government should give investment priority to up-scale the road infrastructure and quality transport system. It will encourage the private sector to setting up the food and fruit processing industry on a wider scale.

There is need to re-structuring of markets in accordance with the requirement of farmers, especially small farmers, market facilities should be upgraded and modernized. Policy makers should formulate farmer friendly policies and middlemen's intervention should be minimized.

## Novelty statement

Agriculture is the one of most important pillar of Pakistan economy. SWOT analysis is a unique kind of analysis to bring out the strengths, weaknesses, opportunities and threats of any business or sector. There are several studies conducted on determinant factors of this analysis on worldwide level, but some studies are available focusing on the agriculture sector in Pakistan. It is a relatively updated study to cover the overall agriculture aspect.

## CONFLICT OF INTEREST

The authors have declared no conflict of interest.

## AUTHOR'S CONTRIBUTION

**S. Batool:** Developed the idea, designed study, compiled data, wrote and finalized manuscript.

**M. Nazir:** Analyzed the data, reviewed the literature and final editing of the manuscript.

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