



# Wheat Market Instability in Afghanistan: A Case Study of Kabul, Mazar-e-Sharif, Bamyan and Ghor Provinces

**ZAIGHAM KAZIMI\***

*Tokyo University of Agriculture, Tokyo, Japan  
Email: s.z.kazimi@gmail.com*

**MOHAMMAD ESHAQ RASEKH**

*Tokyo University of Agriculture, Tokyo, Japan*

**SAYED REZA HASHEMI**

*Bamyan University, Bamyan, Afghanistan*

**SAYED JALIL HASHIMI**

*Bamyan University, Bamyan, Afghanistan*

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**Abstract** Wheat is the major crop and staple food in Afghanistan. Though it is a strategic crop in the country, the nation has never been self-sufficient in wheat domestic production. Yet as a wheat deficit country, it has been highly reliant on wheat and flour imports together with international humanitarian food aids. Thereby, such tremendous dependency on external sources has often led to considerable wheat price fluctuations in Afghan wheat markets associated with imports superfluity or distortions over the years. However, despite the overall weak performance of wheat market in Afghanistan since 2001, the country has got somehow relative stability in this regard over the recent years. Therefore, this study was conducted to address the hurdle through a holistic fashion focusing on both wheat domestic production as well as market aspects in Afghanistan. For production, the study was designed to detect the key underlying factors behind wheat domestic production shortfalls, and for market analysis, wheat price trend was evaluated to determine better policy options so that Afghanistan can achieve better functioning wheat markets in the long run. After all, the findings of this study suggest that there are five mutually exclusive key common factors (invisible factors) behind wheat domestic production quantity and quality failure. Moreover, regarding wheat market stability, Pakistan has been identified as the key disruptive player in the beginning while the Central Asian countries particularly Kazakhstan has recently been the key contributor to wheat market stability in Afghanistan. Therefore, beside concrete policies to boost wheat domestic production within the country, stronger trade ties with Kazakhstan certainly ensure better wheat market performance in Afghanistan.

**Keywords** Afghanistan, wheat market, fluctuations, price stability

## INTRODUCTION

According to CSO (2016-17), with an area of 2.9 million ha under cultivation, cereals production encompasses approximately 37 percent of the country's total arable land from which nearly 79 percent (2.3 million ha) is allocated for wheat production. Furthermore, with a per capita consumption of 170 kg per year mostly in the form of flatbread called "Nan" and contributing to roughly 60 percent of national daily calorie intake in average, wheat plays a vital role in terms of food security in the country (FAO and EU 2013).

Currently, food security is tremendously subject to families' access to wheat all across the nation, hence, any policy adoption to ensure its year-round availability seemingly achieves food security to a great extent in the country. A study conducted by D'Souza and Jolliffe (2012)

suggests that due to shortcomings with their own production and weak purchasing power from the market, most of the afghan families adjust themselves by wheat consumption quantity and quality decline approach in order to deal with food shortage pressures. Therefore, such adaptations entail serious food insecurity exposures particularly among the most vulnerable population portions such as pregnant and breastfeeding women, the elderly and children.

Afghanistan has been a wheat deficient country over the decades. Thus, to fill the market supply-demand gap, the country has been highly dependent on wheat and flour imports from a number of countries in the region mostly Kazakhstan and Pakistan together with huge amounts of international humanitarian food aids. Therefore, such enormous dependency has often led to considerable wheat price fluctuations in Afghan wheat markets associated with imports superfluity or distortions from the external sources especially from Pakistan.

Exerting insincere trade policies on wheat and flour exports, Pakistan has been a hypocritical trade partner with Afghanistan for many years. Dumping its old stocks to Afghan wheat markets discouraged local producers off-site. As well as, imposing politically driven frequent trade bans Pakistan has often disrupted wheat market functionality in Afghanistan (Samim, 2016). For instance, Pakistan's strong ban on wheat and flour export to Afghanistan in 2008 led to wheat price extreme inflation (AFN 28.8/ kg) a price increase greater than a100 percent compared to its preceding year (AFN 13.7/ kg) (WFP VAM, 2017). According to WFP's monthly report, the overall trend of wheat retail price tends to be very low from 2001 to 2007 (a disincentive to local producers), highly volatile from 2008 to 2014 (a big concerns for consumers), and yet relatively stable from 2015 onwards. Hence, this study is to investigate the key underlying factors behind wheat markets failures as well as the recent relative stability.

## **OBJECTIVE**

This research was designed to break the problem (Wheat Market Instability) down into two distinct but interlinked aspects defined as Wheat Domestic Production and Wheat Market in Afghanistan. Hence, within the scope of this study, we tried to target the problem through a holistic fashion targeting both of the research aspects concurrently in order to detect the most fundamental factors behind the problem as well as the most potential policy options for further progress in the long run. Therefore, this study was conducted to answer the following two questions.

1. What are the key underlying factors leading to wheat domestic production quantity and quality failure?
2. How can Afghanistan ensure a stable wheat market in favor of both consumers and producers in the long run?

## **METHODOLOGY**

For data collection, we applied semi-structured questionnaires for our interviews and discussions with wheat farmers, wheat and flour traders and wheat consumers. Hence, using multistage sampling and focus group methods, in total, we interviewed with 62 wheat farmers, 31 wheat traders (Wholesalers and Retailers) and 69 wheat consumers in the provinces mentioned earlier. For data analysis, using SPSS, we ran Factor Analysis ( $X_k = b_{k1}F_1 + b_{k2}F_2 + \dots + b_{km}F_m + E_k$ ) to detect the core underlying factors (Invisible Factors) behind wheat domestic production malfunction given the predominant challenges (Symptoms) against wheat farmers in Afghanistan. For market analysis, we ran Pearson Correlation Coefficient to examine wheat markets integration between Afghanistan and its trade partners as well as the central and local ones within the country.

## **RESULTS AND DISCUSSION**

### **Wheat Production in Afghanistan**

Wheat production in Afghanistan is closely subject to precipitation circumstances of the year. Given high uncertainty of spring rainfall and the concomitant variability of yield from the rain-fed areas, output from the irrigated lands is considered as the main source of wheat domestic supply in the country. A study carried out by Rajiv et al (2011) argues that in a normal year, nearly 45 percent of land allocated for wheat production is brought under irrigation which contributes to roughly 70 percent of national wheat production while the remaining 55 percent of the area highly depends on spring rainfall and accounts for the rest 30 percent of the domestic wheat supply.

Wheat production in Afghanistan faces a number of natural calamities and man-induced challenges leading to its poor functionality in terms of both quantity and quality. Thus, since we got too many similar and mutually inclusive feedbacks from wheat farmers during our interviews and discussions, we came up with factor analysis application so that we can categorize these challenges (symptoms) into bunches of the same root, thereby, discovering the key underlying common factors (invisible factors) inducing these hindrances. Table 1 shows that there are five major common factors from which these challenges arise.

**Table 1 Total variance explained**

Component	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	3.660	28.153	28.153	3.660	28.153	28.153	3.536	27.199	27.199
2	2.832	21.787	49.940	2.832	21.787	49.940	2.494	19.186	46.386
3	1.844	14.181	64.120	1.844	14.181	64.120	1.822	14.012	60.397
4	1.291	9.930	74.051	1.291	9.930	74.051	1.515	11.655	72.053
5	1.081	8.312	82.363	1.081	8.312	82.363	1.340	10.310	82.363
6	.814	6.262	88.625						
7	.525	4.041	92.666						
8	.299	2.297	94.963						
9	.268	2.059	97.022						
10	.186	1.433	98.456						
11	.119	.915	99.370						
12	.061	.468	99.838						
13	.021	.162	100.000						

*Extraction Method: Principal Component Analysis. n = 62*

*Source: Own calculation*

Although Table 1 explicitly detects five underlying factors behind the challenges against wheat production in Afghanistan with their respective and total explaining power, it does not provide any precise details on each of the factor's nature and existence. Hence, in order to know what the factors are exactly, Table 2 gives the ultimate response to this question.

**Table 2 Rotated Component Matrix<sup>a</sup>**

	Component				
	1	2	3	4	5
Wheat loss induced by shortage of irrigation water on a Jerib of land (kg)	.212	<b>.903</b>	.063	.183	-.097
Wheat yield loss associated with land problems on a Jerib of land (kg)	-.094	.465	.182	<b>.733</b>	.035
Potential yield increase given credit services are available (kg/ Jerib)	<b>.739</b>	-.091	-.257	.293	.462
Enough access to certified seeds	.057	-.218	-.272	<b>.839</b>	.127
Potential yield increase given enough certified seeds are available (kg/ Jerib)	<b>.926</b>	-.067	.149	-.005	-.100
Total amount of fertilizers wheat farmers apply on a Jerib of land (kg)	-.144	<b>.888</b>	-.156	-.202	.060
Enough application of fertilizers	-.038	.085	<b>.679</b>	.046	.353
Pesticides application by wheat farmers	<b>.885</b>	-.161	-.166	-.137	.181
Wheat farmers membership to any farmers' organization	-.008	-.065	-.032	-.089	<b>.950</b>
Wheat farmers receiving extension services	-.818	-.239	-.392	-.192	.131
Wheat farmers market motivation	-.738	-.030	.305	.073	.059
Wheat farmers having off-farm jobs	.236	-.786	.028	.186	.065
Wheat farmers' formal education	.039	.459	<b>.742</b>	.087	-.048

*Extraction Method: Principal Component Analysis. n = 62*

*Rotation Method: Varimax with Kaiser Normalization.*

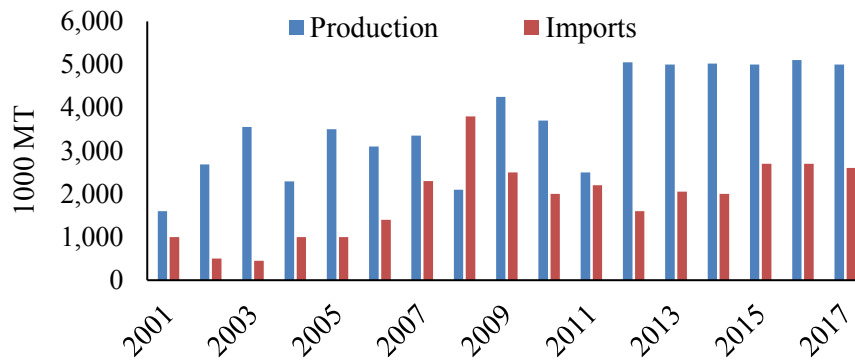
*a. Rotation converged in 6 iterations.*

*Source: Own calculation*

As shown in bold in Table 2, three symptoms fall under factor 1, two symptoms fall under factor 2, two symptoms fall under factor 3, two symptoms fall under factor 4 and finally, one symptom falls under factor 5. Thus, considering the linkage among the symptoms under each category, we can interpret that the factors are seemingly going to be weak financial status, irrigation water use inefficiency, farmers' low level of knowledge, low land productivity and farmers' individuality respectively. Principally, the symptoms (existing hindering challenges) shown in Table 2 are mostly collinear with each other and have loading coefficients somehow with all of the recognized factors. However, factor analysis categorizes them into same groups and introduces mutually exclusive factors containing the symptoms with the highest loadings.

### **Wheat Market in Afghanistan**

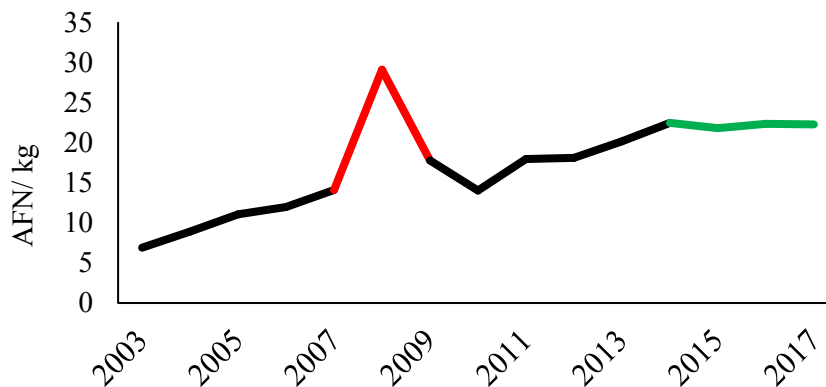
Afghanistan has been a wheat deficit country associated with domestic production shortfalls. Thus, to fill the supply-demand gap, the country has been highly dependent on wheat imports from a number of countries in the region such as Kazakhstan, Pakistan, Uzbekistan, Iran and others together with huge amounts of international humanitarian food aids for many years. Although wheat production has significantly increased over the recent years in Afghanistan, still domestic supply is far below its market demand in the country. Figure 1 shows that even during the most favorable year (2016) for domestic production, still the country imports more than 2.5 million MT of wheat and flour from the external sources.



**Fig. 1 Wheat production and import trends in Afghanistan**

Source: USDA, PSD online database

After the collapse of Taliban regime in 2001 and the establishment of interim government in Afghanistan, Pakistan used to be the major supplier of wheat and flour to Afghanistan due to historically close transactions background coupled with the long shared borderline of 2,640 km between the two nations. However, exerting hypocritical trade policies over the years as explained earlier, the country was a major player of wheat market instability in Afghanistan, too. Therefore, its consistent exploitive trade policies led to stronger trade ties between Afghanistan and the Central Asian countries particularly Kazakhstan, and as a consequence, wheat price relative stability over the recent years. Fig. 2 illustrates average wheat retail price fluctuations in Afghanistan since 2003.



**Fig. 2 Average wheat retail price in Afghanistan**

Source: WFP VAM, Food Security Analysis

As shown in Fig. 2, Pakistan’s double-faced trade policies drove significant fluctuations in wheat price over more than one decade with unprecedented shock in 2008. On the other hand, Afghanistan’s access to Kazakhstan’s (one of the top ten wheat-exporting countries in the world) wheat stocks through trade negotiations has recently ensured relative stability in this regard. Pakistan lost its wheat market concentration in Afghanistan in favor of Kazakhstan due to two main reasons: First, Kazakhstan has the least wheat export variability in the region, and second, its products are by far better in quality and flow safety compared to those of Pakistan.

To confirm the scenario, we considered wheat markets integration through linear correlation between Afghanistan and some of its major trade partners. Table 3 shows that since 2009 onwards, in general, wheat markets in Afghanistan move more closely with those in Kazakhstan rather than in Pakistan. Therefore, it explicitly implies that any positive or negative changes in Afghan wheat markets since 2009 are more because of wheat exports from Kazakhstan rather than Pakistan.

**Table 3 Afghanistan's wheat market integration with its trade partners (2009 – 2016)**

	Afghanistan	Kazakhstan	Pakistan	Iran
Afghanistan	1			
Kazakhstan	<b>.582</b>	1		
Pakistan	.349	.258	1	
Iran	.331	-.159	-.395	1

Source: For Afghanistan wheat price (WFP VAM) and for the others (FAOSTAT)

## CONCLUSION

Unless food diversification policies and programs in the long-run, for the time being, wheat is the mainstay of food security in Afghanistan. Hence, any policy option to ensure its year-round availability, achieves food security to a great extent in the country. Despite significant progress over the recent years, still wheat domestic production is far below its market demand and as a result, Afghanistan imports huge amounts of wheat and flour annually to fill the market supply-demand gap. There are five key underlying factors namely, weak financial status, irrigation water use inefficiency, farmers' low level of knowledge, low land productivity and farmers individuality respectively leading to wheat production malfunction in the country. Therefore, unless these factors are addressed concretely, Afghanistan will never reach self-sufficiency in this regard. Moreover, regarding wheat imports, Pakistan's unfair trade policies mostly due to politics has been one of the key factors behind wheat market instability in Afghanistan while the Central Asian countries particularly Kazakhstan has recently emerged as an effective trade partner with Afghanistan by supplying more stable and higher quality products to Afghan wheat markets.

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