TOSHKENT DAVLAT AGRAR UNIVERSITETI

Leibniz-Institut für Agrarentwicklung in Transformationsökonomien

The impact of Climate Change on wheat productivity at district level in Uzbekistan

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Outline

I. Introduction

-Problem statement

-Objective

II. Methodology

III. Preliminary results

IV. Conclusion

I. Introduction

Background of study

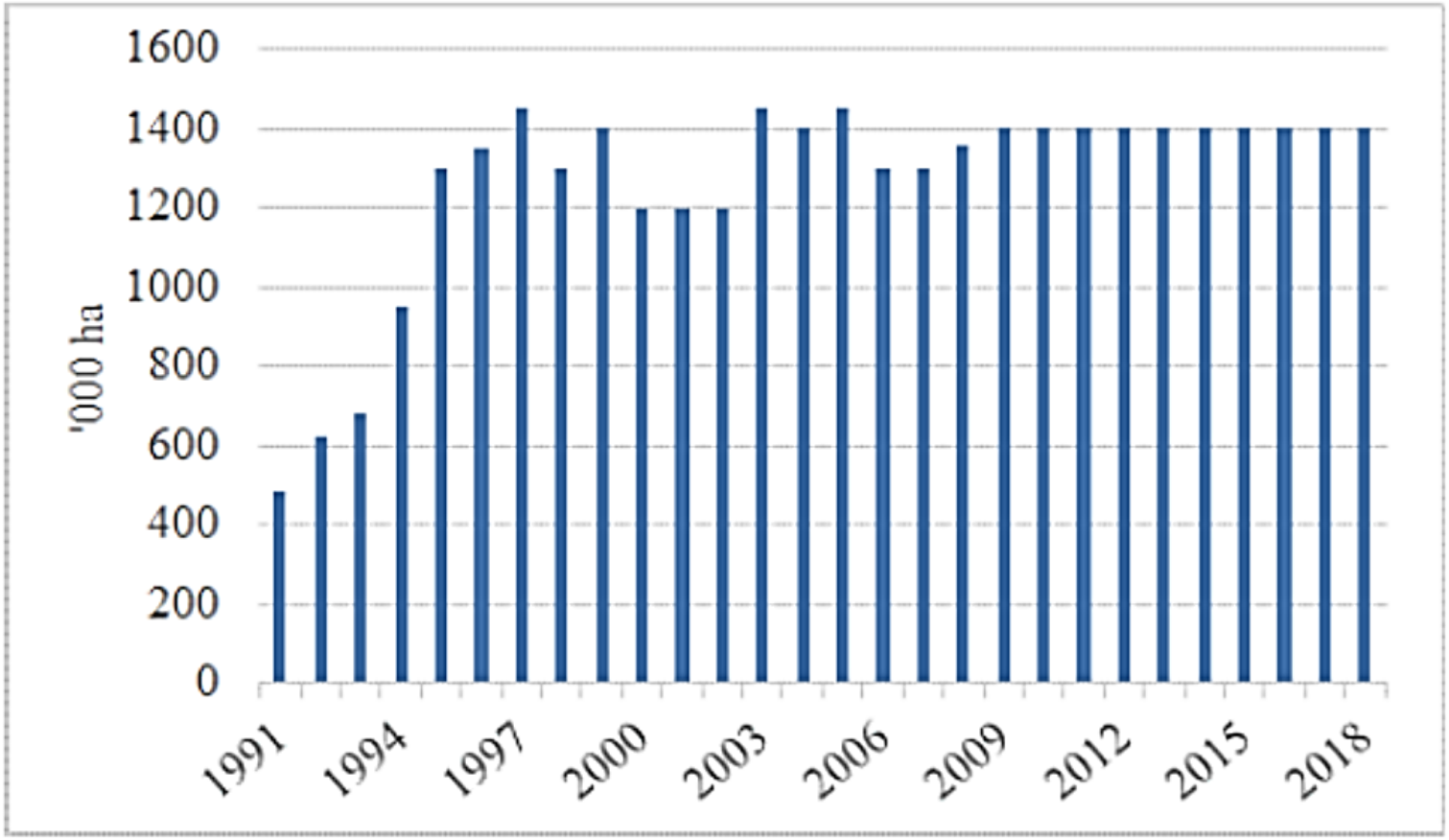
- Agricultural production is a backbone for the economy of Uzbekistan.
- Wheat is second crop after cotton occupied agricultural land which is most important cereal crop.
- Climate Change impacts on crop yield and its productivity (Ahmad, M et al 2014; Hatfield et al, 2015; Smith, A. R., & Zhao, D 2016; Sommer et al 2013; Chakrabarti et al 2011; Mirzaboev,2013)

Figure 1. Map of Uzbekistan

Sourse: https://caravanistan.com/border-crossings/uzbekistan/

I. Introduction (cont.)

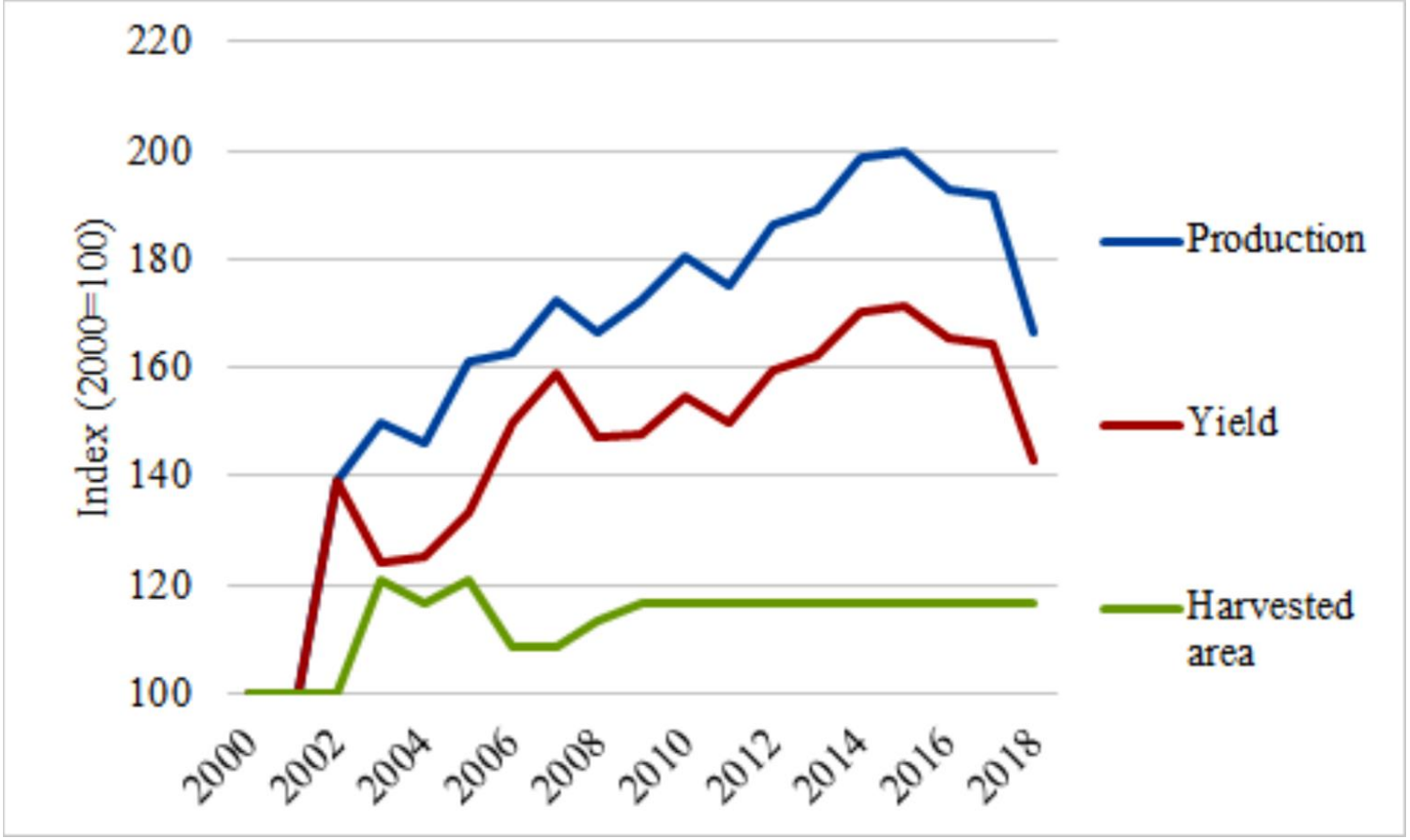
Table 1. Land under wheat production, 1991-2018



Source: WB, 2019

I. Introduction (cont.)

Table 2. Wheat area, yield, and production, 2000-2018



Source: WB, 2019

Wheat production 609,500 tons in 1991 to 7,2 million tons in 2015 (stat.uz 2017). Due to low levels of rainfall declined wheat output by 15% in 2018. (FAOSTAT,2018)

I. Introduction (cont.)

Table 3. Farmland distribution by wheat yield, 2017

	Yields,tons/ha						
Regions	1.0-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-7.0	>7.1
Karakalpakstan	5.4	57.0	28.5	7.3	1.8	0.0	0.0
Andijan	0.4	1.3	12.5	9.6	18.3	48.8	9.1
Bukhara	0.0	0.8	7.5	14.7	27.0	41.5	8.6
Kashkadarya	0.0	2.6	9.1	15.9	23.7	34.1	14.7
Navoi	0.6	3.0	15.5	26.0	24.1	22.9	8.0
Namangan	0.4	1.2	4.0	11.4	35.2	21.6	26.1
Samarkand	0.0	2.1	12.9	32.6	35.6	16.8	0.0
Surkhandarya	0.0	0.9	18.9	37.5	31.8	10.9	0.0
Syrdarya	0.3	5.8	20.6	32.7	31.9	8.8	0.0
Tashkent	0.0	3.9	6.1	15.7	39.2	35.0	0.0
Fergana	0.8	2.5	5.6	10.8	19.4	24.1	36.8
Khorezm	1.0	1.7	9.1	33.1	38.7	13.5	2.9
Total	**0.5%**	**5.3 %**	**11.7%**	**20.2%**	**27.8%**	**24.6%**	**9.7%**

Source: WB, 2019

V. Preliminary results

Table 4.

Ln Production	coefficient	Standard error	t-value	P-value
Ln Temperature	0.0403	0.0334	1.21	0.227
Ln Precipitation	0.0616***	0.0150	4.09	0.000
Ln Land	0.0097	0.0161	0.60	0.548
Ln Labour	0.0802***	0.0099	8.05	0.000
Ln Kap (other)	0.3010***	0.0131	22.87	0.000
Ln Input (other)	0.6492***	0.0200	32.41	0.000
cons	1.6863***	0.1041	16.19	0.000
Number of observations	1,477			

Note: Indicate significance at 1% level

VI. Conclusion

- This study observed and reviewed latest trend of wheat production system under climate change.
- As analysis the result shows that the precipitation affects wheat production, therefore decision makers should take into account in future.
- In addition to precipitation, labour, kapital and intermediate inputs are found to have statistically significant influence on wheat production under selected sample size.
- There need still more research to adapt of climate changes impacts.

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Thank you for your attention!