

Adapting agricultural water use to climate change in a post-Soviet context: challenges and opportunities in southeast Kazakhstan

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Adapting agricultural water use to climate change in a post-Soviet context: challenges and opportunities in Southeast Kazakhstan

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Authors: Tristram Barrett ^{1 2}, Giuseppe Feola ^{1 *}, Marina Khusnitsdinova ³, Krylova Viktoria ³

¹ University of Reading, Department of Geography and Environmental Science

² Max Planck Institute for Social Anthropology

³ Kazakh Institute of Geography

* Corresponding author

Department of Geography and Environmental Science, University of Reading, Whiteknights,
RG6 6AB Reading, United Kingdom, g.feola@reading.ac.uk, 0044 118 3787496

Table A1. Challenges to water use in agriculture in Koram and Karaoi.

Study site	Challenge	Problem area	Mentions in individual cards (Exercise 1)	Total mentions in group cards (Exercise 2)	Small holders		Middle and large holders		NGOs and agrobusinesses		Scientists		State structures	
					Ranking		Ranking		Ranking		Ranking		Ranking	
					Mentions	positions	Mentions	positions	Mentions	positions	Mentions	positions	Mentions	positions
Koram	Inadequate water supply	Water supply	9	2	-	-	1	4	1	3	-	-	-	-
	Untimely water supply		11	4	2	1, 5	2	1, 5	-	-	-	-	-	-
	Water supply rules		11	3	1	3	-	-	-	-	-	-	2	2, 4
	Poor infrastructure/maintenance	Poor infrastructure	20	3	-	-	1	2	-	-	1	2	1	1
	No/bad consumption measurement		8	3	1	2	-	-	1	5	-	-	1	3
	High water prices	High water prices	4	3	1	4	1	3	1	2	-	-	-	-
	Bad soil cultivation	Other	1	1	-	-	-	-	-	-	1	5	-	-
	Climate change		2	1	-	-	-	-	-	-	-	-	1	5
	Irrigation practices		3	-	-	-	-	-	-	-	-	-	-	-
	Lack of knowledge		6	-	-	-	-	-	-	-	-	-	-	-
	Lack of irrigation technology		2	-	-	-	-	-	-	-	-	-	-	-
	Land use		4	-	-	-	-	-	-	-	-	-	-	-
	Little penetration of new crops		1	1	-	-	-	-	-	-	1	4	-	-
	No problem		2	-	-	-	-	-	-	-	-	-	-	-
	No science-user connection		1	1	-	-	-	-	-	-	1	3	-	-
	Other		5	-	-	-	-	-	-	-	-	-	-	-
	Reducing water stock		2	1	-	-	-	-	-	-	1	1	-	-
	Salinisation		1	-	-	-	-	-	-	-	-	-	-	-
	Water losses		5	2	-	-	-	-	2	1, 4	-	-	-	-
	Water quality		2	-	-	-	-	-	-	-	-	-	-	-
Study site	Challenge	Problem area	Mentions in individual cards (Exercise 1)	Total mentions in group cards (Exercise 2)	Small holders		Middle and large holders		NGOs		Agrobusinesses		State structures	
					Ranking		Ranking		Ranking		Ranking		Ranking	
					Mentions	positions	Mentions	positions	Mentions	positions	Mentions	positions	Mentions	positions
Karaoi	Inadequate water supply	Water supply	16	4	-	-	3	1, 2, 3	-	-	1	3	-	-
	Poor infrastructure/maintenance	Poor infrastructure	21	5	1	1	-	-	1	2	1	2	2	1, 3
	Lack of irrigation technology	Lack of technology	7	3	1	5	-	-	-	-	-	-	2	4, 5
	Climate change	Other	2	1	-	-	-	-	-	-	1	4	-	-
	Corruption		1	-	-	-	-	-	-	-	-	-	-	-
	High water prices		3	1	-	-	-	-	-	-	1	1	-	-
	Irrigation practices		3	-	-	-	-	-	-	-	-	-	-	-
	Labour intensity		1	-	-	-	-	-	-	-	-	-	-	-
	Lack of financial resources		1	-	-	-	-	-	-	-	-	-	-	-
	Lack of knowledge		1	-	-	-	-	-	-	-	-	-	-	-
	Lack of technical personnel		2	1	-	-	-	-	1	5	1	5	-	-
	Land use		2	-	-	-	-	-	-	-	-	-	-	-
	Loss of Soviet irrigation system		1	1	-	-	1	5	-	-	-	-	-	-
	No/bad consumption measurement		2	1	-	-	-	-	1	4	-	-	-	-
	Non rational water use		1	1	-	-	-	-	1	1	-	-	-	-
	Other		3	-	-	-	-	-	-	-	-	-	-	-
	Water supply rules		11	2	1	2	-	-	1	3	-	-	-	-
	Untimely water supply		1	1	1	4	-	-	-	-	-	-	-	-
	Water losses		2	2	1	3	-	-	-	-	-	-	1	2
	Water quality		3	1	-	-	1	4	-	-	-	-	-	-