# Appendix



**Fig. 1A.** The structure of land used by respondents

*Note*: The large share of private land among Kazakh farmers does not reflect the actual land structure on the country level. Only 1.4 per cent of total agricultural land in Kazakhstan has been so far privatized.



**Fig. 2A.** Percentages of responses to the question about the willingness to increase production

**Table 1A.** Descriptive statistics of actual practices and discrepancies

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| --- |
| 1. Kazakh landowners (N=337)
 |
|  | **Actual practices** | **Discrepancy** |
| **Right** | **Min** | **Max** | **Mean** | **St. Dev.** | **Min** | **Max** | **Mean** | **St. Dev.** |
| Access | 1 | 5 | 4.887 | 0.377 | 0 | 4 | 0.113 | 0.377 |
| Withdrawal | 1 | 5 | 4.727 | 0.553 | 0 | 4 | 0.273 | 0.553 |
| Land use change | 1 | 5 | 4.546 | 0.960 | -2 | 2 | -1.546 | 0.960 |
| Management | 1 | 5 | 4.737 | 0.589 | 0 | 4 | 0.263 | 0.589 |
| Investment | 1 | 5 | 4.700 | 0.665 | 0 | 4 | 0.300 | 0.665 |
| Exclusion | 1 | 5 | 4.674 | 0.835 | 0 | 4 | 0.326 | 0.835 |
| Income generating | 1 | 5 | 4.721 | 0.612 | 0 | 4 | 0.279 | 0.612 |
| Reallocation | 1 | 5 | 4.009 | 1.507 | 0 | 4 | 0.991 | 1.507 |
| Sell | 1 | 5 | 4.208 | 1.459 | 0 | 4 | 0.792 | 1.459 |
| Renting out | 1 | 5 | 4.312 | 1.280 | 0 | 4 | 0.688 | 1.280 |
| Leasing from land tenants | 1 | 5 | 4.258 | 1.266 | -4 | 0 | -3.258 | 1.266 |
| Inheritance | 1 | 5 | 4.558 | 0.947 | 0 | 4 | 0.442 | 0.947 |
| Protection by courts | 1 | 5 | 3.630 | 0.941 | 0 | 4 | 1.370 | 0.941 |
| Power of land certificates | 1 | 5 | 4.682 | 0.833 | 0 | 4 | 0.318 | 0.833 |

|  |
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| 1. Kazakh landleasers (N=165)
 |
|  | **Actual practices** | **Discrepancy** |
| **Right** | **Min** | **Max** | **Mean** | **St. Dev.** | **Min** | **Max** | **Mean** | **St. Dev.** |
| Access | 3 | 5 | 4.897 | 0.343 | 0 | 2 | 0.103 | 0.343 |
| Withdrawal | 2 | 5 | 4.685 | 0.561 | 0 | 3 | 0.315 | 0.561 |
| Land use change | 1 | 5 | 4.673 | 0.664 | -2 | 2 | -1.673 | 0.664 |
| Management | 2 | 5 | 4.758 | 0.404 | 0 | 3 | 0.242 | 0.404 |
| Investment | 2 | 5 | 4.618 | 0.694 | 0 | 3 | 0.382 | 0.694 |
| Exclusion | 1 | 5 | 4.248 | 1.280 | 0 | 4 | 0.752 | 1.280 |
| Income generating | 3 | 5 | 4.752 | 0.511 | 0 | 2 | 0.248 | 0.511 |
| Reallocation | 1 | 5 | 2.503 | 1.568 | -4 | 0 | -1.503 | 1.568 |
| Sell | 1 | 5 | 2.667 | 1.839 | -4 | 0 | -1.667 | 1.839 |
| Renting out | 1 | 5 | 3.000 | 1.718 | -4 | 0 | -2.000 | 1.718 |
| Leasing from land tenants | 1 | 5 | 3.024 | 1.522 | -4 | 0 | -2.024 | 1.522 |
| Inheritance | 1 | 5 | 3.558 | 1.730 | 0 | 4 | 1.442 | 1.730 |
| Protection by courts | 1 | 5 | 3.469 | 0.900 | 0 | 4 | 1.531 | 0.900 |
| Power of land certificates | 1 | 5 | 4.485 | 0.853 | 0 | 4 | 0.515 | 0.853 |

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| 1. Farmers in Uzbekistan (N=460)
 |
|  | **Actual practices** | **Discrepancy** |
| **Right** | **Min** | **Max** | **Mean** | **St. Dev.** | **Min** | **Max** | **Mean** | **St. Dev.** |
| Access | 1 | 5 | 4.915 | 0.427 | 0 | 4 | 0.085 | 0.427 |
| Withdrawal | 1 | 5 | 2.502 | 1.542 | 0 | 4 | 2.498 | 1.542 |
| Land use change | 1 | 5 | 1.470 | 0.927 | -4 | 0 | -0.470 | 0.927 |
| Management | 1 | 5 | 2.917 | 0.746 | -2 | 2 | 0.083 | 0.746 |
| Investment | 1 | 5 | 4.291 | 1.078 | -2 | 2 | -1.291 | 1.078 |
| Exclusion | 1 | 5 | 4.530 | 1.146 | 0 | 4 | 0.470 | 1.146 |
| Income generating | 1 | 5 | 1.572 | 0.964 | 0 | 4 | 3.428 | 0.964 |
| Reallocation | 1 | 5 | 1.339 | 0.694 | -4 | 0 | -0.339 | 0.694 |
| Sell | 1 | 2 | 1.004 | 0.066 | -1 | 0 | -0.004 | 0.066 |
| Renting out | 1 | 3 | 1.265 | 0.540 | -2 | 0 | -0.265 | 0.540 |
| Leasing from land tenants | 1 | 5 | 1.178 | 0.497 | -4 | 0 | -0.178 | 0.497 |
| Inheritance | 1 | 5 | 1.609 | 0.888 | -4 | 0 | -0.609 | 0.888 |
| Protection by courts | 1 | 5 | 3.071 | 0.654 | 0 | 4 | 1.929 | 0.654 |
| Power of land certificates | 1 | 5 | 4.180 | 0.871 | 0 | 4 | 0.820 | 0.871 |

*Source*: based on assessment of land rights and survey dataset.

**Table 2A.** Tests for the first stage regressions of 2SCML

|  |  |  |
| --- | --- | --- |
| **Endogenous Variable** | **F test** | **Breusch-Pagan test** |
| Access positive | 18.57\*\*\* | 86.48\*\*\* |
| Withdrawal positive | 168.67\*\*\* | 182.22\*\*\* |
| Use change positive  | 1792.83\*\*\* | 0.00 |
| Use change violation  | 50.43\*\*\* | 295.90\*\*\* |
| Management positive | 14.25\*\*\* | 2.48 |
| Management violation | 1465.53\*\*\* | 0.61 |
| Investment positive | 17.36\*\*\* | 259.52\*\*\* |
| Investment violation | 4407.24\*\*\* | 12.55\*\*\* |
| Exclusion positive | 11.77\*\*\* | 213.19\*\*\* |
| Income generating positive | 281.76\*\*\* | 190.54\*\*\* |
| Reallocation positive | 1532.43\*\*\* | 5.52 \*\* |
| Reallocation violation | 21.62\*\*\* | 149.71\*\*\* |
| Sell positive | 1185.21\*\*\* | 9.66\*\*\* |
| Sell violation | 820.01\*\*\* | 21.17\*\*\* |
| Renting out positive | 1363.39\*\*\* | 9.07\*\*\* |
| Renting out violation | 58.80\*\*\* | 120.54\*\*\* |
| Lease from land tenants, violation | 245.48\*\*\* | 655.73\*\*\* |
| Inheritance positive | 2379.84\*\*\* | 10.34\*\*\* |
| Inheritance violation | 1625.33\*\*\* | 0.70 |
| Protection by courts positive | 14.35\*\*\* | 52.38\*\*\* |
| Power of land certificates, positive | 12.85\*\*\* | 160.72\*\*\* |