**Appendix**

**Table A1: Average N fertilizer applied in rice (in kg ha-1)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Study sites | Urea (A) | DAP (B) | Manure | Total N |
| 0.5%N (C) | 2%N (D) | A+B+C | A+B+D |
| Haryana | 144.9 | 23 | 9.51 | 37.98 | 177.4 | 205.88 |
| Bihar | 96.6 | 17.1 | 4.625 | 18.5 | 118.3 | 132.2 |
| Nepal | 94.3 | 11.6 | 6.81 | 27.24 | 112.3 | 133.14 |
| Bangladesh | 131.1 | 11.7 | 5.6 | 22.4 | 148.4 | 165.2 |

**Table A2: Average N fertilizer applied in wheat (in kg ha-1)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Study sites | Urea (A) | DAP (B) | Manure | Total N |
| 0.5%N (C) | 2%N (D) | A+B+C | A+B+D |
| Haryana | 147.2 | 22.5 | 8.4 | 33.6 | 178.1 | 203.3 |
| Bihar | 103.5 | 19.8 | 6.25 | 25 | 129.6 | 148.3 |
| Nepal | 96.6 | 14.22 | 5.15 | 20.6 | 115.9 | 131.4 |

**Table A3: Factors influencing the over-use of N from inorganic fertilzer only (kg ha-1) in rice and wheat**

|  |  |  |
| --- | --- | --- |
| Variables  | Rice | Wheat |
| *Household (HH) characteristics*  |  |  |
| Male headed HH | 0.34\*  | 0.41\*\*  |
|  | (0.18)  | (0.17)  |
| Age of HH head | 0.01  | 0.00  |
|  | (0.03)  | (0.00)  |
| Primary education (base category: illiterate) | 0.06  | 0.09  |
|  | (0.13)  | (0.11)  |
| Secondary education (base category: illiterate) | 0.09\*\*\* | 0.17\*\*  |
|  | (0.02)  | (0.09)  |
| Higher education (base category: illiterate) | 0.22\*\*  | 0.18\*\*  |
|  | (0.10)  | (0.08)  |
| Family size (AEC) | 0.32  | 0.29  |
|  | (0.38)  | (0.31)  |
| Migration | 0.07  | 0.10  |
|  | (0.08)  | (0.11)  |
| *Economic and social capital* |  |  |
| Land size  | 0.31\*\*\* | 0.42\*\*\* |
|  | (0.14)  | (0.09)  |
| Livestock owned | -0.15\*\*\*  | -0.12\*\*\* |
|  | (0.03)  | (0.04)  |
| Asset index | 0.13\*\*\*  | 0.11\*\*  |
|  | (0.04)  | (0.5)  |
| Credit access | -0.12  | -0.09  |
|  | (0.08)  | (0.13)  |
| Off-farm income | 0.09\*\*\*  | 0.06\*\*\* |
|  | (0.03)  | (0.02)  |
| Membership | 0.01  | 0.11\*\* |
|  | (0.01)  | (0.05)  |
| *Access to market, extension service and training* |  |  |
| Distance to input market | -0.16\*\*\*  | -0.19\*\*\*  |
|  | (0.05)  | (0.03)  |
| Distance to extension service | 0.05  | 0.10  |
|  | (0.07)  | (0.13)  |
| Training on fertilizer management | -0.07\*\*\*  | -0.09\*\*\*  |
|  | (0.02)  | (0.03)  |
| *Farm land characteristics*  |  |  |
| Soil fertility  | -0.08\*\*\*  | -0.07\*\*\* |
|  | (0.03)  | (0.02)  |
| Soil depth  | -0.12\*\*  | -0.15\*\*\* |
|  | (0.05)  | (0.03)  |
| Land slope | -0.15  | 0.12  |
|  | (0.12)  | (0.16)  |
| Irrigation | 0.52\*\*\*  | 0.59\*\*\* |
|  | (0.15)  | (0.14)  |
| Soil salinity | -0.10  | -0.11 |
|  | (0.08)  | (0.12)  |
| Land ownership | 0.21\*\*\*  | 0.18\*\*\* |
|  | (0.05)  | (0.06)  |
| Distance to plot | -0.11\*\*\* | -0.07\*\*\* |
|  | (0.03)  | (0.02)  |
| *Study locations dummy* |  |  |
| Haryana (base category: Nepal) | 0.43\*\*\* | 0.37\*\*\* |
|  | (0.11)  | (0.13)  |
| Bihar (base category: Nepal) | 0.21\*\*\* | 0.24\*\*\* |
|  | (0.07)  | (0.06)  |
| Bangladesh (base category: Nepal) | 0.29\*\*\* | na |
|  | (0.11 | na |
| Constant | -2.09\*\*\* | -1.85\*\*\* |
|  | (0.67)  | (0.58)  |
| LR chi (26) | 161.21 | 183.63 |
| Prob > chi2 | 0.000 | 0.000 |
| Pseudo R-Squared | 0.21  | 0.17  |
| Censored observations | 3777 | 2675 |
| Uncensored observations  | 937 | 513 |
| Total number of observations | 4712 | 3188 |

Note: Standard errors in parenthesis. \*, \*\*, and \*\* refer to 10%, 5%, and 1% level of significance, respectively. 'na’ refers to not applicable.