

## Appendix

**Table A1: Household characteristics, 1982, 1999, and 2008**

| Variables                                    | 1982   | 1999   | 2008   |
|--|--------|--------|--------|
| Head's age                                   | 51.09  | 50.07  | 51.64  |
| Head's education                             | 2.20   | 4.29   | 4.97   |
| Household size                               | 7.35   | 6.53   | 5.68   |
| No. of members >14 year old                  | 4.65   | 4.38   | 4.01   |
| Share of prime males                         | 2.26   | 2.05   | 1.77   |
| Share of prime female                        | 2.02   | 1.89   | 1.72   |
| Share of eld. Male                           | 0.22   | 0.23   | 0.27   |
| Share of eld females                         | 0.15   | 0.21   | 0.26   |
| <b>Income and Endowment</b>                  |        |        |        |
| Area owned                                   | 8.64   | 5.60   | 4.46   |
| Area cultivated (acres)                      | 9.01   | 7.18   | 6.83   |
| Share of land rental market participant (%)  | 2.42   | 3.29   | 6.09   |
| .....if yes, land (acre)                     | 6.32   | 3.71   | 2.34   |
| Share machine own                            | 0.07   | 0.20   | 0.32   |
| ... if yes, value ('000' Rs./acre)           | 6.44   | 55.40  | 64.26  |
| Total income ('000' Rs)                      | 30.71  | 65.66  | 79.97  |
| Share of income from agric.                  | 84.48  | 64.64  | 61.26  |
| <b>Labor use</b>                             |        |        |        |
| Used any labor for agric. Production         | 98.70  | 97.17  | 97.16  |
| Using family labor for agric. production (%) | 97.58  | 97.01  | 95.37  |
| Using hired labor for agric. production (%)  | 70.01  | 72.13  | 77.86  |
| Farmers worked as agric. labor (%)           | 25.06  | 20.94  | 20.29  |
| Farmers worked as non-agric. labor (%)       | 5.76   | 13.70  | 19.86  |
| Farmers with non-ag self-employment (%)      | 6.41   | 7.86   | 17.55  |
| <b>Cultivation details</b>                   |        |        |        |
| Agricultural labor (days/acre)               | 80.81  | 52.58  | 51.39  |
| Own labor (days/acre)                        | 42.67  | 44.04  | 37.85  |
| Male labor                                   |        | 28.25  | 26.49  |
| Female labor                                 |        | 11.54  | 10.80  |
| Hired labor (days/acre)                      | 38.56  | 8.54   | 13.55  |
| Male labor                                   |        | 5.33   | 8.72   |
| Female labor                                 |        | 2.82   | 4.60   |
| Labor days by activities (days/acre)         |        |        |        |
| Land preparation                             |        | 16.35  | 14.49  |
| Transplanting/sowing                         |        | 16.25  | 11.69  |
| Weeding /input application                   |        | 3.47   | 3.23   |
| Share of machine service                     | 50.71  | 62.04  | 74.11  |
| ... if yes, value (Rs./acre)                 | 115.01 | 509.20 | 989.38 |
| Share of who neither own nor hire tractors   | 0.49   | 0.38   | 0.26   |
| <b>Village level wage</b>                    |        |        |        |
| Agricultural wage (Rs/day )                  | 15.00  | 45.35  | 47.59  |
| Non-agricultural wage (Rs/day )              | 16.01  | 57.48  | 67.74  |
| No. of observations                          | 3,058  | 3,331  | 3,815  |

Source: Own computation from 1982, 1999, and 2008 ARIS-REDS surveys.

Note: Machinery variable includes tractor, plow and harvesters.

**Table A2: Key characteristics by farm size group, 1982, 1999, and 2008**

| Variables                                    | 1982   |        |       | 1999  |        |        | 2008  |        |        |
|--|--------|--------|-------|-------|--------|--------|-------|--------|--------|
|  | Small  | Medium | Large | Small | Medium | Large  | Small | Medium | Large  |
| Head's age                                   | 48.64  | 49.91  | 52.75 | 47.77 | 49.78  | 54.08  | 49.75 | 52.19  | 54.60  |
| Head's education                             | 2.03   | 2.18   | 2.28  | 3.98  | 4.25   | 4.84   | 4.76  | 4.75   | 5.86   |
| Household size                               | 5.90   | 6.80   | 8.45  | 5.89  | 6.25   | 7.98   | 5.26  | 5.65   | 6.62   |
| No. of members >14 year old                  | 3.80   | 4.33   | 5.29  | 3.81  | 4.22   | 5.50   | 3.59  | 4.05   | 4.85   |
| Share of prime males                         | 1.83   | 2.12   | 2.57  | 1.81  | 1.98   | 2.54   | 1.57  | 1.80   | 2.12   |
| Share of prime female                        | 1.69   | 1.90   | 2.26  | 1.66  | 1.82   | 2.34   | 1.57  | 1.72   | 2.01   |
| Share of eld. male                           | 0.16   | 0.19   | 0.27  | 0.17  | 0.23   | 0.33   | 0.22  | 0.28   | 0.36   |
| Share of eld females                         | 0.13   | 0.13   | 0.19  | 0.17  | 0.19   | 0.29   | 0.22  | 0.26   | 0.35   |
| Area owned                                   | 1.07   | 3.73   | 16.13 | 1.21  | 4.04   | 14.80  | 1.08  | 3.71   | 13.09  |
| Area cultivated (acres)                      | 1.75   | 4.54   | 15.98 | 2.25  | 5.70   | 17.11  | 2.09  | 5.88   | 18.72  |
| Share of land rental market participant (%)  | 4.51   | 1.91   | 1.90  | 6.12  | 1.92   | 1.08   | 7.71  | 6.98   | 4.67   |
| .....if yes, land (acre)                     | 4.27   | 5.52   | 9.02  | 2.33  | 4.38   | 13.87  | 1.46  | 2.34   | 5.91   |
| Share machine own                            | 0.01   | 0.03   | 0.13  | 0.14  | 0.17   | 0.33   | 0.18  | 0.38   | 0.52   |
| ... if yes, value ('000' Rs./acre)           | 2.37   | 1.53   | 7.62  | 8.50  | 31.37  | 106.35 | 22.94 | 43.88  | 122.87 |
| Total income ('000' Rs)                      | 14.50  | 21.85  | 45.32 | 38.80 | 55.39  | 123.11 | 46.53 | 74.49  | 161.56 |
| Share of income from agric.                  | 50.67  | 71.87  | 94.37 | 40.34 | 63.55  | 77.23  | 34.48 | 58.01  | 80.52  |
| <b>Labor use</b>                             |        |        |       |       |        |        |       |        |        |
| Used any labor for agric. production         | 96.42  | 99.13  | 99.32 | 92.87 | 99.88  | 99.55  | 93.46 | 99.89  | 99.80  |
| Using family labor for agric. production (%) | 96.11  | 97.86  | 97.97 | 92.76 | 99.71  | 99.36  | 92.40 | 98.29  | 96.11  |
| Using hired labor for agric. production (%)  | 52.96  | 67.30  | 79.72 | 58.36 | 78.18  | 83.92  | 65.88 | 84.16  | 91.30  |
| Farmers worked as agric. labor (%)           | 47.66  | 29.77  | 11.22 | 34.28 | 17.28  | 6.09   | 29.50 | 17.44  | 6.14   |
| Farmers worked as non-agric. labor (%)       | 7.17   | 6.65   | 4.39  | 20.55 | 11.98  | 5.81   | 29.21 | 15.20  | 8.90   |
| Farmers with non-ag self-employment (%)      | 7.63   | 5.70   | 6.49  | 9.13  | 6.52   | 7.99   | 18.33 | 17.71  | 15.56  |
| <b>Cultivation details</b>                   |        |        |       |       |        |        |       |        |        |
| Agricultural labor (days/acre)               | 158.98 | 79.72  | 48.80 | 91.55 | 37.75  | 19.86  | 82.50 | 36.56  | 17.71  |
| Own labor (days/acre)                        | 107.37 | 39.68  | 17.96 | 79.66 | 30.37  | 14.31  | 63.98 | 24.91  | 10.47  |
| Male labor                                   |        |        |       | 51.41 | 19.24  | 9.12   | 44.64 | 17.39  | 7.69   |
| Female labor                                 |        |        |       | 20.98 | 8.05   | 3.47   | 18.30 | 7.21   | 2.70   |
| Hired labor (days/acre)                      | 52.11  | 40.46  | 31.22 | 11.89 | 7.38   | 5.55   | 18.52 | 11.65  | 7.24   |
| Male labor                                   |        |        |       | 7.64  | 4.32   | 3.59   | 11.83 | 7.55   | 4.73   |
| Female labor                                 |        |        |       | 3.72  | 2.69   | 1.71   | 6.45  | 3.86   | 2.34   |
| Labor days by activities (days/acre)         |        |        |       |       |        |        |       |        |        |
| Land preparation                             |        |        |       | 9.34  | 15.95  | 27.35  | 9.82  | 15.47  | 21.47  |

|  |        |        |       |        |        |        |         |        |        |
|--|--------|--------|-------|--------|--------|--------|---------|--------|--------|
| Transplanting/sowing                       |        |        |       | 10.55  | 15.89  | 25.22  | 7.45    | 12.59  | 18.04  |
| Weeding /input application                 |        |        |       | 2.98   | 3.57   | 4.04   | 2.79    | 3.39   | 3.80   |
| Share of machine service                   | 44.08  | 49.64  | 54.50 | 55.30  | 66.78  | 65.03  | 69.63   | 76.30  | 79.43  |
| ... if yes, value (Rs./acre)               | 192.46 | 109.04 | 92.47 | 644.70 | 485.76 | 369.08 | 1413.15 | 795.49 | 555.44 |
| Share of who neither own nor hire tractors | 0.56   | 0.50   | 0.46  | 0.45   | 0.33   | 0.35   | 0.30    | 0.24   | 0.21   |
| <b>Village level wage</b>                  |        |        |       |        |        |        |         |        |        |
| Agricultural wage (Rs/day )                | 15.66  | 14.51  | 15.14 | 45.19  | 45.22  | 45.81  | 46.83   | 47.93  | 48.57  |
| Non-agricultural wage (Rs/day )            | 15.73  | 15.25  | 16.78 | 58.16  | 56.85  | 57.42  | 66.39   | 67.81  | 70.50  |
| No. of observations                        | 485    | 1,119  | 1,454 | 1,195  | 1,267  | 869    | 1495    | 1490   | 830    |

*Source:* Authors’ computation from 1982, 1999, and 2008 ARIS-REDS surveys.

*Note:* Large, medium, and small farms are defined as having more than 6, between 2 and 6, and less than 2 acres of land, respectively.

Machinery variables includes tractor, plow and harvesters.