**Supplementary information**

**Table 1: Criteria for village selection**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Name of village** | **Block** | **Donor Engagement** | **Village Size (Big, Avg, Small)** | **Population Density** | **SC & ST population (%)** | **Agricultural practices** | **Soil Diversity** | **Horticulture** | **Canal Irrigation** | **Forest Density** | **Special** |
| Tentuliya | Hirbandh | Medium | Big | High | 86 | Avg\* | Yes | No | No | No | Cluster of watershed development societies (CWDS) |
| Sitarampur | Hirbandh | Medium | Big | High | 83 | Avg | Yes | No | No | yes | No |
| Jadur Bankata | Hirbandh | Old | Medium | Avg | 53 | Good | Yes | Yes | yes | No | CWDS |
| Kedia | Hirbandh | Medium | Medium | Avg | 84 | Good | Yes | No | No | No | No |
| Itamara | Hirbandh | New | Medium | Avg | 82 | Poor | Yes | Yes | No | No | No |
| Satnala | Ranibandh | Old | Big | High | 77 | Avg | Yes | Yes | No | Yes | No |
| Gosainidihi | Ranibandh | Medium | Small | Avg | 44 | Good | Yes | Yes | Yes | Yes | No |
| Dhanara | Ranibandh | Old | Avg | Avg | 72 | Poor | Yes | No | No | Yes | No |
| Ramgar | Ranibandh | New | Medium | Low | 99 | Good | Yes | Yes | Yes | Yes | No |
| Kama | Ranibandh | Old | Big | High | 75 | Avg | Yes | Yes | No | No | No |
| \*Avg= Average | | | | | | | | | | | |

**Table 2: Sample design**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | **Soil** | **Water** | | |
| **HIRBANDH** | **HH** | **Soil Samples** | **Drinking** | **Pond** | **Irrigation** |
| **HIRBANDH** | | | | | |
| Itamara | 30 | 20 | 1 | 1 | 1 |
| Jadur Bankata | 30 | 20 | 1 | 1 | 1 |
| Kedia | 30 | 20 | 1 | 1 | 1 |
| Sitarampur | 30 | 20 | 1 | 1 | 1 |
| Tentoliya | 30 | 20 | 1 | 1 | 1 |
| Total | 150 | 100 | 5 | 5 | 5 |
| **RANIBANDH** | | | | | |
| Dhanara | 30 | 20 | 1 | 1 | 1 |
| Goasindihi | 30 | 20 | 1 | 1 | 1 |
| Kamo Gora | 30 | 20 | 1 | 1 | 1 |
| Ramgarh | 30 | 20 | 1 | 1 | 1 |
| Satnala | 30 | 20 | 1 | 1 | 1 |
| Total | 150 | 100 | 5 | 5 | 5 |
| Blocks Total | 300 | 200 | 10 | 10 | 10 |
| Grand Total | 530 | | | | |

**Table 3: Cropping pattern in the study villages.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Crop** | **Values in %** | | |
| ***Kharif*** | ***Rabi*** | **Summer** |
| Paddy | 99.0 | 6.0 |  |
| Mustard |  | 54.0 |  |
| Potato |  | 18.0 | 0.5 |
| Watermelon |  | 10.0 | 9.0 |
| Brinjal |  | 2.0 | 21.5 |
| Boro paddy |  | 5.0 | 41.0 |
| Tomato |  | 2.0 | 22.0 |
| Corn |  | 0.4 | 4.0 |
| Other vegetables including Chilli, cabbage, etc. |  | 0.62 | 0.2 |
| Fallow | 1.0 |  |  |
| Cropped area (ha) | 124.2 | 64.8 | 5.6 |

**Table 4. Simple water budget for Hirbandh and Ranibandh.**

|  |  |  |
| --- | --- | --- |
|  | **Hirbandh** | **Ranibandh** |
| **Area in Km2** | 200 | 400 |
| **Rainfall in mm** | 1446 | 1400 |
| **Runoff Coff (%)** | 0.31 | 0.31 |
| **Runoff in (mm)** | 448 | 434 |
| **Runoff (MCM)** | 90 | 174 |
| **Depth of waterbodies (Assumed, m)** | 2 | 2 |
| **Surface area in (Km2)** | 44.8 | 86.8 |
| **Existing Water Spread Area (km2)** | 15 | 37 |
| **% of runoff capturing current situation** | 0.33 | 0.42 |
| **Soil moisture (AWC)** | 0.07 | 0.11 |
| **Soil moisture at FC (mm)** | 35 | 55 |
| **% of GW recharge** | 0.09 | 0.09 |
| **GW recharge in mm** | 130 | 126 |
| **Net Available SM for crops (Rainfall-Runoff-GWr)** | 853 | 803 |

**Table 5. Fertilizer use pattern**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Village** | **N (Kg/ha)** | | **P (Kg/ha)** | | **K (Kg/ha)** | |
| **1st dose** | **2nd dose** | **1st dose** | **2nd dose** | **1st dose** | **2nd dose** |
| **Dhanara** | 21 | 25 | 24 | 63 | 0 | 21 |
| **Goasindihi** | 22 | 24 | 56 | 61 | 18 | 21 |
| **Itamara** | 19 | 23 | 49 | 60 | 19 | 18 |
| **Jadurbonkata** | 25 | 27 | 60 | 70 | 21 | 26 |
| **Kamo gora** | 44 | 60 | 46 | 37 | 15 | 0 |
| **Kedia** | 22 | 26 | 51 | 68 | 17 | 16 |
| **Ramgarh** | 23 | 26 | 58 | 66 | 30 | 24 |
| **Satnala** | 16 | 28 | 42 | 72 | 11 | 25 |
| **Sitarampur** | 31 | 30 | 80 | 77 | 31 | 26 |
| **Tentoliya** | 53 | 28 | 41 | 72 | 17 | 18 |
| **Average** | 28 | 30 | 51 | 65 | 18 | 20 |

**Figure 1. Farm mechanization pattern**

**Figure 2. Age of the respondents**

**Figure 3. Level of education of respondents**