**Appendix No.1**

**questionnaire**

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| Farmer and farm profile |
| Area under cultivation? |  | How to supply irrigation water? |  |
| Distance from the farm to the place of residence |  | Number of irrigations in the production period? |  |
| Type of land ownership? |  | Type and specifications of water pump? |  |
| soil texture? |  | Duration of water pump use (hr)? |  |
| Land rental cost (dollars per hectare)? |  | Amount of water consumption during the cultivation period (M3ha-1)? |  |
| Agricultural operations and type of agricultural machinery used in one Hectares |
| The type of operation | Type of machine | machine weight (kg) | Hours of use | Fuel consumption (L)  | Consumption of lubricating oil (L) | diesel fuel cost ($) | oil cost ($) | Labor force ($) | The cost of Labor force ($) |
| Primary tillage |  |  |  |  |  |  |  |  |  |
| Secondary farming |  |  |  |  |  |  |  |  |  |
| Disk and leveling |  |  |  |  |  |  |  |  |  |
| Plotting and demarcation |  |  |  |  |  |  |  |  |  |
| Spray |  |  |  |  |  |  |  |  |  |
| Transportation of inputs |  |  |  |  |  |  |  |  |  |
| Other operations |  |  |  |  |  |  |  |  |  |
| Inputs in the production process |
| Input type | unit | Consumption (unitha-1) | Price per unit | Total price | How to use the input |
| Nitrogen fertilizer (N) | kgha-1 |  |  |  |  |
| (P2O5) Phosphate | kgha-1 |  |  |  |  |
| Potassium (k) | kgha-1 |  |  |  |  |
| Pesticides | Lha-1 |  |  |  |  |
| Fungicides | Lha-1 |  |  |  |  |
| Herbicide | Lha-1 |  |  |  |  |
| Seed | kgha-1 |  |  |  |  |
| Electricity | kwhha-1 |  |  |  |  |
| Human labor | hrha-1 |  |  |  |  |
| Water for irrigation | M3ha-1 |  |  |  |  |
| Crop production and selling price |
| The amount of crop production (kgha-1) during the production period |  | crop price ($kg) |  |