Intake Form for Private/Social Sector Organizations

The information you provide will NOT be shared without your permission.

Carnegie Mellon University
School of Computer Science

1. Describe your non-profit or governmental organization (up to 100 words, please).

Digital Green is a global development organization that empowers smallholder farmers to lift themselves out of poverty by harnessing the collective power of technology and grassroots-level partnerships.

2. Describe the data problem(s) for which your organization would like free machine learning or data science help. Problems may be in the form of questions to be answered (either once or on an ongoing basis), decisions to be optimized, optimal resource allocation, risk assessments, predictions, etc. (up to 50 words per problem).

Questions:
1. Aggregator daily decision – which market(s) to take collected vegetables?
   - Objective: maximize income gain for smallholder farmers
   - Factors in prior market prices and transport costs
   - Network of local wholesale markets at varying distances
   - Multiple crops in single aggregation

2. Aggregator rating system – can we auto-rate aggregators to create a simple feedback mechanism and inform operational efficiencies?
   - Right decision on market from [1]
   - Transport optimization – maximize volume, pick right vehicle
   - Number of farmers and repeat users

3. Price trends – can we identify any trends from the pricing data to inform farmers of cropping pattern?
   - Daily price data from transactional records over last 1.5 years
   - Seasonal variations
   - Climate factor – link with weather data?
   - Complex supply-demand dynamics make it difficult to predict

[1] Digital Green Dashboard Analytics
3. Describe the data available for answering these questions, including number of records, list of data elements in each record, data owner, any restrictions on access, etc.

Loop data:
- Loop android app serves as a digital ledger to record daily transactions
- Robust database of daily transactional records
- Data becoming more comprehensive with expansion – farmers, crops, markets
- Static data
  - Geographies: villages, markets
  - Farmer, transporter, commission agent/trader details
- Data linkages
  - Aggregator – villages – farmers
  - Aggregator - markets – commission agents/traders
  - Aggregator – transporters - vehicles
- Daily transactions
  - Farmer(s) – crop(s) – volume – sale price
  - Transporter(s) – vehicle(s) – cost - total volume
  - Market(s) – agent(s) – commission rate – sale price
- Ledger
  - Payment status (manually checked)
  - Historical transactions
  - Triggers SMS receipts for farmers

Data is owned by Digital/Green and will be made available to the researchers.

4. Please complete the following: “Solving these problems will be so impactful to our organization that we are willing to....

1. Designate a liaison who will provide the data and answer any questions on a high turnaround basis
2. Incorporate your successful solution into our workflow and provide feedback

5. Links to further relevant information, e.g. URL for your organization.

Company website: www.digitalgreen.org
Loop dashboard: www.digitalgreen.org/loop/dashboard

6. Contact person, including title and contact information.

Jane Doe, CTO, jane.doe@digitalgreen.com, 123-456-8910