Call for Tender
Consultancy assignment – Digital Farm Record Keeping Application Development

OVERVIEW:

Recent research into current household incomes has shown that a large share of smallholder farmers in key categories as cocoa and coffee – including Fairtrade farmers - still live in poverty. This unacceptable reality triggered Fairtrade to develop its Living Income Strategy, intensifying its efforts to achieve sustainable livelihoods for smallholder farmers and create the tools to enable progress towards living incomes.

In order to build entrepreneurial skills of farmers, it is fundamental to help them understand their basic farm economics. To enable farmers to run their farms as a small-scale business, they need appropriate tools to record and analyse their expenditures and incomes. For this purpose, Fairtrade developed and is currently implementing physical farm record books among smallholder coffee farmers. Keeping records of farm expenses and revenues will increase farmers’ understanding of actual productivity, production costs and farm incomes, in order to take better farm management decisions.

In addition, monitoring actual farmers’ incomes is crucial for measuring progress to close the gap to living incomes and identify the main drivers to improve the incomes of smallholder families. Accurate data on farm expenditures and incomes are currently missing. Aggregated farm records, feeding into a database, will enable income monitoring as a critical metric for sustainable livelihoods.

Fairtrade has received funding from GIZ (German Development Cooperation) for the development of innovative tools for enhanced farm management and living income monitoring and seeks to evolve the physical farm record tool into a digital application.

Based on the attached terms of reference for the application and the learnings from introducing physical farm record keeping, the consultant is asked to develop a farmer-friendly digital application which can be used by farmers who own a simple smartphone to record their farm expenditures and revenues and incomes. The application should in turn feedback relevant data analysis to the user to support decision making. The data analysis should provide insights into the household’s income sources, cost of production, productivity and labour occupation, amongst others.

Annex 1 provides terms of reference for the tool.

OBJECTIVE/PURPOSE:

This assignment involves the development of an appropriate, user-friendly, digital application for coffee farmers which facilitates record keeping of farm production, revenues and expenditures, as an iterative process in close coordination with the implementing teams in 3-4 countries: Colombia, Uganda/Ethiopia and Indonesia.

A beta-version of the application should be trialled with coffee farmers in the focus countries to ensure suitability for the target population.
**TASKS/DELIVERABLES:**

The targeted users of the digital application are smallholder coffee farmers. The application should be adjustable to all coffee growing regions, but initially we will focus on implementation in Colombia, Uganda/Ethiopia and Indonesia.

**Overall tasks:**

- Define the technical requirements for an open-source farm management application, in consultation with Fairtrade’s implementation and IT teams, based on attached terms of reference;
- Develop an appropriate application with self-explanatory user interface, in close coordination with the implementing teams in the focus countries;
- The application should be developed so that farmers with very basic smartphones and limited literacy can use it;
- Organize the field testing of beta-versions with implementation teams in the focus countries and adjust/improve the beta-version according to test results and feedback obtained;
- Provide guidance and recommendations for storage and governance of data generated through this app, in coordination with Fairtrade’s IT team.

**Key deliverables:**

Specifically, the consultant should deliver:

- A functional digital application, allowing smallholder farmers to track their farm revenues, labour occupation and expenditures and analyse productivity and profitability of their farm crops as well as the return on labour investment;
- User manual, explaining the set up process and the overall use of the application;
- Technical description of the tool and recommendations on data storage and governance;
- Narrative report, detailing the design iterations, test results of field trials and adjustments made, and description of the end product.

**Timelines:**

The start of the consultancy contract is as soon as possible and runs until August 2020.
**REQUIREMENTS:**

The IT consultant / consultancy company for this assignment should have the following expertise:

- Proven experience with software and smartphone application development in developing countries;
- Good understanding of technical capacity in developing countries;
- Track record on user-interface design, ideally in the context of farmers with low literacy rates;
- Excellent communication skills and ability to communicate effectively about technical solutions with non-IT people;
- Affinity and experience in working and coordinating with people with varying cultural backgrounds;
- Fluency in English, working knowledge of Spanish is desirable.

**TERMS AND CONDITIONS:**

**How to apply:**

Interested parties can present their proposals by sending an e-mail to Carla Veldhuyzen (c.veldhuyzen@fairtrade.net) and/or Aaron Petri (a.petri@fairtrade.net) indicating “Consultancy assignment – Digital Farm Record Keeping Application” in the subject line. The proposal should include the following information:

- **Professional expertise**: A brief description of the project team and the relevant expertise of the team members, focussing on the requirements presented in this document
- **Project plan**: A description of the development approach and timelines proposed for this project
- **Budget breakdown**: consultancy fees and any other additional costs

Deadline to submit application: **15th March 2020**.

Interviews are scheduled to take place on March 19-20th.

**Budget indication:**

The total budget for this project is maximum €50,000. Please note that all costs invoiced must be below this amount, including a mandatory 19% VAT payable in Germany (as this is where Fairtrade is headquartered). This implies that that the amount chargeable before VAT is ~€40,000.
Criteria for evaluation:
The proposals will be evaluated according to the following criteria:
- Relevant professional expertise of the research team
- Quality of the proposed design process
- Familiarity with the subject matter;
- Requested budget for consultancy fees and other costs
- Proposed timelines for the project.

Questions:
Interested parties can send their questions regarding this assignment to Aaron Petri (a.petri@fairtrade.net). The deadline for presenting questions is 8th March 2020.
Annex: Terms of Reference Farm Management Application

Background
In order to build entrepreneurial skills of farmers, it is fundamental to help them understand their basic farm economics. To enable farmers to run their farms as a small-scale business, they need appropriate tools to record and analyse their expenditures and incomes.

In addition, monitoring actual farmers’ incomes is crucial for measuring progress to close the gap to living incomes and identify the main drivers to improve the incomes of smallholder families. Accurate data on farm expenditures and incomes are currently missing. Aggregated farm records, feeding into a database, will enable income monitoring as a critical metric for sustainable livelihoods.

Objective
The key deliverables of the GIZ funded project to develop innovative tools for enhanced farm management and living income monitoring are:

1. A digital Farm Management Application which facilitates record keeping of farm production, revenues and expenditures by farmer households.
2. A data platform (central storage) which the application feeds raw data into and analysed data can be retrieved from.

The application should have the following functionalities:

- facilitate accurate data recording through self-explanatory menus with built-in checks to validate out-of-range data inputs and correct errors;
- process the data to calculate key performance indicators on farm productivity, cost of production and net income and return on (labour) investment, for the farmer to analyse and base farm management decisions on;
- optional: compare results against benchmarks to further illustrate performance in relation to regional averages or set targets;
- optional: make recommendations on how to optimize the net farm income, based on the data analysis.

The data storage platform should enable clustering and analysis of aggregated data.

Farm Management App
The Farm Management App is a user-friendly, digital tool for farm record keeping and analysis of results, appropriate for use by coffee farmer household members (male and female) with limited educational background.

Specific data to be recorded include:

- basic household and farm profile data:
  - name of farmer, cooperative, total farm area, altitude, geo location and type of land ownership
- household size and composition (ages, gender)
- farm distribution: plot sizes, crops and crop characteristics (tree density, age, organic or agroforestry systems, production volumes)

- operational costs for coffee production and other crops or farming activities:
  - purchases of agricultural inputs (fertilizer, pesticides, seedlings),
  - purchases of ingredients for on-farm organic fertilizer production
  - purchases of materials and tools (depreciated)
  - maintenance, services, admin and other costs

- labour occupation, taking care of different crops:
  - household labour (remunerated and non-remunerated)
  - hired labour during harvest and off-season (number of days, salary, in-kind benefits, amount collected, pay per unit)

- farm revenues:
  - from sales of coffee (date of sale, volumes, price received)
  - sales of other cash crops,
  - in-kind value of food produced for home consumption

- other income sources, such as premium or bonus payments, in-kind benefits

Based on the above-mentioned data, already existent formulas and business requirements, the tool should automate an output on:

- productivity (yield per hectare)
- net income (profitability) per crop
- cost of production (per kilo and per hectare)
- distribution of costs
- distribution of labour
- return on labour invested
- (comparison of key indicators against certain benchmarks)
- (recommendations on how farm yields can be optimized)

Currently, these data collections and the calculations are done through excel. The aim is to replace this way of working through the application

**Characteristics of the application**

The application should have a very basic interface that guides the farmer through a menu and submenus in a logical sequence, ensuring that all relevant data is recorded at set times. The menu and submenus must be self-explanatory and have built-in checks to validate units of
measurement and out-of-range data inputs. The application should be provided in at least two additional languages, French and Spanish.

The results of the farm performance and profitability should be fed back to the farmer in clear visuals, for example using traffic light coding to indicate where the farmer is well on track and alert on areas where income improvements can be achieved. This analysis of individual data should be integrated on the end user device.

Furthermore, comparison of the farmer’s performance relative to certain benchmarks (or averages of their cooperative or in the country) could be included.

Based on analysis of the results, recommendations could be made to the farmer, in which way they are potentially over-spending or resources could be used more efficiently.

The application must be compatible to simple smartphones (regardless of the operating system) as end-user device. The data recording and individual analysis functions on the end-user device must be available offline.

The tool must be GDPR compliant and developed with an open source program. Users should be given the option to share their data with different parties in an anonymized way. If they consent to share, their data is uploaded to a central database.

**Database (out of scope for this assignment)**

The collected data must be uploaded and stored in a central database that assures GDPR compliance (preferably DSGVO), as personal data will be collected. The database should be accessible partially or fully by whoever is granted rights to do so.

There should be an interface allowing farmers, cooperatives, FI, NFOs and/or traders who have been granted access, to retrieve data of interest for them.

If farmers consent to release their data, these can be aggregated, clustered and analysed at different levels, in order to gain insights into the farm business results and the differences in between producers, cooperatives or regions and identify best practices to optimize farm profitability. Recommendations on best practices to increase yields, gain efficiencies and improve income could be fed back to farmers to facilitate better decision making on farm investments.

On top of that, the uploaded data can be presented in an anonymised way to stakeholders, i.e. supply chain partners or NGO’s, so they can track incomes and other key performance indicators within their value chains.