# Income Measurement Survey User Guide

Survey on actual income of smallholder farming households

March 2021



## Introduction

An increasing number of actors in the agricultural sector are endeavouring to improve net actual incomes of smallholder farmers. To track actual income of smallholders, companies often collect data on the focus crop income of the smallholder households. The **focus crop** refers to the primary crop smallholders supply to the actor(s) interested in data collection. Often limited data is collected beyond demographics, farm characteristics and data related to the focus crop, therefore these efforts exclude multiple other income streams of smallholder households. Information on total smallholder actual income, which includes non-focus crop income, is essential to:

- 1. Determine the size of the living income gap
- 2. Inform effective strategies to increase total actual income
- 3. Monitor progress in increasing actual incomes towards a living income

In the past, smallholders' incomes were compared to poverty levels, which are indicative of survival and subsistence. Currently, actual smallholders' incomes are also compared to **living income**. The Living Income Community of Practice (LICoP) defines living income as the "net annual income required for a household in a particular place and time to afford a decent standard of living for all members of that household".

It is critical to identify the cost for a household to afford a decent standard of living in a particular place and time, which can then be used as a **living income benchmark**. If a household collectively earns an income at the same level as the cost to live decently, that smallholder is earning a living income i.e., actual income equals the living income benchmark. Many smallholder farmers' actual income is not sufficient to achieve a living income, thus creating a **living income gap**.

It is important to understand that net actual income of a smallholder household may include different sources beyond farm activities of the focus crop, such as:

- **Income from farm activities**, which includes income from the focus crop as well as income from additional crops and livestock.
- **Off-farm labour income**, where family members within the household supplement household income with another business, artisanal work, or labour outside the farm.
- Other sources of income (non-farm, non-labour), including, but not limited to income received from: the sale or rental of property; private transfers; and gifts from non-household members.

The total income from all farm activities, off-farm labour and other sources is considered **net actual income**.

Identifying the net actual income of smallholders can be based on primary data, on secondary data or a mix of both. Primary data is collected directly from individual farmers through farmer surveys. Whereas primary data collection requires resources, the advantage of survey data is that it provides more precise and relevant information particular to the case of interest. Secondary data has not been retrieved directly from the farmers of interest and therefore only can provide a proxy or estimation of



the actual income of the farmers of interest. Secondary data on farmer incomes can be found in international databases, sector reports, national statistics, or academic studies. For guidelines on using secondary data on farmer incomes refer to the LiCoP publication on **Estimating farmer household income**, **2020**. Primary and secondary data can also complement each other.

To facilitate companies to collect relevant primary data on smallholder households' total actual income, IDH, The Sustainable Trade Initiative, presents the Income Measurement Surveys. The surveys are structured in a modular way in which each module represents a component of actual income. The modular structure of the survey enables companies to select survey (sub-)modules of their interest. This way companies may choose to remove (sub-)modules for which they have relevant secondary proxy data to shorten the survey. Currently two surveys are available for smallholder farmer households with the following focus crops: coffee and cocoa. Another survey is in development for tea, and IDH is exploring other commodities from which such a survey can be of benefit.

The Income Measurement Surveys have been developed by IDH, The Sustainable Trade Initiative in collaboration with Akvo Foundation. IDH The Sustainable Trade Initiative has experience in collecting income data through interviews of 4,300 farmers linked to 13 different analyses of farmer income spanning 10 commodities and 6 countries. As IDH's data collection partner, Akvo has collaborated with IDH on survey design and continuous improvement, and Akvo conducts primary data collection. Since 2008, Akvo has worked with over 20 governments and 200 organisations in more than 70 countries and 8 commodities, to improve development project design and continuous improvement using data. For more information on IDH data collection methodology and experience read IDH's Primary Data Collection Methodology Note. To make farmer surveys fit-for-purpose in the content of living income, desk research was conducted on the most relevant components of household income per LICoP guidance. Moreover, consultations with five coffee and five cocoa buyers and suppliers have informed the income components of the surveys.

This guide provides explanations of the survey itself to promote the survey's initial format and deployment. The survey guide is divided into three sections:

- I. Survey modules
- II. Preparing the survey for use
- **III.** Assumptions

Get in touch!

Lisa Minère Innovation Officer IDH <u>Minere@idhtrade.org</u>



Survey

Guide

## I. Survey modules

### Introduction

The actual income survey can be divided into three sections:

- 1. Introductory questions relate to the farmer and the farm itself. Responses are used for administrative purposes as well as retrieval of descriptive farm and farmer knowledge.
- 2. Measurement of actual income components gathers the required input for calculating actual income of a smallholder farmer of interest.
- 3. Additional / finalising questions collect demographics of the farmer household.

The remainder of this section focuses on the **measurement of actual income components** by describing the procedure to calculate actual income. Please refer to the Excel survey file, specifically the "{focus crop} full survey" tab for additional support.

As mentioned in the survey guide introduction, the actual income (also referred to as household income or current income) of smallholder farmers comes from a wide range of sources which can be categorised into three modules:

- 1. Income from farm activities (Excel rows 65 370).
- 2. Off-farm labour income (Excel rows 371 379).
- 3. Other sources of non-farm, non-labour income (Excel rows 380 392).

Within these three modules, sub-modules capture components of actual income (Figure 1). Each sub-module/actual income component will be explained in the following sections.



Survey

Guide

### FIGURE 1. VISUALISATION OF THE MATHEMATICAL BREAKDOWN TO GENERATE EACH OF THE THREE MAIN INCOME SOURCES





### Net income from farm activities

The net actual income from farm activities can be calculated by knowing on-farm costs and on-farm revenue (sub-modules from core survey module 1). To calculate net income from farm activities, the below five subcomponents need to be gathered from the farmers. The IDH Income Measurement Surveys divide net crop income over the first three subcomponents to distinguish each crop's contribution and relevance to the household. The surveys balance rigor with time and cost efficiency by including more detailed questions on the focus crop and two other crops with highest contributions to the total household income. Detailed information on the focus crop provides relevant information for buyers to increase farmer income through the focus crop. Detailed information on costs and revenues of the two highest income crops contributes to the accuracy of the most relevant components of total net farm income.

- 1. Net income from the focus crop (e.g. coffee or cocoa)
- 2. Net income from the two highest income-generating crops, apart from the focus crop
- 3. Net income from other crops
- 4. Net income from livestock
- 5. General farm costs

Table 1 describes the income sources and costs which are considered to measure net income from farm activities.



Survey

#### TABLE 1: INCOME SOURCES AND COSTS CONSIDERED TO MEASURE NET INCOME FROM FARM ACTIVITIES

| Revenue  |  |
|--|--|
| References to the rows in the Excel surve                    | y are provided in the first column in parentheses as a guide only  |
| Revenues from crops<br>(Excel rows 65-75)                    | Revenue from the sale of crops produced on the farm to sell to external parties (e.g., coffee or cocoa).   |
|  | For revenue from the focus crop, measure revenues from different varieties pro-<br>duced separately (if applicable).   |
|  | Example: identify the quantity of coffee variety A produced and the price received<br>for a unit of coffee variety A. Multiply the quantity sold by the price received for a<br>unit of the coffee variety to calculate revenues from coffee variety A. Repeat for<br>other coffee varieties produced by the household. Add the revenues from the dif-<br>ferent crop varieties to calculate total revenues from coffee. |
| Revenues from livestock<br>(Excel rows 341-358)              | Revenue from the sale of livestock, livestock products and livestock by-products (e.g. meat, eggs, milk).  |
| Costs  |  |
| Hired labour costs   | Hired labour costs used to assist the farmer with crop-production activities or tak-<br>ing care of livestock.   |
| Costs for inputs<br>(Excel rows 179-189, 304-314)            | Costs for inputs for production of crops (e.g., fertiliser, seedlings, crop protection, water, electricity).   |
| Crop transport costs<br>(Excel rows 76, 201)                 | Costs made to transport crops (e.g., transport costs to sell crops to the market).   |
| Rejuvenation costs (perennial crops)<br>(Excel rows 304-318) | Costs for rejuvenations of trees. Applicable for coffee and cocoa as these are pe-<br>rennial crops, taking a few years to mature before producing yield and whose pro-<br>ductivity decreases at older age.   |
| Fodder and water (Excel row 357)                             | Costs for fodder and water for livestock.  |
| Medicines and veterinary services (Excel row 358)            | Costs for medicines and veterinary services for livestock.   |
| Fixed on-farm costs  | Fixed costs such as land, insurance, taxes or membership of a cooperative.   |
| Equipment costs (Excel rows 359-362)                         | Costs for purchasing or maintaining on-farm equipment.   |



### Non-farm labour income

Non-farm labour income consists of two subcomponents described in Table 2: the net household income gained from running one or more local business(es) and the net income from wage labour received by the household members.

#### TABLE 2: DESCRIPTION OF COSTS USED TO CALCULATE INCOME FROM NON-FARM LABOUR SOURCES

| Net income local business<br>(Excel rows 371-378) | Household members can manage one or more local businesses, ranging from owning<br>barbershops to being a taxi driver or providing farm-equipment repair services.<br>Business net income is calculated by subtracting the business costs from business<br>revenues. The income survey asks for net income from the local business(es) directly<br>and not for revenues and costs. |
|---|---|
| Income from wage labour<br>(row 379)              | Household members can be engaged in labour for an external employer doing agricultural, non-agricultural or seasonal work in exchange for cash income or income in-kind. The survey does not consider costs incurred for wage labour.   |

### Other income

Table 3 focuses on farmer households earning income from non-farm, non-labour income sources, also referred to as "**other income**".

### TABLE 3: DESCRIPTION OF FINANCIAL TRANSFERS AND OTHER SOURCES OF INCOME USED TO CALCULATE "OTHER INCOME"

| Revenues (Excel rows 38                    | Revenues (Excel rows 380-392)  |  |  |  |  |
|--|--|--|--|--|--|
| Public transfers                           | Public transfers can be transfers received from the government, NGOs or other public organisations.  |  |  |  |  |
| Private transfers                          | Private transfers can be remittances received from friends or family members, transfers from private organisations or gifts.   |  |  |  |  |
| Net income from rent or sale of properties | Farmers can earn income from renting out or selling equipment, land or other properties, or the sale of other services such as sharing their technical expertise.  |  |  |  |  |
| Other sources                              | Other sources of non-farm, non-labour income capture income from rent of land, equipment, or other assets and any other source not specified by the described categories in this module. Sources may differ per household. |  |  |  |  |



### Additional survey notes

#### Crop seasons and survey length

The survey is designed to measure actual income from the past 12 months. Therefore, if there were multiple crop seasons of a crop in the past 12 months, income and/or costs for a crop are questioned for each season separately.

Surveys focusing on cocoa and coffee are designed to measure net income from cocoa and coffee for a maximum of two seasons. The survey contains many questions applicable for various situations. Each farmer will only respond to the portion of the questions that are applicable to them based on the answers they provide. For example, a farmer with only one crop season in the past 12 months will not be asked questions on a second crop season.

#### Answer options relevant for respondent

In some cases, farmers are given the opportunity to provide their responses using a timeframe aligning with their memory. A farmer may indicate whether they remember the costs spent on hired labour for a certain activity per hour, per week, per day, per month, or per event.



## II. Preparing the survey for use

### Introduction to the intake form

As the measurements for costs and revenue sources can differ per context, an intake form was prepared to adjust the survey to align it with the context of interest. Topics from the intake form focus on four main purposes:

- 1. Adapting survey response options with multiple-choice questions and/or a predetermined list eliminates farmers responding with open-ended answers.
- 2. Adapting survey questions to ensure farmers in the context of interest understand the questions.
- 3. Administering and collecting data such as contact, partner, geographic and other general information.
- 4. Data analysing and cleaning by collecting valid responses of key outcomes of interest. Using a range for the market price of a crop by necessitating a maximum and/or minimum value is one such example.

### Purpose of each element captured in the intake form

Each individual element of the intake form fulfils one or multiple purpose(s). Table 4 lists the topics captured from the intake form and each purpose of inclusion.



Survey

#### TABLE 4: TOPICS COVERED BY INTAKE FORM AND THEIR PURPOSE

| Торіс  | Purpose of inclusion                |                              |   |                                      |  |
|--|-------------------------------------|------------------------------|---|--------------------------------------|--|
|  | Adapt survey<br>response<br>options | Adapt<br>survey<br>questions | Administration or<br>data-collection<br>preparation | Data analysis<br>or data<br>cleaning |  |
| Partner information  |                                     |                              |   |                                      |  |
| Company information  |                                     |                              | •   |                                      |  |
| Availability of farmer database  | •                                   |                              | •   |                                      |  |
| General context  |                                     |                              |   |                                      |  |
| Administrative division of country of interest                             |                                     | •                            |   |                                      |  |
| Units of land measurement  | •                                   | •                            |   | •                                    |  |
| Average farm size  |                                     |                              |   | •                                    |  |
| Crop of interest   | •                                   | •                            | ٠   | •                                    |  |
| Local currency   | •                                   |                              |   | •                                    |  |
| Data collection permit required  |                                     |                              | ٠   |                                      |  |
| Local conditions to consider   |                                     |                              | •   | •                                    |  |
| Crop specific (cocoa/coffee)   |                                     |                              |   |                                      |  |
| Average farm size dedicated to focus crop                                  |                                     |                              |   | •                                    |  |
| Main unit of weight measurement for focus crop                             | •                                   | •                            |   | •                                    |  |
| Market-price range focus crop  |                                     |                              |   | •                                    |  |
| Yield range crop of interest   |                                     |                              |   | •                                    |  |
| Main sources of income   |                                     |                              |   | •                                    |  |
| Type of cocoa/coffee variety produced                                      | •                                   | •                            |   | •                                    |  |
| Step of production process wherein coffee is sold                          | •                                   |                              |   | •                                    |  |
| Type of equipment used   | •                                   |                              |   | •                                    |  |
| Local way of addressing production levels                                  |                                     | •                            |   |                                      |  |
| Availability of records of inputs, quantity sold and prices                | •                                   |                              |   | •                                    |  |
| Types of input used  | •                                   |                              |   |                                      |  |
| Type of labour activities  | •                                   |                              |   |                                      |  |
| Number of harvest seasons per year   |                                     |                              |   | •                                    |  |
| Other  |                                     |                              |   |                                      |  |
| Membership of cooperatives and information on certifi-<br>cation providers | •                                   |                              |   |                                      |  |
| Non-labour income sources  | •                                   |                              |   |                                      |  |
| Type of livestock/poultry from which income is earned                      | •                                   |                              |   |                                      |  |
| Crops other than focus crop produced by farmers in the region              | •                                   |                              |   |                                      |  |
| Loan providers   | •                                   |                              |   |                                      |  |
| Products and/or services received by the farmers                           | •                                   |                              |   |                                      |  |

There are several steps required when preparing the survey for use. Please reference the Excel version of the survey as a reference guide.

#### STEP 1

#### Have the core survey ready for adjustments

Depending on the purpose of data collection as well as the tool used to collect data, consider the best "location" to adjust the survey by selecting one of the following options:

- A. If data collection is via an online survey tool and the survey is conducted in *multiple* contexts: digitalise the basic survey (tab "Paper Survey" in Excel) using the online survey tool first. Each time the survey is prepared for data collection in a new context, make a copy of the basic survey; the copy will be used to adapt the basic survey to the context of interest.
- **B.** If data collection is via an online survey tool and the survey is conducted in *one* context: adjust the survey directly in the Excel file (tab "Paper Survey") first then digitalise.
  - If the possibility exists where the survey might be used in the future, consider digitalising the survey using the online tool first before making a copy; see option A.
- **C.** If data collection is on paper: adjust the survey directly in Excel (tab "Paper Survey") before delivering a paper survey.

#### STEP 2

#### Fill in the intake form with a local expert

A local expert, such as an agronomist, a partner representative or someone with knowledge on the context of interest and the focus crop, will aid in completing the intake form. Conducting a short interview with the expert will help determine who is best suited to fill in the intake form.

#### STEP 3

#### Adjust survey questions using the intake form

The filled-in intake form can now be used to adapt the survey questions. The Excel file (tab "{focus crop} full survey") has questions highlighted in light blue and dark blue. These questions need to be rephrased and the questions should be adapted as follows:

• Light-blue highlighted cells in column F ("Text") contain the input desired and a reference number to the intake form within brackets ([]). Column AF may contain a link to that section of the intake form. The figure below demonstrates a cocoa survey example. Question Q2.7 (row 13) requires the [LAND MEASUREMENT UNIT INDICATED in section 2.2] of the intake form. If the indicated main land measurement unit was hectares, Q2.7 (cell F13) should be rephrased to: *Do you use hectares as a measurement unit for land measurement*?



#### FIGURE 2: REPHRASING QUESTIONS HIGHLIGHTED IN LIGHT BLUE

|    | Α | В           | D    | E         | F  |
|----|---|-------------|------|-----------|--|
| 1  |   |             |      |           |  |
| 2  | ( | Group       | Que  | stion     |  |
| 3  | # | Title       | # in | # in form | Text   |
| 7  | 2 | Farm        | 1    | 4         | Location of the farmer   |
| 8  |   | information | 2    | 5         | In what [ADD 1st level administrative division (2.1)] is the farm located? |
| 9  |   |             | 3    | 6         | In what [ADD 2nd level administrative division (2.1)] is the farm located? |
|    |   |             | 4    | 7         | In what [ADD IF APPLICABLE 3rd level administrative division (2.1)] is the |
| 10 |   |             |      |           | farm located?  |
| 11 |   |             | 5    | 8         | In what community/village is the farm located?                             |
| 12 |   |             | 6    | 9         | Geolocation of the farm  |
|    |   |             | 7    | 10        | Do you use [LAND MEASUREMENT UNIT INDICATED 2.2] as a measurement          |
| 13 |   |             |      |           | unit for land measurement?   |
|    |   |             |      |           |  |

- **Dark-blue highlighted** cells in column F contain questions applicable only if the options require adjustment by the local expert in the intake form. Only two adjustment types exist: 1) adding additional question options or 2) indicating question options from the default survey are not applicable. A reference to the correct place in the intake form is indicated [within brackets] for the dark-blue question; column AF may provide a link to the actual location in the intake form.
  - When the local expert has added additional question categories, substitute the reference to the intake form [within brackets] with the applicable options provided by the expert. The default survey includes one dark-blue highlighted question to substitute the reference to the intake form [within brackets] with one additional question option shown in the intake form. If more than one additional question option is added in the intake form, insert an extra row in Excel to ask the same question, inserting a row for each additional question option separately. If no additional question options are filled in the intake form, eliminate the dark blue question.
  - 2. If the local expert indicated question options from the default survey are not applicable to the local context, remove this question.

The link between the intake form (Section 5.2) and the full survey form (Section 16) demonstrates how to clarify the usage of the dark-blue highlighted questions. The following two figures (Excel snapshots of the intake and full survey forms) provide an example:

The local expert had determined section 5.2 in the intake form could have two other income sources for the local context. Excel tab "Intake form {focus crop}" displays the options to indicate the alternative income sources as an income source in Q16.1 (Excel rows 123-127, column D). From the example, the two relevant sources will be placed in rows 123 and 124 (Figure 3).



#### FIGURE 3: INTAKE FORM SECTION 5.2: OFF-FARM, NON-LABOUR INCOME

|     | A B                                       | С          | D                           | E                          | F                   |
|-----|---|------------|-----------------------------|----------------------------|---------------------|
| 113 | 2   |            |                             |                            |                     |
| 114 | Do farmers receive income from the follo  | owing off- | Profit from rent of land    |                            | yes, no, sometimes? |
| 115 | farm non-labour income sources?           |            | Profit from rent of (owne   | d) equipment               | yes, no, sometimes? |
| 116 |   |            | Value addition activities   | (processing)               | yes, no, sometimes? |
| 117 |   |            | Sale of seeds or seedlin    | gs                         | yes, no, sometimes? |
| 118 |   |            | Government transfers        |                            | yes, no, sometimes? |
| 119 |   |            | Sharing technical experi    | cies/farming practices     | yes, no, sometimes? |
| 120 |   |            | Remittances (money red      | ceived from family men     | yes, no, sometimes? |
| 121 |   |            | Credit (e.g. credit for agr | ricultural inputs from inj | yes, no, sometimes? |
| 122 |   |            | Gifts (money received fr    | om non family membe        | yes, no, sometimes? |
| 123 | From what other off-farm non-labour       | income     | 1                           |                            |                     |
| 124 | sources                                   |            | 2                           |                            |                     |
| 125 | List max. 5 other sources that are not li | sted       | 3                           |                            |                     |
| 126 | above but relevant in the context of inte | rest.      | 4                           |                            |                     |
| 127 |   |            | 5                           |                            |                     |

Therefore, question Q16.11 (row 390, highlighted in dark blue) on the full survey form should be rephrased for the first relevant source and one additional row should be inserted for Q16.12 to contain the second relevant source (Figure 4).

#### FIGURE 4: FULL SURVEY FORM: DARK-BLUE HIGHLIGHTED QUESTIONS

| - 4 | Α  | В        | D    | E         | F  |
|-----|----|----------|------|-----------|--|
| 1   |    |          | -    |           |  |
| 2   |    | Group    | Qu   | estion    |  |
| 3   | #  | Title    | # in | # in form | Text   |
| 380 | 16 | Other of | ⇒1   | 377       | Do you have sources of income that do not relate to farm activities? I'll read you a lie |
| 381 |    | income   | 2    | 378       | In the past 12 months, how much income did you have from rent of land?                   |
| 382 |    |          | 3    | 379       | In the past 12 months, how much income did you have from rent of equipment?              |
| 383 |    |          | 4    | 380       | In the past 12 months, how much income did you have from value addition activities       |
| 384 |    |          | 5    | 381       | In the past 12 months, how much income did you have from sale of seeds or seedling       |
| 385 |    |          | 6    | 382       | In the past 12 months, how much income did you have from government transfers?           |
| 386 |    |          | 7    | 383       | In the past 12 months, how much income did you have from remittances?                    |
| 387 |    |          | 8    | 384       | In the past 12 months, how much income did you have from gifts?                          |
| 388 |    |          | 9    | 385       | In the past 12 months, how much income did you have from credit?                         |
| 389 |    |          | 10   | 386       | In the past 12 months, how much income did you have from sharing technical               |
| 390 |    |          | 11   | 387       | In the past 12 months, how much income did you have from [ADD ALTERNATIVE                |
| 391 |    |          | 12   | 388       | In the past 12 months, from what other sources did you have income?                      |
| 392 |    |          | 13   | 389       | In the past 12 months, how much income did you have from those other sources?            |

#### STEP 4

#### Adjust survey responses using the intake form

The intake form can add response options for multiple-choice questions. Cells highlighted in **yellow** indicate where response options should be added if necessary (i.e., if alternative options are indicated in the intake form).

The link between the intake form (Section 4.6) and the full survey form (Section 7) clarifies the usage of questions highlighted in yellow. Please refer to the following two figures (snapshots from Excel's intake and full survey forms) for an example:

The local expert had determined the main input types used for the focus crop production, which are displayed in the intake form, Section 4.6 (Excel rows 68-78) (Figure 5).

#### н T. J ĸ L. Μ 1 67 6 68 What type of inputs are used to produce cocoa? Seeds and/or seedlings yes, no, sometimes? 69 Compost (organic fertilizer) yes, no, sometimes? 70 Fertilizer yes, no, sometimes? Chemicals (pesticides, fungicides, herbidyes, no, sometimes? 71 72 Beneficial insects yes, no, sometimes? 73 Pest traps yes, no, sometimes? 74 Irrigation (water, irrigation tubes, drip irrig yes, no, sometimes? 75 Electricity yes, no, sometimes? 76 Other, please specify 77 Other, please specify 78 Other, please specify

#### FIGURE 5: INTAKE FORM SECTION 4.6: INPUT TYPES FOR FOCUS CROP PRODUCTION

Thus, Question Q7.1 (Excel "{focus crop} full survey" tab, row 179) uses the input types from the intake form to generates a multiple-choice list from which the farmer can indicate the inputs used for the focus crop production. Any relevant input not listed from responses should be added to Q7.1 (in the yellow highlighted section, column "I"). Likewise, Question Q7.9 (row 187, highlighted in dark blue), should be rephrased and questions should be added if multiple alternative inputs are indicated (as explained in Step 3).



Survey

Guide

|     | Α | B             | D             | E         | F   |  |
|-----|---|---------------|---------------|-----------|---|--|
| 1   |   |               |               |           |   |  |
| 2   |   | Group         | Que           | stion     |   | Options  |
| 3   | # | Title         | # in          | # in form | Text  | Options  |
|     | 7 | Profit from   | 1             | 176       |   | Seeds and/or seedlings Compost (organic fertilizer) Chemicals (pesticides,                 |
|     |   | farm          |               |           |   | herbicides, fungicides) Beneficial insects Pest traps Irrigation (water, irrigation tubes, |
|     |   | activities -  |               |           | In the first season, did you purchase or spend money on any of    | drip irrigation systems, storage tanks) Electricity [ADD ALTERNATIVE INPUTS                |
| 179 |   | input costs - |               |           | the following farm inputs or supplies to take care of your cocoa? | 4.6][Other, please specify None of the above I don't know I prefer not to say              |
| 180 |   | cocoa -       | 2             | 177       | In the first season, how much did you spend on seeds and/or       |  |
| 181 |   | season 1      | 3             | 178       | In the first season, how much did you spend on Compost (organic   |  |
| 182 |   |               | 4             | 179       | In the first season, how much did you spend on Chemicals          |  |
| 183 |   |               | 5             | 180       | In the first season, how much did you spend on beneficial         |  |
| 184 |   |               | 6             | 181       | In the first season, how much did you spend on pest traps?        |  |
| 185 |   |               | 7             | 182       | In the first season, how much did you spend on Irrigation (water, |  |
| 186 |   |               | 8             | 183       | In the first season, how much did you spend on electricity?       |  |
| 187 |   | _             | <b>&gt;</b> 9 | 184       | In the first season, how much did you spend on [ADD               |  |
| 188 |   |               | 10            | 185       | What other inputs did you purchase or spend money on in the       |  |
| 189 |   |               | 11            | 186       | In the first season, how much did you spend on other input(s)?    |  |

#### FIGURE 6: FULL SURVEY FORM: MULTIPLE-CHOICE QUESTION HIGHLIGHTED IN YELLOW

#### STEP 5

#### **Adjust dependencies**

Typically, a question asked is dependent on the response the farmer provided earlier in the survey. On the full survey form, a question on which another question is dependent is reported in column O and the answer option which determines whether a question is asked is reported in column P. Since some of the questions and responses are adjusted in previous former steps, the dependency rules for some questions need to be adjusted.

To illustrate how the dependency rules and the colouring of the cells work, assume question B depends on the multiple-choice response indicated for question A. Question A is rephrased based on input from the intake form and also its multiple-choice options are dependent in the intake form. This causes the dependency rules for question B to change. These rules should be adjusted by hand if this is not automated using an online survey tool.

The survey uses the following colours to indicate how the dependency rules should be adjusted:

- Cells in column O highlighted with red indicate the dependency of question A should be adjusted
- Cells in column P highlighted with green indicate the cells where the response option of question A should be adjusted.

The link between the intake form (Section 4.7) and the full survey form (Section 9: profit from farm activities – labour and transportation costs – focus crop – season 2) demonstrates how to adjust dependencies of the red and green highlighted questions. The following two figures (Excel snapshots of the intake and full survey forms) provide an example:

The local expert had determined farmers may execute irrigation/watering and selling, two "<u>alternative labour activities</u>" available in the intake form to produce the focus crop (Excel rows 85 and 90, respectively).



#### FIGURE 7: INTAKE FORM SECTION 4.7: INPUT TYPES FOR FOCUS CROP PRODUCTION

|    | Н                | I.                 | J                       | К                      | L                 | М                   |
|----|------------------|--------------------|-------------------------|------------------------|-------------------|---------------------|
| 80 | 7                |                    |                         |                        |                   |                     |
| 81 | What labour ac   | tivties do farmers | (and hired labour) e    | xecute to produce      | cocoa?            |                     |
| 82 | Please make ca   | ase specific       | Land preparation (lay   | ing of contour lines,  | drainage, remo    | yes, no, sometimes? |
| 83 | by editing betwe | en the brackets!   | Planting / Transplanti  | ing / Seeding          |                   | yes, no, sometimes? |
| 84 |                  |                    | Crop maintenance (v     | veeding, pruning, cro  | op-protection)    | yes, no, sometimes? |
| 85 |                  |                    | Irrigation/Watering     |                        |                   | yes, no, sometimes? |
| 86 |                  |                    | Fertiliser and compose  | st application         |                   | yes, no, sometimes? |
| 87 |                  |                    | Agrochemical applica    | ation (pesticides, fun | igicides)         | yes, no, sometimes? |
| 88 |                  |                    | Harvesting (pod cutti   | ng, transport to colle | ction site)       | yes, no, sometimes? |
| 89 |                  |                    | Post-harvest process    | sing (fermentation, d  | lrying, selecting | yes, no, sometimes  |
| 90 |                  |                    | Selling (bringing to th | e market)              |                   | yes, no, sometimes  |
| 91 |                  |                    | Other, please specify   |                        |                   |                     |
| 92 |                  |                    | Other, please specify   |                        |                   |                     |
| 93 |                  |                    | Other, please specify   |                        |                   |                     |

Therefore, the full survey form's answer in Q9.92 and question in Q9.95 would be dependent on those "<u>alternative labour activities</u>" indicated in the intake form. Given this example, water/irrigation and selling would become part of the Answer(s) (cell P292) and Question (cell O295) shown in Figure 8.

#### FIGURE 8: FULL SURVEY FORM WITH ROWS REQUIRING DEPENDENCY ADJUSTMENTS

|     | D    | E         | 0   | Р                                     |
|-----|------|-----------|---|---------------------------------------|
| 1   |      |           | 0   |                                       |
| 2   | Que  | stion     |   |                                       |
| 3   | # in | # in form | Question  | Answer(s)                             |
| 292 | 92   | 289       | During the second season, did you carry<br>out any of the following activities in order<br>to take care of your cocoa?  | ADD alternative labour activities 4.7 |
| 295 | 95   | 292       | How do you remember the amount you<br>paid for a hired worker for [ADD<br>ALTERNATIVE LABOUR ACTIVITY 4.7]?<br>You can choose among: per hour, per<br>day, per week, per month, or for all the<br>work related to [ADD ALTERNATIVE<br>LABOUR ACTIVITY]. | Other, please specify                 |



17

#### STEP 6

#### Automate: input from a response is used as input for a question

If possible, some questions should be rephrased based on responses provided earlier in the survey. Questions for which this linkage to other questions applies are highlighted in orange.

One example is the link between Q2.13 and Q12.1. The farmer is asked in Q2.13 (Excel row 19 – not shown) to indicate the crop that generates the highest income after the focus crop. Q12.1 is reported in the figure below (Excel row 326). If the farmer responds "rice" to Q2.13, Q12.1 should be rephrased to reflect the answer to Q2.13 to read: *"In the past 12 months, how much rice did you produce?"* 



#### FIGURE 9: REPHRASED QUESTION BASED ON A RESPONSE PROVIDED EARLIER IN THE SURVEY

If an automatic change to a question based on an earlier response is not possible, adding an enumerator note to the question is recommended to clarify the question refers to an earlier-provided response in the survey (in this example, the crop that generates the highest income for the households other than cocoa).

#### STEP 7

#### Make other context-specific adjustments

Survey cells highlighted in **purple** are reserved for other context-specific, required adjustments. Including an informed consent (Excel cell F4), which applies for the context of interest, is one such example.

#### STEP 8

#### Using the intake form for other purposes

Stated earlier, the intake form can also be used for either administrative purposes and data collection preparation or data cleaning and analysis. What this practically implies can differ per context. Examples of using the intake form for data-collection preparation are assessing whether a data-collection permit is required or whether local conditions (e.g., political unrest or bad weather) can affect data collection. It is advised to share the completed intake form with the team responsible for data cleaning and analysis as it can provide them with knowledge on the context of interest and knowledge on valid responses.



#### Overview of adjustments per colour

The table below shows a quick overview of the different colours in the surveys and an explanation of the corresponding adjustments necessary based on the input from the intake form.

#### TABLE 5: OVERVIEW OF COLOURS IN THE SURVEYS AND THEIR EXPLANATION

| Cell colour      | Corresponding survey adjustment   |
|------------------|---|
| Light-blue cells | Rephrase question in column F   |
| Dark-blue cells  | Rephrase question in column F and add the same question for each additional option provided in the intake form or remove default questions regarding default options indicated as non-applicable in the intake form |
| Yellow           | Adjust survey response options column I   |
| Red              | Rephrase the dependency question in column O  |
| Green            | Rephrase the response options in column P   |
| Orange           | Automate the phrasing of the question based on an earlier response. When not possible, add an enumerator note to the question explaining to which earlier response in the survey this question refers               |
| Purple           | Adjust informed consent to local context  |

## **III. Assumptions**

Assumptions are made related to costs and income that are expected to be irrelevant for the majority of farmers of interest in order to limit the number of survey questions and prevent irrelevant questions to be asked to the majority of farmers. Survey users may wish to consider setting context-specific assumptions to simplify data collection.

- Cocoa or coffee is not used for own consumption.
- Actual income is only shared by the household members as actual income is measured with the intention of measuring the living income gap.



## Definitions

| Description   |
|---|
| The sum of net income (revenue minus costs) from three main income sources: income from farm activities; off-farm labour income; and other sources of non-farm, non-labour income.  |
| Having enough money for food, housing, education, health care, transportation, and other es-<br>sential needs, which includes the provision for unexpected events (e.g., fire, drought, hospitalisa-<br>tions) once farm costs are covered.   |
| An area of land, together with house and buildings, used to grow cops and/or keep animals as a business.  |
| One who owns or takes care of a farm.   |
| Refers to the primary crop smallholders supply to the actor(s) interested in data collection.   |
| A household is a person or group of people (blood related or not), who share the same dwell-<br>ing (or part of it), share main meals, and/or deal in common with other basic needs, based on a<br>common budget.   |
| Income from the focus crop, income from other crops as well as income from livestock.   |
| Living Income Community of Practice   |
| Net annual income required for a household in a particular place to afford a decent standard of living for all members of that household.   |
| The calculated income level a typical household in a particular region needs to cover their basic needs. The goal is for the actual income to reach (and exceed) the level of the living income.  |
| The difference between smallholder farmers' actual income and living income. The goal is to eliminate the living income gap.  |
| All money left after subtracting the costs from the total money received. (Revenue minus costs)   |
| Income received from the sale or rental of property, private transfers, and gifts from non-house-<br>hold members, etc.   |
| Family members within the household supplementing household income with another business, artisanal work, or labour outside the farm.   |
| Examples include income received from the sale or rental of property, private transfers, and gifts from non-household members.  |
| Data collected directly from individual farmers through farmer surveys. Whereas primary data collection requires resources, the advantage of survey data is that it provides more precise and relevant information particular to the case of interest.  |
| Data not directly retrieved from the farmers of interest and therefore only can provide a proxy<br>or estimation of the actual farmer income of the farmers of interest. Secondary information on<br>farmer incomes can be found in international databases, sector reports, national statistics, or<br>academic studies. |
| Money received by selling products without subtracting costs.   |
|   |



## **Tables and Figures**

| TABLE 1  |    |
|--|----|
| Income sources and costs considered to measure net income from farm activities                               | 7  |
| TABLE 2Description of costs used to calculate income from non-farm labour sources                            | 8  |
| TABLE 3Description of financial transfers and other sources of income used tocalculate "other income"        | 8  |
| TABLE 4   Topics covered by intake form and their purpose  | 11 |
| TABLE 5   Overview of colours in the surveys and their explanation   | 19 |
| FIGURE 1<br>Visualisation of the mathematical breakdown to generate each of the three<br>main income sources | 5  |
| FIGURE 2<br>Rephrasing questions highlighted in light blue   | 13 |
| FIGURE 3<br>Intake form section 5.2: off-farm, non-labour income   | 14 |
| FIGURE 4<br>Full survey form: dark-blue highlighted questions  | 14 |
| FIGURE 5<br>Intake form section 4.6: input types for focus crop production                                   | 15 |
| FIGURE 6<br>Full survey form: multiple-choice question highlighted in yellow                                 | 16 |
| FIGURE 7<br>Intake form section 4.7: input types for focus crop production                                   | 17 |
| FIGURE 8<br>Full survey form with rows requiring dependency adjustments                                      | 17 |
| FIGURE 9<br>Rephrased question based on a response provided earlier in the survey                            | 18 |



## **Consulted Literature**

Anderson Schaffner, J. (2000). Employment *Designing household survey questionnaires for developing countries: lessons from 15 years of the Living Standards Measurements Survey* (Vol. 1, pp. 217-250).

Barrett, C. B., & Reardon, T. (2000). Asset, activity, and income diversification among African agriculturalists: Some practical issues. *Available at SSRN 257344*.

Barrett, C. B., Bezuneh, M., Clay, D. C., & Reardon, T. (2001). *Heterogeneous Constraints, Incentives, and Income Diversification Strategies in Rural Africa.* 

Chenery, H. B., Srinivasan, T. N., Schultz, T. P., Behrman, J. R., Strauss, J., Rodrik, D., & Rosenzweig, M. R. 1988). Handbook of development economics (Vol. 4): Elsevier.

COSA. (2020). COSA Indicators. Retrieved from https://thecosa.org/master-list/

The Committee on Sustainability Assessment (COSA) & KIT Royal Tropical Institute (2020). Guidance on calculating household income. Retrieved from <a href="https://c69aa8ac-6965-42b2-abb7-0f0b86c23d2e.filesusr.com/ugd/0c5ab3\_a7e70e185bc84c3d9a628c7b4971b65b.pdf">https://c69aa8ac-6965-42b2-abb7-0f0b86c23d2e.filesusr.com/ugd/0c5ab3\_a7e70e185bc84c3d9a628c7b4971b65b.pdf</a>

Covarrubias, K., de la O, C. A., & Zezza, A. (2009). Accounting for the diversity of rural income sources in developing countries: the experience of the rural income generating activities project. Paper presented at the presentation at the Wye City Group Meeting on Rural Development and Agricultural Household Income.

De Mel, S., McKenzie, D. J., & Woodruff, C. (2009). Measuring microenterprise profits: Must we ask how the sausage is made? *Journal of development Economics*, 88(1), 19-31.

Glewwe, P. (2000). Household Roster Designing household survey questionnaires for developing countries: lessons from 15 years of the Living Standards Measurements Survey (Vol. 1, pp. 135-143).

Glewwe, P., & Reardon, T. (2000). Agriculture *Designing household survey questionnaires for developing countries: lessons from 15 years of the Living Standards Measurements Survey* (Vol. 2, pp. 139-181).

Global Living Wage, (2020). Living Income. Retrieved from https://www.globallivingwage.org/about/living-income/

Haggblade, S., Hazell, P., & Reardon, T. (2010). The rural non-farm economy: Prospects for growth and poverty reduction. *World Development, 38*(10), 1429-1441.

LiCOP. (2020). Measuring Living Income. Retrieved from <u>https://www.living-income.com/measurement-actual-income.</u>

Lowder, S. K., Skoet, J., & Raney, T. (2016). The number, size, and distribution of farms, smallholder farms, and family farms worldwide. *World Development*, *87*, 16-29.

McKay, A. (2000a). Should the survey measure total household income? *Designing household survey questionnaires for developing countries: lessons from 15 years of the Living Standards Measurements Survey* (Vol. 2, pp. 83-104).

Vijverberg, W. P. M., & Mead, D. C. (2000). Household Enterprises *Designing household survey questionnaires for developing countries: lessons from 15 years of the Living Standards Measurements Survey* (Vol. 2, pp. 105-138).

https://dictionary.cambridge.org/dictionary/english/



