Aligning Living Income Methodologies in the Cocoa Sector

Lessons from the Ben & Jerry's and Tony's Open Chain MEL Working Group

FAIRTRADE FOUNDATION

Acknowledgments

Prepared for the Living Income Community of Practice

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Executive summary

Measuring and reporting farmer incomes relative to living income benchmarks is a core challenge for organizations working in the cocoa sector. While there is a consensus on the need to support farmers to reach a living income, challenges remain for organizations when deciding what strategies, methodological approaches and assumptions they will adopt when measuring, and reporting on, living incomes within their value chains.

That's why since 2021, an inter-organizational Monitoring, Evaluation and Learning (MEL) Working Group of industry partners – including Ben & Jerry's, Fairtrade Foundation and Fairtrade International, Tony's Open Chain, Sustainable Food Lab, Barry Callebaut and IDH – have been working together to:

- **Share findings and learnings**
- **Agree on key principles for data collection**
- **Streamline efforts**
- **Align on the definitions of key variables that are central to measuring and reporting cocoa incomes**

This case study examines how the Working Group has navigated the challenges associated with these common data collection practices. It shares our aims to improve collaboration across organizations, alignment and streamline of producer income data collection in two Ivorian cocoa cooperatives in Côte d'Ivoire within Ben & Jerry's value chain.

We also outline data collection tools the members of the Working Group used between 2018 and 2022 (including before the Working Group was formed) to measure living incomes in two co-operatives in Ben & Jerry's value chain. We offer recommendations for other organizations and researchers interested in measuring cocoa incomes based on our learnings from a systematic review of the resulting studies.

Along with the key recommendations below, the case study discusses the process of alignment itself and the key principles that helped the Working Group agree on many of the key variables associated with measuring living incomes.

Summary of recommendations

- **Consider the benefits of data collection approaches for farmers and co-operatives**. That includes sharing back useful data insights to help them understand their farm relative to others, or utilising tools that are relevant for farm decision-making, such as farmer field books. Farmer feedback about data collection methods should be built into income assessments to monitor how methodologies are beneficial to participants and how they experience them.
- **If resources, data requirements and co-operative capacity allows, researchers should prioritize farmer field books for income data collection in the Ivorian cocoa sector**. Where possible, field books should also be used as a first choice for:

  - **Productivity information** – followed by sales and co-operative records, provided researchers are aware of the possibility of side-selling.
  - **Costs of production** – including the costs of fertilizers, pesticides, rental costs and Labor. However, regardless of the data collection tool used, we recommend that researchers are transparent about the costs included in their cost of production figures, including any assumptions about wages for hired Labor.
  - **Non-cocoa farm income information**.
  - **Value of food grown on the farm**. If other tools are used, farmer recall should be triangulated with other market value information when translating produce consumed into a monetary value. Furthermore, we recommend that studies that evaluate the monetary value of food grown on the farm suggest proxy values for others in the sector to adopt for consistency in modelling and reporting.

- **Survey tools should be deployed as infrequently as is feasible**. When surveys are used, efforts should be combined to collect information that is relevant for as many partners as possible, including farmers and co-operatives.
- **Design tools with various benchmarking methods in mind**. For example, gathering information about the number of adults in the household and their available Labor time, along with the number of children and other dependents.
- **Report and communicate all key variables as means and medians, and compare median income to the living income benchmark**. Where possible, we recommend also reporting the full distribution of income along with the benchmark.
- **When reporting the percentage of households at or above a living income, adjust the living income benchmark to individual household sizes**.[1] Furthermore, to account for the skewed nature of income data, we recommend that the percentage of households at or above the living income should be reported alongside the median income of the sample relative to the benchmark.
- **Collaborating stakeholders should adopt shared producer codes for each farmer or household to enhance analysis when working across data sets**. These codes should be anonymized to protect farmers' identities and ideally be codes used and selected by the co-operatives themselves.
- **Measure or triangulate farm size and cocoa area using GPS polygon mapping wherever possible to ensure accuracy in reporting**.
- **Reduce the frequency and invasiveness of off-farm income questions in household income tools**. The Working Group recommends that the first principle of farmers' right to privacy is considered and that researchers carefully consider the value of asking invasive off-farm income questions, particularly when off-farm diversification programs are not a key intervention.

1. See accompanying methodological note, "Adjusting Living Income Benchmarks for Household Size in the Cocoa Sector: Methodological Note from the Ben & Jerry's Tony's Open Chain MEL Working Group"

1.
Introduction

Following the work of Martha and Richard Anker on progressing the concepts and methodologies around Living Wages, businesses and non-governmental organizations in the cocoa sector have increasingly taken up the concept of living incomes as a central part of their sustainability efforts. Fairtrade International defines a living income as a net household income 'sufficient… to afford a decent standard of living for all household members – including a nutritious diet, clean water, decent housing, education, healthcare and other essential needs, plus a little extra for emergencies and savings – once farm costs are covered'. [2]Many actors within the cocoa sector, including Fairtrade, report progress towards living incomes within their cocoa value chains. Despite broad interest and agreement regarding the importance of measuring living incomes, challenges remain for organizations when deciding what strategies, methodological approaches, and assumptions they will adopt when measuring, and reporting on, them in their value chains.

The Living Income Community of Practice (LICOP), a multistakeholder learning platform of which Fairtrade is an active member, has provided resources for stakeholders to measure and report on incomes in agricultural supply chains, offering recommendations for measurement tools, income models and definitions of key income indicators. [3]However, many recommendations for measuring living incomes are understandably flexible and context-specific, suggesting several approaches for data collection based on organizations' bespoke data needs and capacities. As a result, actors within the cocoa sector develop and often adopt income measurement tools on an ad-hoc basis. While useful for stakeholders' individual insight needs, the adoption of varied methodologies and reporting standards can make interpretation of results, cross-comparison with other data sources, and industry collaboration difficult. Furthermore, difficulties with comparability between studies often means that more research is conducted than is strictly necessary, resulting in additional requests drawing on the time and capacity of cocoa co-operatives and farming households.

This case study will examine how the inter-organizational Ben & Jerry's and Tony's Open Chain MEL Working Group (the 'Working Group') navigated the challenges associated with these common data collection practices. It will also look at the Working Group's aim to improve collaboration across organizations, alignment and streamlining of producer income data collection in two Ivorian cocoa co-operatives. This Working Group of industry partners includes Ben & Jerry's, Fairtrade, Tony's Open Chain, Sustainable Food Lab, Barry Callebaut and IDH, and has worked together since 2021 to:

- **Share findings and learnings**
- **Agree on key principles for data collection**
- **Streamline efforts**
- **Align on the definitions of key variables that are central to measuring and reporting cocoa incomes**

2. Living income - (fairtrade.net)
3. LICOP (2021). "Looking to measure incomes and the income gap? FAQ v. 1.0". Accessed from https://www.living-income.com/_files/ugd/0c5ab3_3f1005e97de84a3195f03a68b204ac75.pdf

Income diversification at COOPAZA Cooperative, Côte d'Ivoire

Purpose and scope of this case study

The purpose of this case study is to offer insight to other organizations working and reporting on living incomes in the cocoa sector. This insight includes the progress the Working Group has made on aligning income data strategies, and covers overall principles, methodological approaches and agreement on specific variable definitions.

It is important to note that the Working Group is just one example of how income data can be used in the cocoa sector. This case study outlines our approach in a context where partners involved have resources to invest in Monitoring, Evaluation and Learning (MEL), and where farmers participate in many income- related interventions. The two Ivorian co-operatives supplying Ben & Jerry's value chain are involved in several overlapping interventions around productivity, income diversification, co-operative strengthening, and capacity building, which increases the Working Group's need for precise data on a variety of indicators related to farmer incomes. For example, because farmers are engaged in productivity program interventions, partners in the Working Group require very detailed and accurate information regarding input use and yield to fully understand the impact of these interventions. This informs our recommendations on methodological approaches throughout the report. The specific use-case of data within the Working Group means that not all recommendations will be relevant for organizations or researchers working in contexts with more limited data needs or resources, such as hotspot analyses or income risk assessments.

Given this context and scope, in this report we will outline the tools utilized by the Working Group between 2018 and 2022 to measure living incomes in two co-operatives in Ben & Jerry's value chain, and offer recommendations based on our learnings from a systematic review of these studies. We also offer a separate methodological note with recommendations regarding adjusting living income benchmarks for household size. This is for researchers and users of data beyond our specific use-case and will be relevant in a wider variety of contexts. Along with these practical recommendations, we also hope to provide insight on the process of alignment itself, including the opportunities and challenges we have navigated through our work so far, as well as outlining the next stages in our ongoing efforts to streamline our work.

2.
Case study approach

This case study draws upon: a desk review of the five income tools; two income models adopted by members of the Working Group; six key stakeholder interviews with representatives from partner organizations; and a review of Working Group meeting minutes, notes, and progress from 2022 to early 2023. We approached the case study in a multi-phased, participatory manner, where regular Working Group meetings were used to share, discuss, and validate findings as the case work progressed. Fairtrade Foundation facilitated two validation discussions with the Working Group as part of this case study. The first followed the desk review stage, and the second followed the interviews. The discussions during each validation meeting shaped the direction of the following phase of the case study research. Additional details about the case study methodology can be found in **Annex C**.

The Working Group's motivations and key principles

The Working Group is brought together by the Fairtrade Foundation and was formed in 2021 to streamline Monitoring, Evaluation, and Learning (MEL) processes within the Ben & Jerry's partner cooperatives, particularly around living incomes. The group meets monthly to discuss strategies to measure and understand the contributions of various interventions with the Ben & Jerry's partner cooperatives, including Fairtrade sourcing, Living Income Reference Price payments, productivity packages and Living Income Accelerator programs.[4]

In our discussions and one-on-one interviews, Working Group members have described the many benefits and opportunities being part of the Working Group brings to the organizations they represent, along with co-operatives and farmers. Most notably, members are excited at the diverse range of partners involved in this work, representing many different actors, priorities and stakeholders in the cocoa sector. Many members feel that the Working Group is unique in that diverse stakeholders have come together with the key aims of sharing and adapting to each other's approaches. As such, all members are open to feedback and flexible in their methodological approaches, which has made possible the complex work of streamlining data collection and aligning on key principles, definitions and assumptions. In turn, this allows the group to collectively prioritize principles such as co-operative capacity building and farmer research burdens when considering how we gather information on cocoa farmer incomes.

2022 marked an important transition for the two co-operatives in Ben & Jerry's value chain as the company joined Tony's Open Chain as a mission ally.[5] In addition to a new source of data for Ben & Jerry's through Tony's Open Chain's Bean Tracker traceability system, there was also a new motivation for all Working Group members to combine efforts on data collection. In May and June 2022, the Working Group met for two workshops in Abidjan, Côte d'Ivoire, and Zurich, Switzerland, to discuss the transition to Tony's Open Chain; review the findings of recent income studies; and plan for collaboration to collectively measure and understand progress towards living incomes in these co-operatives.

From these workshops, we learned that the Working Group is data-rich in terms of information about farmer incomes. In the previous five years, members of the Working Group had implemented seven studies using five different tools with the co-operatives in Ben & Jerry's and Tony's Open Chain supply chains, in addition to data available through co-operatives and traceability system information. However, despite this wealth of information, comparing results between studies is often difficult. Income figures differ between not only co-operatives, but between studies, and it is difficult to understand how we could best normalize the data to understand the effects of interventions on price, productivity, diversification and co-operative capacity building. Together, these challenges have motivated us to prioritize alignment and streamlining as we derive learnings from past studies and plan for future assessments of farmer incomes in the Ben & Jerry's partner co-operatives.

4 We're Working With Fairtrade To Support Farmers On The Journey To A Living Income | Ben & Jerry's (benjerry.co.uk)
5 Ben & Jerry's joins forces with Tony's Chocolonely to make chocolate 100% slave free - Fairtrade Foundation

Core principles of the Working Group

As our work on aligning income methodologies progressed, the Working Group arrived at three core principles that guided our review of the approaches and decision-making around our path forwards.

Principle 1: Farmer and co-operative capacity building and data ownership

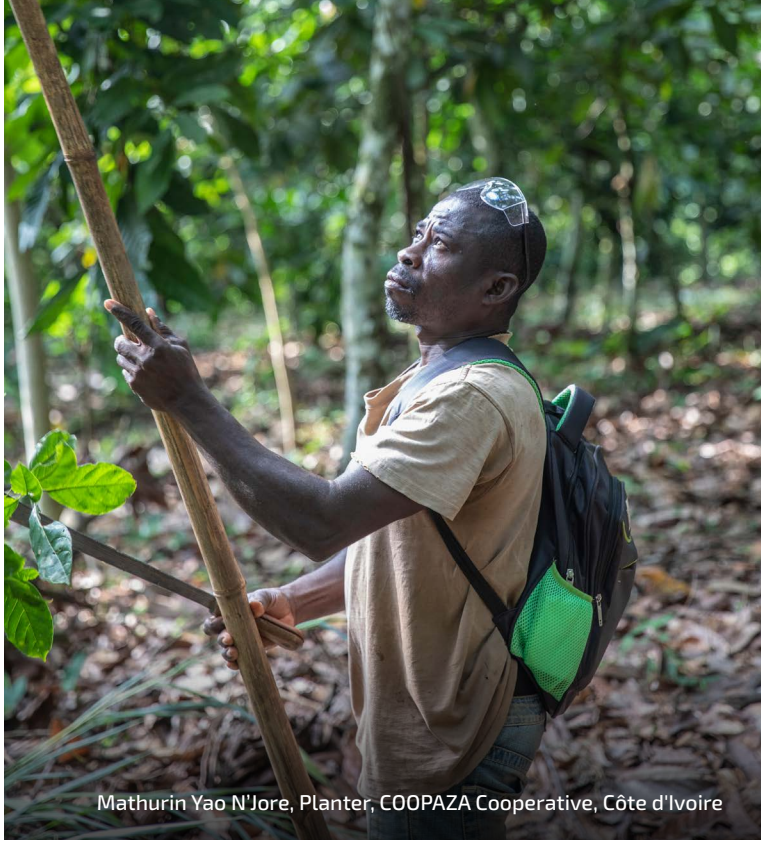
One of the key questions that motivated the Working Group to evaluate our data collection activities was around how we could reduce the 'research burden' on farmers and co-operatives. In other words, we aim to reduce the frequency and intensity of surveys and questionnaires that farmers are asked to participate in alongside their regular farm management and co-operative activities. Through our discussions and review of recent studies, we have progressed this aim towards more advanced principles around farmer and co-operative involvement in data collection. As a result, we will aim to prioritize data collection activities that produce useful data for farmers and co-operatives, and those which encourage co-operative capacity building. In time, this means co-operatives can manage and own income-related data independently.

We recognize that, at this stage, not all data collection tools will be 'perfect' in this regard, and that co-operatives vary significantly in their capacities and desires to manage income-related data for their members. However, as we look forward to future planning of income data methodologies, we have agreed to ask ourselves key questions around whether: farmers will access and benefit from the data collection; how we can support co-operatives to be involved in the data collection or lead if they are able and willing; and how these methods can be part of longer-term plans to support co-operatives in independent data collection, management and ownership.

The Working Group recommends that, where possible, data collection activities are planned with direct farmer benefit and co-operative capacity building and management in mind.

Principle 2: Data availability and sharing

For nearly all members of the Working Group, data availability and quality are limiting factors when understanding progress to living incomes in Ben & Jerry's partner co-operatives. The Working Group is keen to reduce the quantity of data collection efforts between members in order to invest in higher quality, meaningful approaches to understanding living incomes. As such, we have learned that setting up robust non-disclosure and data sharing agreements is a must when working to align methods and streamline data collection approaches to understand incomes.



Mathurin Yao N'Jore, Planter, COOPAZA Cooperative, Côte d'Ivoire

The working group recommends, where possible, partners working with the same groups of farmers should prioritize combining data collection efforts.

Principle 3: While we progress on alignment, we must prioritize transparency

The Working Group is a diverse group of industry stakeholders with varying data requirements, evaluation priorities and resources. As such, it comes as no surprise that perfect alignment on every variable and methodological approach is not feasible, particularly within the space of two years. However, a clear finding from our discussions, and through individual interviews, is that understanding precisely what and how different income variables are measured is a critical first step toward comparing studies and drawing collective insights. In the absence of perfect alignment on methodology and assumptions, the Working Group highlights the need for transparency regarding the 'building blocks' of income models and agreement on common definitions to improve comparability between tools.

'The Working Group recommends that each study that reports on living income data should include an appendix which contains a clear and transparent overview of the definitions, assumptions and data sources used. We have developed a template to facilitate transparent definitions within the Working Group and encourage others to adopt it in their own report appendices.

3. Methodological review of the Working Group's income tools

This section will provide a brief overview of the methodological tools and data sources deployed in the studies by members of the Working Group between 2018 and 2022. We evaluated these studies based on how they approached core variables associated with understanding living incomes, including farm size, productivity/yield, costs of production, non-cocoa farm income, off-farm income, the value of food grown on the farm, the living income benchmarking adjustment methodology,[6] and household size. We also evaluated the Working Group's tools based on other methodological considerations, including budget and effort required; recall bias; whether the researchers gathered panel data; and if they promoted gender awareness and joint decision-making. An in-depth overview of these variables, along with common approaches to their measurement in the cocoa sector, can be found in Annex A. Later on, we also provide an assessment of the Working Group studies, highlighting areas where they are strong or weak in measuring these important variables.

Overview of Working Group income measurement methodologies

The income measurement tools and data sources used by the Working Group between 2018 and 2022 can be grouped into three broad categories:

1. Daily farm record-keeping methodologies
2. Farmer income surveys
3. Supplementary data sources that provide information through 'business as usual' co-operative operations, or information that is not directly relevant to income measurement.

Much of this case study will explore the methodological approaches, assumptions and alignment of the tools that directly measure farmer income, but the tools used in all three categories are summarised below. In each summary, we highlight any strengths or challenges in measuring the key variables and parameters described earlier.[7] A visual summary of the data sources, strengths and weaknesses of these tools is presented in Table 5 (on page 16).

6 This refers to how the Living Income benchmark is adjusted to account for household size to report on the percentage or number of farmers over the Living Income threshold. See Annex B for a detailed explanation of the approaches to benchmark adjustment approaches.

7 All data collection tools surveyed, including farmer field records which provide granular data, had some instances of inaccurate data or outliers within datasets which were excluded or validated as required.

3.2. Daily Farmer Record-Keeping Tools

Members of the Working Group deployed two studies using types of daily farmer record keeping Farmer Field Books as used by Barry Callebaut and Agri-Logic[8], and Fairtrade International's Farm Record Books. While these farmer record keeping studies differed in their epistemological approach and implementation, the method generally involves farmers recording their activities daily in farm books, which are compiled and aggregated by the researchers. The field books include detailed daily records of: any sales or costs; hired or family labor investments; the use of inputs; and the production of outputs. Both studies involved farmers keeping handwritten records, which were digitalized by the research team at a later stage. This process can be resource-intensive and slow down the analysis process for researchers and farmers. Members of the Working Group are considering the benefits and challenges associated with developing digital collection tools in the future; early evidence from the Barry Callebaut and Agri-Logic study suggest that fully digital data collection at the farmer level may be a challenge in the near term.

Farm record-keeping tools, while labor-intensive for farmers and those implementing the study, provided very accurate and granular income data and reduced recall bias when compared to survey methods. The tools are also designed to support farmers with farm and business management, offering a means in which to better understand costs and income, and support them with decision-making. The analysis of Barry Callebaut Farmer Field Books by Agri-Logic provided slightly more detailed information about fertilizer use, environmental impacts, and the impact of Good Agricultural Practices (GAPs) on productivity. Meanwhile, the Fairtrade International Farm Record Books study included data about crops grown for home consumption and involved in-depth coaching with farming households to encourage gender awareness and joint decision-making.

Koffi Boame Abel Patrick, General Secretary, COOPAZA Cooperative, Côte d'Ivoire

Barry Callebaut Farmer Field Book by Agri-Logic

This study was conducted by Barry Callebaut and Agri-Logic with 237 farmers across four co-operatives in the Ben & Jerry's value chain. The study covers 2021 mid and main crops. The Ben & Jerry's study was a subset of a larger Barry Callebaut and Agri-Logic Farmer Field Book program that includes other co-operatives in the Barry Callebaut supply chain. It also involved an annual 1-1.5-hour survey conducted at the end of the season (January/February) to collect additional information on loans and repayments, services used and income from non-cocoa sources.[9] From these other co-operatives, 78 farmers were selected as a control group to compare results with the Ben & Jerry's partner farms.

8 Agri-Logic is an agricultural consultancy firm who have been contracted by Barry Callebaut to adapt their in-house FFB system to cocoa and deliver the farmer field books study with cooperatives across Côte d'Ivoire since 2016. Agri-Logic is not a formal member of the MEL Working Group, but because of their central role in the deployment of the Farmer Field books study, they attended WG meetings on two occasions throughout 2022 to share findings and discuss their methodology.

9 Barry Callebaut & Agri-Logic (2023). Farmer yield and income in Côte d'Ivoire: an analysis of farmer field books (FFBs). Accessed from https://www.barry-callebaut.com/system/files/2023-05/Barry%20Callebaut%20Agrilogic%20White%20Paper%202023_1.pdf

Barry Callebaut Farmer Field Book by Agri-Logic Tool summary		
Tool overview	**Strengths**	**Challenges**
Required farmers to record their daily farming activities, including labor, input use, purchases and sales. Records collected twice a month. Income information was included (revenue, cost and margins). The field book tools were also concerned with indicators around input use, labor investment and yield. Participating farmers received two reports of their data: one personal one and one at a group level where they can compare their own performance to that of their peers.	Granular data about input use, labor investment and on-farm income. Detailed information around GAPs and their relationship with productivity was particularly useful when determining the impacts of productivity interventions. Analysis was able to determine that paying the Living Income Reference Price, a key intervention with Ben & Jerry's partner farmers, had a significant positive effect on farmers' incomes if they had above average cocoa areas. Farmer reports are a good feedback mechanism for farmers to benefit from their data.	Excluded food grown for home consumption. Non-cocoa income is identified through an annual survey.* Small and potentially biased sample size: each co-operative had, on average, only 59 participants in the study. The Ben & Jerry's partner co-operatives were prioritized based on their involvement with Ben & Jerry's programs.[10] Room for further integration with the co-operative systems and management in this methodology. High costs and effort required.

Table 1: Summary of the Barry Callebaut Farmer Field Book by Agri-Logic tool deployed in 2021.
*Farmer Field Books can collect this information, but as noted later in the study, most Working Group members recommend against including off-farm income information unless necessary.

Fairtrade International Farm Record Books

This study included 1,200 farmers across six co-operatives in Côte d'Ivoire, two of which were in Ben & Jerry's value chain, and four were in Tony's Open Chain supply chains. The data collection covered the 2020/21 harvest season. The study aimed to improve farm management capacity of co-operative members, raise gender awareness and foster gender-inclusive intra-household economic management, and evaluate the effectiveness of related project interventions in closing the income gap.

10 Agri-Logic sought to control for selection bias to some degree by isolating selection effects through Propensity Score Matching (PSM), but there may be unobservable selection effects that are not factored in

11 While the researchers included rental income as part of the record keeping activity, income from abusan (sharecropping) was only reported from one cooperative in the study. This was an unexpected finding as the practice is widespread in the region, and so further research is required to confirm or update the rental income figures.

Fairtrade International Farm Record Books Tool summary		
Overview	**Strengths**	**Challenges**
Included information about cocoa sales, inputs and labor use, along with non-cocoa income from cash crops. Also asked farmers to report income from sharecroppers[11] and the amount and value of food grown and consumed on the farm. Adopted a gender awareness component, where women and men were encouraged through regular coaching to complete the record books together. Farmers were visited twice a month by co-operative staff who were trained in the method, and the data was held and owned by co-operatives, who shared the information with Fairtrade International for aggregation and analysis.	Granular data about input use, labor investment and on-farm income. Analysis from this study was particularly strong in understanding the labor dedicated to farming activities as well as the contribution of food grown for home consumption to household income. The co-operative-based and coaching approach benefitted farmers as they gained skills in farm management and financial planning and adopted joint decision-making within the household, alongside data collection.	Excluded off-farm income.* High costs and effort required, particularly for the coaching method.

Table 2: Summary of the Fairtrade International Farm Record Books tool deployed in 2020/21.
*Farmer field books can collect this information, but as noted later in the study, we recommend against including off-farm income information unless necessary.

Income Survey Tools

Members of the Working Group deployed or had access to additional income information gathered through more traditional survey tools. Three income studies conducted between 2018 and 2022 involved a specific tool aimed at understanding the living income gap, while the other survey is part of a larger cocoa programme with a small income-related module. While surveys are generally easier to implement than farmer field records, they rely heavily on farmer recall. This can distort findings and reduces the accuracy and reliability of data, particularly around input use, productivity and different sources of income.

Fairtrade Income Survey Tool

Fairtrade implemented three income surveys in Ben & Jerry's partner co-operatives – in 2018 (two co-operatives, n = 290), 2020 (four co-operatives, n = 97), and 2022 (one co-operative, n = 233). The survey tool used in each of these studies was initially produced by the Impact Institute who were contracted to conduct the 2018 and 2020 evaluations.

Fairtrade Income Survey Tool summary		
Overview	**Strengths**	**Challenges**
Long-form survey which collected information about farmers' cocoa production, sales, labor and costs of production over two harvesting seasons. Involved very detailed prompts, for example asking farmers about 'sprayers' and 'buckets' specifically instead of about 'tools' generally, and about labor dedicated to specific farming activities. Same tool used multiple years to compare results between studies.	In addition to cocoa income and costs, the survey included information on non-cocoa cash crops and the value of food consumed at home. Included questions on off-farm income.* Relatively low cost and effort compared to Farmer Field Book studies, which made larger sample sizes possible. Offered an opportunity for assessments of programs or additional question modules.	Detailed question approach is intended to reduce recall bias; however, the length of the survey required more time and engagement from farmers. Off-farm income data incomplete; only between 6 and 15 percent of farmers provided answers about their off-farm income. Differences in sampling, income models at the point of analysis, and minor changes to improve the survey tool made comparison of results between years challenging. Analysis of value of food grown for home consumption was challenging.

Table 3: Summary of the Fairtrade Income Survey Tool deployed in 2018, 2020 and 2022.
*While the survey included these questions and so would be useful to report on off-farm income, as outlined later in the report, we do not recommend gathering this information unless strictly necessary.

West Africa Cocoa Programme Survey

The West Africa Cocoa Programme (WACP) is implemented by Fairtrade Africa (FTA) in Côte d'Ivoire and Ghana and aims to empower and build the professional capacity of co-operatives in the cocoa sector through needs assessments, technical support and services.[12] A survey tool is deployed bi-annually with members of Fairtrade cocoa co-operatives to provide information across several domains, including but not limited to, co-operative strengthening, the adoption of GAPs, and incomes.[13] The sample sizes for the most recent WACP Survey in the Ben & Jerry's partner co-operatives were 40 and 71.

West Africa Cocoa Programme Survey Tool summary		
Overview	**Strengths**	**Challenges**
Implemented as part of the WACP programme; it is not an income-specific survey. The income module of the WACP survey provides top-level information for total earnings, as well as asking questions regarding cocoa production, the proportion of income from cocoa and other crops, off-farm income, and produce consumed on the farm.	Provides top-line information which allows for the contextualization of income information with the overall performance of the co-operatives, as well as the ability to compare income information across Côte d'Ivoire and Ghana. Low cost and effort to Working Group members. Data is consistently and regularly collected, making the WACP a reliable data source.	Income information is top-line and does not provide insights into the contributions of Ben & Jerry's interventions. Relatively small sample size limits strength of analysis for each co-operative. Working Group members cannot influence the questionnaire or tailor it for their bespoke needs.

Table 4: Summary of the West Africa Cocoa Programme Survey Tool

12 West Africa Cocoa Programme – Fairtrade Africa
13 It is important to note that the Ben & Jerry's Working Group are users of, rather than implementors of, the WACP study data, and so cannot directly influence the design or reporting of findings from this survey tool.

Supplementary Data

Multidimensional Poverty Index Survey

Since 2019, Tony's Chocolonely has conducted annual surveys using the Multidimensional Poverty Index (MPI) tool[14] with co-operatives in their supply chain. Meant as a supplementary picture of the status of farmers in these co-operatives, the MPI seeks to understand poverty beyond monetary deprivations[15] and provides information about the broader livelihood context of farmers. In the context of the Ben & Jerry's and Tony's Open Chain co-operatives, the MPI tool helps to triangulate and contextualize the income information derived from other tools and models. The consistent sampling of the MPI study was particularly useful as a means of understanding the impacts of external events (for example, the COVID- 19 pandemic or high inflation) on the poverty status of cocoa farming households.

'Business as Usual' Data

In addition to the data provided through the data collection tools above, members of the Working Group also access and rely upon what we will refer to as 'business-as-usual' data which is information derived from the regular activities of farmers, co-operatives and traders, and can be used to derive living income information. This includes GPS polygons for farm location and size, productivity (measured through sales volumes), income from cocoa sales and any premium payments (such as the LIRP).

Akoua Catherine Kouame, Cocoa Farmer, COOPAZA Cooperative, Côte d'Ivoire

14 Alkire, S., Kanagaratnam, U., & Suppa, N. (2018). The global multidimensional poverty index (MPI): 2018 revision. OPHI MPI methodological notes, 46.
15 World Bank, n.d. https://www.worldbank.org/en/topic/poverty/brief/multidimensional-poverty-measure#:~:text=What%20is%20the%20Multidimensional%20Poverty,more%20complete%20picture%20of%20poverty

Summary of Working Group income methodologies

The Working Group has a rich archive of data to understand the living income status of farming households in the Ben & Jerry's value chain. When our main sources of data are considered, the Working Group has very good coverage of our key variables and considerations. Our focus has been to identify where we can improve comparability between the Working Group's living income studies to derive more accurate and in-depth insights, and how we can streamline our efforts to take advantage of the strengths in our current portfolio of methodologies.

The review of methodologies demonstrated that farmer field books, while requiring higher levels of cost and effort, provide more detailed and accurate information for many of the key variables necessary for measuring living incomes when compared to survey tools. However, there is variation between the farmer field book methodologies implemented within the Ben & Jerry's partner co-operatives, with each offering different strengths and weaknesses when considered against our key variables and considerations. For example, the Barry Callebaut and Agri-Logic study included more detailed prompts for productivity inputs, while the Fairtrade International study included information around food produced for home consumption and took a gender-sensitive approach to coaching and implementation. However, we are keen to integrate the strengths of some survey activity, such as through the West Africa Cocoa Programme, as well as 'business as usual' data that is available through sales and co-operative records in our future living income assessment strategy. A summary table of the strengths and weaknesses of the farmer field book and survey tools deployed by the Working Group can be found below. Additional information about the variables and areas of consideration, including our motivation for their inclusion in our analysis, common means of measurement in the sector and common challenges to their measurement, can be found in **Annex B**.

Key Strong Acceptable Weak	Key Variables							Other Considerations				
	Yield	Costs of Production	Non-cocoa farm income	Off-farm income	Value of food grown on farm	Household size/ living income benchmarking	Labor hours	Cost and effort	Farmer recall	Panel data	Gender	Farmer feedback and use of data
Farmer Field Books	Strong	Strong	Strong	Acceptable	Acceptable	Strong	Strong	Weak	Strong	Strong	Weak	Acceptable
Fairtrade International Farm Record Books	Strong	Strong	Strong	Weak	Strong	Strong	Strong	Weak	Strong	Acceptable	Strong	Strong
Fairtrade Income Survey	Acceptable	Acceptable	Acceptable	Acceptable	Weak	Acceptable	Acceptable	Acceptable	Weak	Weak	Weak	Weak
West Africa Cocoa Programme Survey	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Strong	Strong	Weak	Weak	Weak	Acceptable

Table 5: Working Group methodology assessment tool – a visual 'traffic light' overview was developed by the Working Group in February 2023 to understand the group's data collection. This graphic outlines the strengths and challenges associated with the core income measurement tools deployed by the Working Group between 2018 and 2022. The green tiles represent where the methodology was strong or exceeded expectations, the yellow represents an assessment of 'acceptable', and red represents where the methodology was weak or did not address the variable/area of consideration. The codes reflect the Working Group's qualitative assessment of each tool relative to others used with B&J's partner cooperatives, and to address the specific questions and conditions in which they were deployed; in other contexts, assessments of the different tools may differ.

4. Key findings and recommendations

This section will outline the key findings and recommendations that arose through our desk review and subsequent validation discussions. These findings and recommendations are considered in the context of our key principles and our assessment of our future capacities and data interests as a diverse group of organizations. First, we will outline our progress towards alignment and recommendations on general methodological approaches, for example the tools utilized to collect income data, and the ways in which we improve comparability and benchmark our results. Second, we will outline our progress towards, and alignment and recommendations for, the definitions and data collection strategies for the key variables associated with living incomes.

Alignment on general methodological approaches

Deprioritizing survey data

Through reviewing the methodologies and findings from the survey and farmer field book tools deployed with the Ben & Jerry's partner co-operatives, it was clear that for most of the variables of interest, farmer field books provided higher quality and more granular information than surveys tools.

Further, based on our agreement on the importance of co-benefits for farmers and co-operative capacity building in living income assessment, we accounted for farmer feedback on data collection tools when this information was available. Unfortunately, for most tools, including surveys, direct feedback was unavailable from farmers. However, through validation exercises with farmers through the Fairtrade International farm record book study, we received useful feedback where farmers indicated they benefitted from using the farm record books as it helped them understand and manage their finances better, make decisions as a household, and feel pride in their management of their farm. Because of these findings, farmer field books, particularly when implemented through co-operatives and with support for coaching, are more aligned with our key principles as a Working Group and involve a return on investment broader than the data derived from the studies.

Given these findings and priorities, we will be divesting from income surveys towards farmer record keeping and relying on shared 'business as usual' data through sales records, traceability systems, and Fairtrade Premium use data. When surveys are to be completed, for example, to measure the contributions of specific interventions, the Working Group will aim for efforts and budget to be combined, and that data resulting from these surveys are shared.

However, we recognize that farmer record books, despite having received positive reviews from farmers, are resource intensive, for farmers and researchers, and that literacy is central to farmers' ability to engage with these tools. We are looking to explore how best to manage the coaching required for these methodologies, the capacity of farmers and co-operatives to continue them without ongoing interventions, and how to streamline analysis. We are also continuing to seek farmer feedback on data collection tools in 2023, including and beyond farm record books, to continue refining our understanding of the usefulness of different methodologies (including digital record books) for farmers. Early feedback suggests that while the record books are more resource-intensive for farmers, the benefits for household and farm financial management are significant.

The Working Group recommends, if resources and co-operative capacity allows, that farmer field books are prioritized for income data collection in the Ivorian cocoa sector. We also recommend that farmer feedback about data collection methods is built into income assessments to monitor how methodologies are experienced and beneficial to participants.

Reporting medians and distributions

Within farming communities, farmer incomes tend to be skewed, where a small number of farmers, who typically have larger cocoa farming areas and/or higher productivity, have significantly higher incomes than the majority of households with smaller areas of land. For this reason, the mean household income does not represent the typical farming household as well as the median. **Figure 1** illustrates the skewed distribution of household incomes among cocoa farmers, resulting in median incomes that are lower than means. The skew in Figure 1 also demonstrates the utility of reporting distributions of household incomes in addition to median and mean figures.


Koffi Sylvain Kouame, Cocoa Farmer, COOBADI Cooperative, Côte d'Ivoire

Net household income distribution

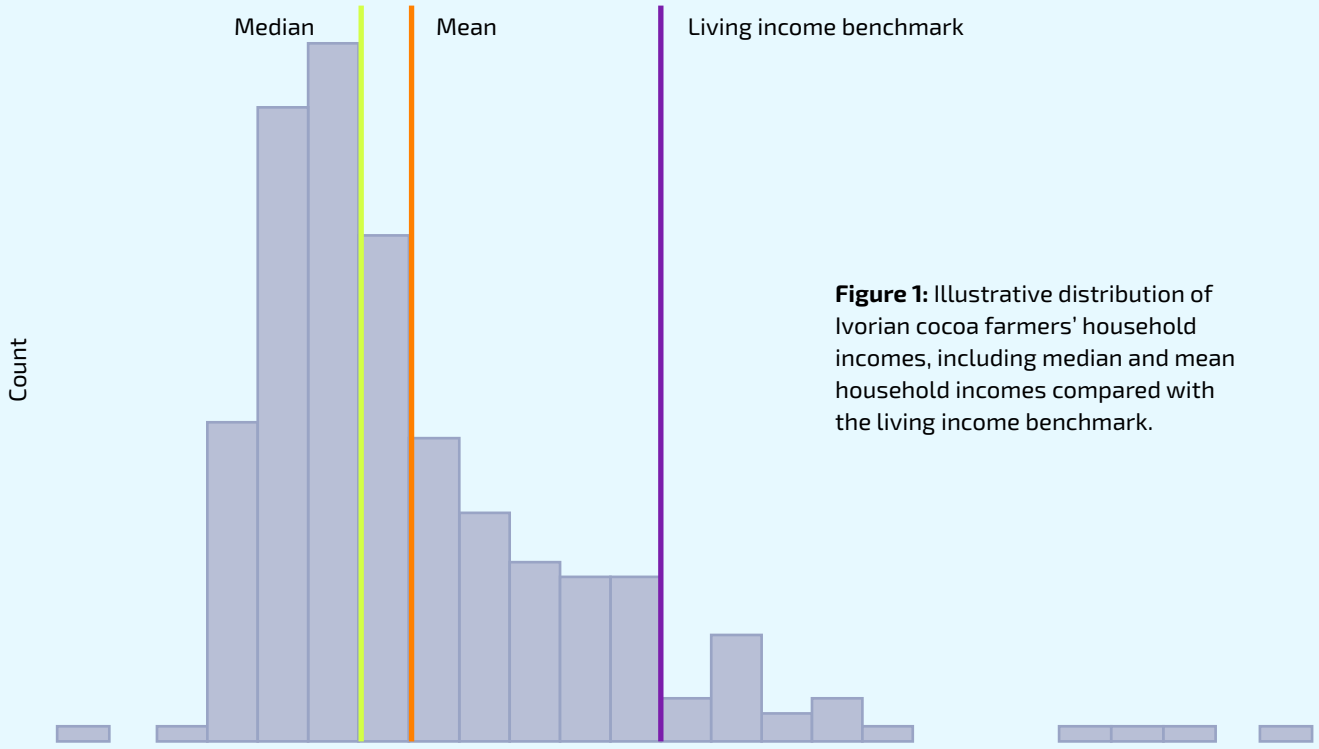


Figure 1: Illustrative distribution of Ivorian cocoa farmers' household incomes, including median and mean household incomes compared with the living income benchmark.

Meanwhile, the samples for each study conducted in our Working Group were different, meaning that the distribution of incomes and household characteristics differed between studies. These were, however, easier to compare between medians than means, which as described above, provide a better picture of the typical farming household. In our future reporting, we plan to provide both means and medians for all relevant variables to improve comparability between studies. This recommendation aligns with the Living Income Community of Practice (LICOP), which recommends reporting the gap of the median income (as a share of the living income benchmark) and the share of those below the living income benchmark.[16]

The Working Group recommends that all key variables are reported as means and medians, and that the median income is compared to the living income benchmark.[17] Where possible, we recommend also reporting the full distribution of income along with the benchmark.

16 Committee on Sustainability Assessment (COSA) and KIT Royal Tropical Institute, 2020. "Guidance manual on calculating and visualizing the income gap to a Living Income Benchmark: Prepared for the Living Income Community of Practice". Accessed from this link

17 When comparing the median household income to the living income benchmark, the benchmark should be adjusted to reflect the household sizes in the sample if they differ from the reference family. See the next section and accompanying methodological note for methods of adjustment .

In Fairtrade International's initial analysis and reporting, they used the average household size and average net income to calculate the living income gap in the co-operatives. Following the discussion with Agri-Logic during our December 2022 Working Group call, Fairtrade International re-analyzed their data to individually adjust the living income benchmark for each household's composition.

Fairtrade International discussed how the updated analysis led to changes in the reported figure for the Ben & Jerry's partner co-operative included in the study, where the proportion of households at or exceeding a living income changed from 17 percent with an average benchmark approach to 21 percent using an individual household benchmarking approach. Adjusting their mode of analysis created a more granular understanding of the co-operative-level gap to living incomes, as each household's income was compared to a benchmark that more accurately reflected their household composition. The adjustment also facilitated easier comparison of findings between the Barry Callebaut and Agri-Logic and Fairtrade International Farm Record Book studies as they had used a similar methodology for reporting the gaps to living incomes. We discuss later in this case study, however, how the precise methodology for adjusting for household size differed between the two studies which meant that comparability was improved, but not perfect, between the tools. We have also prepared a Methodology Note to accompany this case study which provides greater detail on the specific approaches that can be used to adjust living income benchmarks.

When reporting the percentage of households at or above a living income, the Working Group recommends that the living income benchmark is adjusted to individual household sizes. Further, to account for the skewed nature of income data, we recommend that the percentage of households at or above the living income should be reported alongside the median income of the sample relative to the benchmark.

Alignment on key variables

Farm Size

The Working Group encountered some issues where comparability of studies was challenging because of significant variation in the samples' average and median farm sizes. For example, the 2022 Fairtrade Income Study reported a mean cocoa area of 3.18 ha, the WACP survey reported 3.87 ha., and the Barry Callebaut and Farmer Field Books by Agri-Logic reported an average of 4.38 ha. of cocoa area for their Ben & Jerry's sample. It is unclear whether these differences were the result of sampling bias, for example where the sample of farmers in the Barry Callebaut and Agri-Logic study were more likely to have larger farms as they were involved in productivity interventions, or instead due to farmer recall/reporting inaccuracies when researchers used survey tools. All members agree that GPS polygon data is the most accurate and reliable for measuring farm size and cocoa area.

The Working Group recommends that farm size and cocoa area is measured or triangulated using GPS polygon mapping as a best practice to ensure accuracy in reporting. As cocoa is often intercropped, the Working Group recommends assumptions about the percentage of mapped land dedicated to cocoa are clearly stated.

Productivity/yield

Through the review of studies, members of the Working Group agree that farmer field books provide the most detailed and accurate yield and productivity information when compared to survey tools which rely heavily on farmer recall. Sales and co-operative records are also understood as accurate and useful information, however, members are keenly aware that these sources, while low-cost and useful for ongoing monitoring, may not account for all cocoa grown on farms and sold as farmers may sell outside of their co-operatives or sell their neighbours' cocoa. This means that productivity figures derived from sales records can be lower (in the case of side-selling) or higher (in the case of selling neighbours' cocoa) than data received from farms. Triangulating sales information with other sources, such as farmer field books or (less ideally) surveys can be useful to account for side-selling and for understanding the quantity of side-selling in different contexts.

Triangulation and comparison exercises can reveal significant differences in productivity information between methods: while Tony's Open Chain BeanTracker (sales) data is not available from the Ben & Jerry's co-operatives in the 2021/2022 season, comparing sales data to other Tony's Open Chain co-operatives included in the Fairtrade International farm record-keeping study offers some insight into the differences between farm record-keeping and sales data for productivity and yield. The median yield for the four non-Ben & Jerry's Tony's Open Chain co-operatives, for example, was reported as 700 kg/ha. through the farmer field record study and 602 kg/ha. through BeanTracker in the 2021-22 season.

The differences in productivity estimates can be partly attributed to side-selling, as identified above, but also due to differences in cocoa area between the two sets of data, which forms the denominator of yield calculations. In 2021, BeanTracker data reported total cocoa area within the relevant sample as 2832.61 ha, while the Farm Record Books study reported a total cocoa area of 3408.48 ha. Further, incomplete GPS data or exclusion of some farmers' fields from GPS mapping can distort yield figures. Therefore, it is important to ensure consistent cocoa area figures between datasets while triangulating in addition to considering the possibility of side-selling when comparing and using sales data for productivity values.

The Working Group recommends farmer field records as a first choice for productivity information, followed by sales and co-operative records, provided researchers are aware of the possibility of side- selling.

Costs of production

The Working Group agrees that farmer field books provide more granular and accurate information about costs of production than survey tools. Members also agree broadly about what should be included in cost of production calculations, recommending a minimum inclusion of inputs such as fertilizers, pesticides, rental costs and labor. When data on wages paid for hired labor is unavailable, members continue to make different assumptions about costs; for example, some assume hired labor is paid at a living wage, while others assume the prevailing market wage or 30 percent of a living wage. Table 6 below identifies the cost of production variables included in the key income studies deployed by members of the Working Group; it is clear that the Working Group is aligned on the types of variables to include in data collection. As such, our discussions around cost of production were focused primarily on how to best collect information on these variables, and because of the reduction of recall bias, farmer field books were the strongest methodology available to the group.

Variable	Barry Callebaut Farmer Field Book by Agri-Logic	Fairtrade International Farm Record Books	Fairtrade Farm Income Surveys
Fertilizer	Yes	Yes	Yes
Pesticides	Yes	Yes	Yes
Planting material	Yes	Yes	Yes
Rental costs (sprayers, tools)	Yes	Yes - not explicitly as rental costs	Yes
Energy costs	Yes	Not explicitly, could be captured in 'other costs'	Yes
Labor	Yes - Asked Wage	Yes - Asked Wage	Yes - Asked Wage
Training costs	Yes	No explicity	No
Transport costs	Yes - Included in transport	Yes	Yes

Table 6: Summary of costs of production included in key Working Group studies, 2020-2022

The Working Group recommends that, if possible, farmer field records are used to collect data on costs of production, including on the costs of fertilizers, pesticides, rental costs and labor. Regardless of tool used, we recommend that researchers are transparent about the costs included in their cost of production figures, including any assumptions about wages for hired labor.

Non-cocoa farm income

Income earned from the sale of non-cocoa cash crops remains an important variable for the Working Group, as co-operatives in the Ben & Jerry's value chain are involved in income diversification programming and we are interested in measuring the contributions of these interventions. The tools used by the group gathered information on non-cocoa income in different ways, from recall-based perception questions in survey tools to detailed record keeping of on-farm non-cocoa income in the farm record book studies. In general, there were no areas of misalignment on the measurement on non-cocoa farm income, and while some members such as Tony's Chocolonely use proxies in their income modelling, we agree in principle that when data collection occurs, farmer field record keeping is the most accurate way of recording this information in order to reduce recall bias.

The Working Group recommends, where possible, that non-cocoa farm income information is gathered using farmer field books.

5. Ongoing challenges in aligning on living incomes

The Working Group has made significant progress in aligning our strategies and assumptions to measure living incomes for the farmers within Ben & Jerry's value chain. However, despite this success, the Working Group continues to navigate areas of misalignment in our definitions of key variables and challenges to our plans to implement our recommendations internally.

Off-farm income

Working Group members acknowledge that off-farm income is often an important and significant source of funds for cocoa farming households. However, in our collective experience and across the tools we have deployed since 2018, gathering accurate and reliable information has been a challenge. Many members have experienced difficulties with data quality, farmer willingness to share, and the variable's relevance to the scope of our interventions and activities in the sector.

First, data about off-farm income from our recent studies has not proven to be robust. Only one survey tool, the Fairtrade Income Survey, asks for detailed off-farm income information. The findings of the studies where off-farm was included in the tool were inconclusive; for example, in 2018 and 2020, 94 percent and 84 percent of respondents answered 'N/A' or 'none' when asked about their off-farm income. The 'none' or 'N/A' response rate to questions around off-farm income was significantly lower (30.26 percent) among farmers who were asked about their proportion of income using a 10-stone method as part of Tony's Chocolonely MPI survey in 2022.[18] In this method, farmers were provided with 10 stones and asked to allocate the stones in a way that represented their sources of household income.

While the results of the 10-stone exercise were encouraging, overall, our findings suggest that farmers found recall challenging or were selective in the types of incomes they were willing to share with enumerators. Regardless of the reasons for the low response rate for these questions, our experience demonstrates the challenges with accessing accurate and complete information for this variable. Of course, because of these anomalies, the results from these surveys report much lower proportions of off- farm income than is assumed in living income models. Tony's Chocolonely income calculation sets other income generated by the farming household through food production, sales of other crops and services at 25 percent of the cost of living, based on a large survey of Ivorian cocoa farmers conducted by KIT in 2016.[19]

Second, in our group discussions, members outlined the challenges associated with asking farmers for income information which is not relevant to our interventions or activities. Farmers may not feel comfortable or see the relevance of sharing this private information with companies or organizations that are aimed at improving cocoa productivity and incomes, and members intend to respect this right to privacy.

In interviews and validation meetings, Working Group members discussed how our primary focus of interventions is on the farm, through interventions in cocoa productivity, price for cocoa and on-farm diversification activities. This suggests that, while off-farm income information is helpful to understand the total income of farming households, many members felt this information is not relevant to the scope of our activities and would not likely inform interventions to benefit farmers in the future.[20] In general, we are interested in understanding the returns on investment, of cash and labor, into the cocoa farm; this means that off-farm income, while an important variable in our calculations, may be out of scope for us to collect given our principles of reducing the research burden on farmers.

18 The 10-stone exercise was completed with cooperatives who participated in the MPI survey separately from the Fairtrade Income Survey in 2022, where off-farm income questions were asked in a traditional survey format.
19 The living income model for cocoa - Tony's Chocolonely (tonyschocolonely.com)
20 While recognizing the challenges around off-farm income data collection, Barry Callebaut adopt a different position than the rest of the Working Group and continue to aim to gather information about off-farm income to improve modelling and understanding of the full picture of farmers' incomes.

The Working Group continues to discuss strategies to address the challenges above combined with a need to validate assumptions within our living income models to determine a proxy for off-farm income that is relevant and sufficiently accurate in the region. We have agreed to the following three principles relating to off-farm income information which will guide these discussions:

1. **Farmers have the right to privacy regarding their income** and may not want to share this information with enumerators, traders or even their co-operatives. As one MEL Working Group member put it, farmers 'may feel like [off-farm income] is none of our business'. Organizations asking about off-farm income should consider whether this information is needed, and if so, how farmers themselves can benefit from the data being collected.
2. While some members do invest in diversification initiatives, in general **members feel as though their focus is primarily on what occurs on the farm**: cocoa income and on-farm diversification. Investing significant time, energy and social capital with farmers to gather data on off-farm incomes may not be worth it given our interventions are not aimed at increasing incomes earned outside of the farm.
3. Despite the challenges above in measuring off-farm income, which suggest we will move away from measuring off-farm income, the **Working Group needs to adopt a consistent proxy** for the variable to insert into income models. Currently, members adopt different proxies on an ad-hoc basis, including 25 percent for all non-cocoa income (including on-farm crops), labor not absorbed by the farm earning a Living Wage off-farm, and non-absorbed labor earning 30 percent of a Living Wage. We agree in principle that we need to test these assumptions with farmers, in different regions and among households with different land sizes, to determine proxy values that all members will adopt.

Based on these principles, we will continue to discuss approaches to validate proxy values for off-farm income. It may be the case that methodological approaches which prioritize co-operative ownership and trust-building, for example through farmer field books paired with co-operative-led coaching, may allow the Working Group to validate proportions of off-farm income which can be integrated into models without navigating the difficulties around privacy and willingness to share that we have encountered previously.

At this stage, the Working Group recommendation is, if possible, to reduce the frequency and invasiveness of off-farm income questions in household income tools. We recommend considering the benefits of data collection approaches for farmers and co-operatives, such as sharing back useful data insights to help them understand their farm relative to others, or utilizing tools that are relevant for their farms.

Household size

Despite agreeing to align on individual household benchmarking when reporting on the proportion or number of farmers at or above a living income, the Working Group has not reached a consensus for the precise method used to account for household size at the point of writing. Currently, some members are adjusting the household size linearly, where each household member, regardless of age or earning potential, accounts for 'one', whereas others have adopted the modified OECD equivalence scales.[21] Without agreeing methods for adjusting household size, the results cannot be directly compared. Table 7 below uses four illustrative household sizes and compositions to demonstrate how, depending on the method for adjustment used and the deviation of the household composition from the reference family, found in row 2, the individual household living income benchmark can vary significantly. These differences in individual household benchmarks have knock-on effects for reporting the proportion of households at or above a living income.

			OECD Oxford scale		OECD Modified scale		Linear (per person) adjustment		
Household size	# Adults	# Children	Adult equivalents	Living income benchmark (USD)	Adult equivalents	Living income benchmark (USD)	Adult equivalents	Living income benchmark (USD)	Range (USD)
6	4	2	4.1	6,488	3.1	6,722	n/a	5,855	867
6	2	4	3.7	5,855	2.7	5,855	n/a	5,855	0
8	4	4	4.2	8,070	3.7	8,023	n/a	7,806	264
8	2	6	3.8	7,437	3.3	7,156	n/a	7,806	651

Table 7: Illustrative figures to demonstrate how household composition and adjustment methodology affects individual household living income benchmarks. 1 USD = 612.79 XOF.

21 Adjusting household incomes: equivalence scales (oecd.org)

Soro Nadiala, Cocoa Farmer, COOBADI Cooperative, Côte d'Ivoire

While LICOP recommends adopting OECD Modified equivalence scales,[22] members of the Working Group who adjust household sizes linearly expressed concerns around the ease of analysis, common practice in the rest of the industry, and the reporting of poverty lines in 'per person, per day' terms when explaining their reasoning for this approach. The Working Group will continue to discuss these approaches, particularly as we develop new tools and aim to collectively report on learnings from our recent studies. We expand on the options for adjustment that the Working Group utilized or considered, along with explanations of how to apply these methods, in the Methodology Note which accompanies this case study.

At this stage, the Working Group recommends, at minimum, designing tools with various benchmarking methods in mind, for example, gathering information about the number of adults in the household and their available labor time, along with the number of children and other dependents.

Value of food grown on the farm

During our discussion sessions, the Working Group did not fully align on how to measure and report on the value of the food grown on the farm, partly because there were few studies deployed within the group which systematically collected this information.

However, as demonstrated by the Fairtrade International Farm Record Books study, food grown on the farm can significantly reduce household expenditures on food and so can form a large part of a living income for farmers; this is why it is a component of the Living Income Reference Price calculation assumptions. Findings from the Fairtrade International Farm Record Books study highlight the large contribution of the value of food grown on the farm: for one Ben & Jerry's partner co-operative, 24.6 percent of dietary needs were produced on the farm. The Working Group felt as though farmer daily record-keeping studies were the most accurate source of data for food grown for home consumption. The most accurate study to report on this variable, the Fairtrade International Farm Record Books study, asked farmers to identify the quantity and market value of different crops eaten at home and triangulated this information with other market sources.

Not all members of the Working Group indicated they would like to invest in measuring food grown for home consumption regularly. As such, in a similar fashion to off-farm income, the Working Group needs to identify proxy values for the value of food grown on the farm which would ideally be disaggregated by farming households which have, and have not, been included in farm diversification initiatives that encourage crops for home consumption. We will continue these discussions in our ongoing work on alignment, including considerations of appropriate secondary sources of data for this variable.

At this stage, the Working Group recommends, if possible, to use farmer field books to collect information on the value of food grown on the farm. If other tools are used, farmer recall should be triangulated with other market value information, such as the price of goods at the market, when translating produce consumed into a monetary value.

We also recommend that studies that do evaluate the monetary value of food grown on the farm suggest proxy values for others in the sector to adopt for consistency in modelling and reporting.

22 What are equivalence scales? (living-income.com)

6. Conclusion

This case study provided an in-depth review of the recent work by the Ben & Jerry's and Tony's Open Chain MEL Working Group to align on measuring living incomes in the Ivorian cocoa sector. The Working Group represents a unique collaboration between actors in the cocoa sector, including traders, certifiers, brands and non-profit organizations.

The Working Group has also made progress on identifying mutual definitions, assumptions and analytical approaches when reporting on living incomes. Most notably, we have agreed upon individual benchmarking according to household size when reporting the percentage or number of households above the living income benchmark; this will make comparison between studies of this top-line figure much easier in the future. Our discussions around other challenging variables, such as off-farm income and specific methods of adjusting for household size, have progressed significantly since 2021, and as we continue to work to align on precise definitions, the Working Group has committed to providing increased transparency and data access to allow for wider use and comparison of income data.

The Working Group's progress on aligning living income measurement since 2021 has brought us much closer to improving the effectiveness, efficiency and usefulness of our data collection and reporting activities. However, agreeing on core principles, data collection and reporting strategies, and definitions of variables is just one step towards applying them in practice. We are committed to our recommendations but recognize that implementing these principles will take time, given momentum involved in ongoing projects within the Ben & Jerry's partner co-operatives, as well as the scope of the Working Group compared to partners' other commitments and partnerships.

Some data collection activities, for example the Barry Callebaut Farmer Field Books by Agri-Logic, are part of larger and long-running projects. In cases where we have committed to data collection tools and projects, we will apply our principles of data sharing and transparency, adjusting reporting methods to align as best as possible with our recommendations and providing transparency regarding where differences may persist. We will also pursue ensuring improved access to the data so the results can be compared and used by all members of the Working Group. Farmer field books are a relatively new tool to be adopted widely within the cocoa sector,[23] so additional research is required to fully understand their accuracy and usefulness for farmers; the Working Group will continue to monitor literature in this area as it emerges to continue to evaluate our income data strategies.

Finally, most of the Working Group members work with cocoa co-operatives beyond the Ben & Jerry's supply chain, and most of the studies and tools used are adopted with co-operatives and for other partners. Attempts to align must also be feasible within this broader context so the Working Group puts forward our principles and recommendations as part of a larger conversation around income measurement alignment within the cocoa sector, including LICOP. We plan to continue these conversations within and beyond our group to refine and improve our methodological approaches.

23 While organizations such as Agri-Logic have worked on farmer field book methodologies since the early 2000, widespread interest and adoption of this methodology in the sector is more recent.

7. Annexes

Annex A: Case study methodology

A more detailed account of methods the research team used to develop this case study and validate our Working Group findings are below.

Desk review

This portion of the case study involved an in-depth review of the tools used in each study deployed by the Working Group. Based on conversations with the group throughout 2022, we identified key areas of review and comparison. These areas included reviewing important variables when calculating living incomes, for example household size, off-farm income and produce grown for home consumption, as well as other considerations, including farmer ownership and benefits from the tool, the role of farmer recall and budgetary constraints. We systematically reviewed each tool, summarizing the approaches and underlying assumptions for each area, which leaders of each study confirmed.

Following this internal review and comparison, we conducted a desk review of recommendations for each area by LICOP, along with key income studies in the Ivorian cocoa sector, such as the KIT study in 2018.[24] These external reference points allowed us to identify where the tools adopted by the Working Group aligned and diverged from other commonly cited and utilized studies and recommendations in the sector. Our findings from external comparisons fed into our final validation discussion in March 2023 where the group produced recommendations identified later in this report.

Interviews and participant observation

Following the desk review and comparison of income tools and models used by the Working Group, we conducted one-on-one interviews with representatives from each participating organization who regularly attends our monthly working group calls. These interviews served three purposes:

1. To clarify any questions on the data tools or models used by members.
2. To ask questions about challenges in measuring and comparing key income variables and the member's opinions on different approaches.
3. To discuss the opportunities, challenges, and progress of the Working Group on aligning on living income measurement.

The research team recorded and transcribed these interviews, then identified key themes for discussion in our validation meetings with the group.

As members and facilitators of the Working Group, the authors of this case study also drew upon meeting minutes, notes and personal reflections as facilitators of this group to contextualize the findings from interviews regarding the Working Group's progress and form top-line recommendations to other groups aiming to align living income approaches across diverse stakeholders.

24 Tyszler, M., Bymolt, R., & Laven, A. (2018). Analysis of the income gap of cocoa producing households in Côte d'Ivoire. KIT- Royal Tropical Institute. Report accessed from this link

Annex B: Key variables overview

Key variables of concern for the Working Group

We briefly define the variables the Working Group identified as of particular interest when aligning on living incomes below. We will provide context regarding why these variables are significant to the Working Group, common approaches to their measurement, any common benchmarks or assumptions used in the sector, and typical challenges to measurement and comparability.

Farm size (cocoa area)

The size dedicated to cocoa is critically important to understanding farmers' potential to derive a living income solely from their farm. Ben & Jerry's and Tony's Chocolonely both follow the Fairtrade LIRP model, which adopts the concept of a minimum 'viable farm size' which is the farm area that can absorb the household labor of three full-time equivalent adult workers; in Côte d'Ivoire this is defined as 5.3 hectares for the farm and 4.4 hectares of cocoa.[25]

Farm size and cocoa area can be measured via farmer recall, for example as a question in a survey tool, through co-operative records, or through GPS polygon mapping, which is often made accessible through trader and co-operative databases.

Productivity/yield

Productivity and yield data for cocoa production is critical to understanding living incomes in the sector.

For members of the Working Group, this information is also crucial to understanding the effects of farm improvement plans, Productivity Packages (PPs) and other interventions on Good Agricultural Practices. Yield is also a component of Fairtrade's LIRP calculation, with the productivity target of 800 kg/ha[26], described as an achievable and sustainable yield for cocoa production in Côte d'Ivoire.

Productivity data can be derived from several sources. Most simply, questions on productivity can be included on a survey tool used with farmers. Daily farmer field record keeping, two examples of which were utilized by partners in the Working Group, can provide more granular data on farm production. Finally, co-operative and trader sales records can provide an indicator of farm productivity; however, it is important to note that these sources do not account for any cocoa grown on the farm which is not sold through the co-operative.

Costs of production

Costs of production include the costs of any agricultural inputs, including fertilizer, pesticides, seedlings, energy and tools. This information can be determined through farmer recall or, for more granular information, through farmer field record keeping. Analysis ideally can also include depreciation of assets as part of the costs of production.

Costs of production also includes labor costs. While the majority of labor to run the farm is expected to be completed by households, Fairtrade International estimates that around 62 hired labor days are required on a viable Ivorian farm to reach the productivity benchmark of 800 kg/ha.[27] Labor costs can be determined either through farmer recall, farmer field record-keeping, or through an assumption-based proxy.

Non-cocoa farm income

Farmers often grow cash crops other than cocoa and earn income from the sales of these crops. In the context of this case study, Ben & Jerry's is also interested in measuring the contributions of recent and ongoing farm diversification programs within their supply chains to farmers' incomes.

Depending on the tool, information about non-cocoa on-farm income can be determined through similar approaches to cocoa income, through collecting information about land dedicated to each crop, productivity and costs of production. Farmers may, however, instead be asked about their proportion of net income derived from these sources at a high level to simplify data collection tools. This aligns with LICOP's recommendation to ensure a focus on the key crop (in this case, cocoa) and to consider either a lighter set of questions for other farm income or to use the proportion of farm income coming from the focus crop to estimate total farm income.

25 2019_RevisedExplanatoryNote_FairtradeLivingIncomeReferencePriceCocoa.pdf **the values for viable farm size (and other variables) are currently under review as part of the overall LIRP review process.**
26 **Ibid.**
27 **Ibid.**

Off-farm income

Off-farm income includes all sources of income farmers may receive beyond the scope of their farm; this is most typically wage earnings in agriculture, construction and other sectors. While an important part of a household's income, it is a difficult variable to measure as practitioners within the cocoa sector, due to farmer recall, willingness to share and the appropriate scope of data collection and survey questions.

From our review of Working Group tools, off-farm income is only accounted for in farmer surveys. Some survey tools ask for precise income figures for each income source, while others ask only for farmers to estimate the proportion of total income coming from off the farm. Generally, however, off-farm income is poorly understood and is typically excluded from living income models and reporting, or accounted for through a placeholder.

Value of food grown on the farm

In addition to cocoa and other cash crops, farmers often grow produce and raise livestock on the farm and consume this in the home. The value of food grown on the farm can be significant and reduce overall living costs. For example, the Fairtrade International farm field record study determined that 24.6 percent of dietary needs were produced on the farm; this food significantly reduces the household expenditure and reduces pressure on cash income.

The quantity and monetary value of food grown on the farm is not always collected in income measurement tools. For those who do include this information, the total is often determined by asking farmers about foods they grew for their own use and monetizing it through farmer recall of market prices for the food or triangulating with secondary sources. Alternatively, some studies assume any edible non- cocoa cash crops that are not sold are consumed on the farm, with the monetary value determined by the cash price received by farmers. LICOP recommend that this data is collected as part of net farm income calculations – but note that this can be challenging to accurately collect – and suggest enumerating any unsold production at the farm gate price as part of total production value and using local average prices.

Living income benchmarking methodology

Typically, studies which measure farmer incomes are interested in measuring the gap between current incomes and living income benchmarks. Members of the Working Group refer to the benchmarks produced by the Living Income Community of Practice, which are determined using the Anker methodology. To compare income data to living income benchmarks, researchers must adjust the benchmark, which is calculated for a 'typical family' of between four to six people, to a relevant level to account for larger household sizes.

From our review, there are common strategies of adjusting the living income benchmark to account for household size. First, the benchmark can be adjusted once for all households in the sample based on the average household size of the study. This is the simplest but least accurate approach as small and large households' incomes will be compared with a benchmark that is not relevant to their household composition. Using the second approach, researchers can determine tailored living income benchmarks for the most common types of households found in the sample.[28] This provides greater insights than the first approach, but because the adjustments are based on the sample instead of universal adjustments, it can make comparability between studies difficult. Finally, researchers can choose to adjust the living income benchmark for each household in the sample individually. This is the most labor-intensive approach but is the most accurate as each household will have an individualized living income benchmark that is appropriate for their household composition.

Household size

In the smallholder cocoa farm context, living income is considered a household concept as it is normal for non-family members to pool income and share resources. Despite this general agreement, the definition of a household can vary between organizations and studies. Common definitions describe household members as those sleeping under one roof, eating meals together and/or sharing financial resources. Tools often collect household member information regarding the number of working and non-working adults including and beyond the lead farmer, children and other dependents. Anker conceptualise living income as a family concept, which means an adjustment normally needs to be made to ensure that living income benchmarks are relevant to the smallholder cocoa sector. Other organizations may also use financial dependents, which are distinct from the household concept and defines dependents as those who may not necessarily be living in the same household but who are financially dependent on the farmer and farm income.

28 KIT-Royal Tropical Institute (2018).
Demystifying the Cocoa Sector in Ghana and Côte d'Ivoire. Demystifying the Cocoa Sector in Ghana and Côte d'Ivoire - KIT Royal Tropical Institute

To adjust income data to living income benchmarks (see above), researchers must account for the resources contributed and used by different household members, and there are several ways to approach this issue. The first is to apply a linear approximation for household sizes, where each member, regardless of earnings or age, accounts for 'one'. The second is to apply an OECD equivalence scale,[29] which accounts for both economies of scale that occur with larger households as well as the different resource requirements of adults and children. There are three approaches to applying OECD equivalence scales, but the most common approach (and the approach recommended by LICOP and adopted by the Agri- Logic Farm Field Books study) is the 'modified'" scale, where the lead farmer/head of household is given a value of '1', other adults in the household '0.5', and children '0.3'.30

Other methodological considerations

In addition to the variables that are key to measuring farmer incomes, the Working Group identified the following additional considerations to account for when evaluating and comparing methodologies. These vary from general principles, such as the significance of co-operative capacity building, to the practical, such as budgetary considerations. We briefly describe them below.

Cost and effort

As outlined earlier, one of the aims of the Working Group is to improve the efficiency of collecting data on living incomes. A key consideration for the group, then, was to compare our existing tools in terms of the financial and time investments required for implementation. Certain methodologies, such as farmer field record keeping, while producing more granular data and providing significant co-benefits for farmers and co-operatives, are significantly more expensive and labor-intensive than survey tools or deriving data from sales records.

Farmer recall bias

Survey tools, particularly those administered on an ad-hoc or annual basis, require farmers to remember detailed information about the past. Because remembering precise information about yield, input use, sales and other income sources is difficult, income surveys involve a significant amount of recall bias. Tools can be designed to limit this bias by asking detailed questions or reducing the need to recall specific figures (for example asking for proportions of income from non-cocoa sources instead of precise values). However, in general, farmer recordkeeping and sales information reduces or eliminates this kind of bias.

Panel data

Members of the Working Group are interested in understanding changes in living incomes over time and through various interventions. As such, we considered the benefits of using panel data, where the same farmers are included in a sample for several years, to increase the strength of analysis when determining the drivers of changes in incomes.

Gender and joint decision-making

The prevalence of female-headed households and joint decision-making about farm and household management is low among cocoa farmers in Côte d'Ivoire. We assessed whether tools considered and encouraged gender empowerment and joint decision-making in their design. For example, tools can take into account gender and joint decision-making by enquiring about gender or through requiring both female and male household members to participate in the data collection activities. As demonstrated by the Fairtrade International farm record books study, methodological approaches can also encourage gender empowerment and joint decision-making through coaching in data collection, where both female and male heads of the household are encouraged to participate equally, consider all contributions to the household, and make decisions about household management together.

Farmer feedback and use of data

The Working Group is concerned with how farmers engage with data collection tools and feel about their use, as well as how farmers can directly benefit from our methodological approaches. When evaluating our tools, we considered whether farmers gained valuable insights from the data they shared through feedback mechanisms or the project design, and whether co-operatives were engaged in capacity-building as part of the method.

29 Adjusting household incomes: equivalence scales (oecd.org)
30 Ibid. Also discussed in the accompanying methodological note to this case study.

Annex C: Reporting template for living income studies

Variables checklist

Living income variables *These are the variables that the Working Group think are important to collect and include in living income studies.*	**Did this study collect this variable?** *Answer 'yes' or 'no'*
Non-cocoa farm income	
Off-farm income	
Value of food grown on farm	
Labor hours	
Cost of production	
LIRP or farmgate payments	
Household size/financial dependents	

Study specific details

Study specific approaches	**Detail about the approach** *Further detail about your study's approach and methodology and explanation ofany divergence from recommendations.*	
Study methodology – provide some detail on the tools you used, i.e. farmer field books, survey, secondary sources.		
Sample size – details on sample size		
Sampling strategy – provide some information on your sampling strategy		
Frequency of data collection – indicate how often you collected data		
Methodology for household equivalence to family size used – indicate which of the two approaches was used.	OECD modified equivalence scales	
	Linear equivalence	
Adjusting the living income benchmark to household size– indicate which of the three approaches was used. The Working Group recommend adjusting by individual household but recognise that approaches may vary among group members.	Adjust based on average household size in the study	
	Adjust to create tailored benchmarks for common household types in the study	
	Adjust for each individual household in the study	
Additional information – anything else you would like to share about your study or comments on any divergence from recommendations or your approach to key variables.		

Other considerations

Working Group recommendations to consider	Detail on how the study addressed this
If using surveys, did this study collaborate with others to jointly conduct surveys that collect relevant information for all partners and to reduce survey frequency?	
Did the study use farmer field records as first choice for productivity information, followed by sales and co-operative records?	
Did collaborating stakeholders adopt shared anonymised producer codes for each farmer/household to enhance analysis across data sets?	
Has the study reported all key variables as means and medians and compare the median income to the living income benchmark?	
Has the study reported the full distribution of income along with Living Income Benchmark (where possible)?	
Has the study adjusted Living Income Benchmark to individual household sizes in order to report % of households at or above living income?	
Did the study use GPS polygon mapping to measure or triangulate farm size/cocoa area?	
Is the study transparent about costs included in cost of production figures, including assumptions about wages for hired labor?	
If this study evaluates monetary value of food grown on the farm, does it suggest proxy values for others to adopt?	
Has the study considered household benchmarking methods when designing data collection tools (i.e. collect data on number of adults, their labor time, & number of children/ dependents)?	

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