STATE OF LIFE

Church and community transformation (CCT) impact study series

Local church, lasting transformation

2022 Technical Report

Rwanda, Sierra Leone, Tanzania and Zimbabwe

Foreword

Our vision at Tearfund is to see all people fulfilling their God-given potential. We recognise that local churches, organisations and individuals have a crucial role to play in places worst affected by poverty, injustice and conflict. And so we partner with them, and walk alongside them, as they transform communities, respond to disasters and influence people in power to lead fairly.

Our vision is bold and ambitious. And as a learning organisation, committed to improving and adapting, we want to know what is or is not working, and to measure what we treasure – transformation in churches and communities around the world.

We were delighted to have the opportunity to collaborate with State of Life on this pioneering study in Rwanda, Sierra Leone, Tanzania and Zimbabwe, to take our impact measurement and learning to the next level. It was only possible with the leadership, time and commitment from our country teams, church partners and their communities. The study shows the role local churches are playing in these countries, leading to lasting transformation for individuals, church congregations and communities. This is evident in improved wellbeing and across economic, personal, social and spiritual areas of life.

The results speak for themselves. This report should be an encouragement to the church, and also to those who are curious about the impact of the church today. We believe that these findings are remarkable. This is faith in action.

Catriona Dejean

Director of Strategy and Impact, Tearfund

March 2023

Executive summary

An ambitious aim

- Church and community transformation (CCT) processes aim to inspire local churches that their 'mission' involves looking outwards and meeting the needs of their communities. Meanwhile, they also empower people in churches and communities to realise their potential and then take actions to address these needs using locally available resources.

- This study sets out to test the research hypothesis that '*Church and community transformation (CCT) leads to sustainable change for individuals, church congregations and communities, evident in improved wellbeing (including economic, personal, social and spiritual outcomes).*'

- To do this, the study answers six research questions. For individuals, the research questions explore the difference in wellbeing resulting from participation in CCT activities, and the frequency and longevity of participation. For communities, the research questions explore whether individuals from churches and communities that have been engaged in CCT for a longer period of time achieve greater improvements in wellbeing, and whether impacts spread from the CCT facilitator to church members and on to the wider community.

A pioneering and robust study design with a sample size of almost 8,000 responses

- This is a large and pioneering study. The research team collected almost 8,000 survey responses across four African countries: Rwanda, Sierra Leone, Tanzania and Zimbabwe. Random sampling was used to identify 201 CCT communities and 29 control communities across the four countries. Stratified sampling was used within communities.

- Wellbeing is measured using a key outcome of life satisfaction, alongside outcome measures (22 in total) relevant to four domains (economic, personal, social and spiritual), informed by Tearfund's wellbeing framework, the Light Wheel.

- Our use of cross-sectional regression analysis allows us to control for factors outside of CCT involvement that may affect our outcomes, such as age, gender, employment and a proxy for poverty.

Positive results that are compelling, consistent and credible

- We find evidence of higher life satisfaction and other wellbeing outcomes for individuals from church congregations and communities linked to CCT. Our conclusions from our

cross-sectional analysis are compelling, consistent and backed up by qualitative evidence in Tearfund's theory of change for CCT.

- Using basic two-way comparisons, all 23 wellbeing outcomes are higher in CCT communities compared to control communities. These include access to food, medicine and schooling, resilience to unexpected events, and financial earnings.

- Regression analysis allows us to report differences in outcomes associated with CCT involvement, after controlling for other observable factors. We observe (with statistical significance) that:

    - People in CCT communities are better off than those in control communities (+1.185 higher life satisfaction, and on average +13.9 percentage points more likely to report positive outcomes across other domains).

    - Those in CCT communities who participate in CCT activities report higher life satisfaction and are more likely to report positive outcomes than those in CCT communities who do not participate (+0.588 higher life satisfaction on a 0 to 10 scale, on average +8.5 percentage points higher likelihood of reporting positive outcomes across the other domains).

    - Participating for longer or more frequently is associated with higher life satisfaction, and longevity of involvement is twice as important as participating more regularly.

    - Evidence suggests that positive impacts appear to spread from the CCT facilitator to church members, then on to the wider community as well. There is an associated higher life satisfaction of 0.771 for those in a CCT community who *do not participate* in CCT directly, compared to respondents in control communities.

    - The timing of the impact on different outcomes makes intuitive sense and resonates with the timeline of the CCT process; higher outcomes related to collaboration with others are observed from the start, improved relationships and increased voice once churches have engaged in CCT for a longer period of time, and more visionary outcomes (such as raising issues to decision-makers and creating change) are greatest where churches and communities have engaged for more than five years.

- We consider potential threats to validity (such as selection bias and omitted variable bias – both are impossible to completely eliminate) and conclude that we have a good level of confidence in our regression estimates. Due to our study design – cross-sectional data collected at one point in time, as opposed to more robust but impractical alternatives – we should not use *causal* statements (that CCT *causes* the observed differences) with *certainty*. However, we can conclude that observable impacts are, as far as possible, attributable to CCT and not to other factors controlled for in our models.

The social value of CCT processes

- Social value measurement aims to assign a monetary value to costs and benefits to society, including those that are not traded and therefore do not have a market price.

- This study uses the new UK HM Treasury recommended measurement unit for wellbeing impact, the WELLBY (wellbeing-adjusted life year). The WELLBY is defined as one person moving one point on the 0–10 Office for National Statistics (ONS) standard life satisfaction scale, for one year.

- This WELLBY is valued at £13,000 according to HM Treasury guidance. This valuation rate is then converted proportionally to median earnings into an appropriate value in our countries of £750 or US$1,033.

- With a thorough accounting for costs, including volunteering time and the value of resources mobilised by communities (when communities secure additional resources themselves to build specific *community assets*, eg a school, clinic, road etc), the Social Benefit-Cost Ratio (Social BCR) of the CCT process is between 1:18 and 1:38 (midpoint of 1:28). This means that for every $1 invested in the CCT process, between $18 and $38 may be created in social value (with a midpoint of $28).

- Time and resources mobilised by communities account for a substantial proportion of the inputs to the CCT process. Every $1 invested in the CCT process by Tearfund and partners is coupled with an estimated additional $1.5 to $2.1 of volunteer time per community[1] and an additional $4.2 to $6.4 from mobilised resources per community.[2] This gives $5.7 to $8.5 of community inputs in total (with a midpoint of $7.1).

- Even using a more conservative estimate of the benefit (using a comparison *within* CCT communities), the Social BCR remains positive.

- Including wider benefits to those not involved in the CCT process leads to a considerable increase in the estimated social value and Benefit-Cost Ratio of CCT, but we do not include them in the headline findings because we are less confident in the accuracy of the wider benefit estimates. Even without including the wider benefits, the Social BCR of CCT is very high.

The high social value, and positive outcomes associated with CCT that are sustained throughout the process, supports the case for continuing to invest in the CCT process in these communities and expand it in comparable contexts.

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[1] Volunteer time divided by Tearfund inputs. 1,030/709 = 1.5 and 1,480/709 = 2.1.
[2] Mobilised resources divided by Tearfund inputs. 3,000/709 = 4.2 and 4500/709 = 6.4.

Contents

1.   Introduction

In 2022, State of Life partnered with Tearfund to conduct a study evaluating the impact and social value of Tearfund's church and community transformation processes across four countries in Africa. This report shares the findings of the impact study.

1.1 Tearfund and the church and community transformation (CCT) processes

Tearfund is a Christian charity which partners with churches in more than 50 of the world's poorest countries.[3] Over the last 30 years, Tearfund has helped to develop facilitated processes that take local churches on a journey to achieving holistic transformation in the church and the community. Church and community transformation (CCT) processes aim to inspire local churches that their 'mission' involves looking outwards and meeting the needs of their communities.[4] Meanwhile, they also empower people in churches and communities to realise their potential, and then take actions to address their needs using locally available resources, thus breaking dependency on external interventions.

Tearfund supports CCT processes by training and investing in facilitators, who are members – or, in many cases, the leader – of the local church. Tearfund, working with local partner organisations, equips them with the knowledge of the CCT process and skills to adapt it to their own context, and they commit to implementing it in their local church and community.

The most widely used CCT process in Africa is the 'church and community mobilisation process' (CCMP).[5] This five-stage process is implemented over a period of years, and the time it takes can vary; some communities might spend one or two years in stage 1, and reach stage 5 after five years or more.

CCT activities

CCT processes begin with Bible studies that are facilitated, not taught. This enables those taking part to identify the resources available to them and recognise the mandate of the church in relation to addressing practical needs in their communities.

There may be other regular, small-scale activities implemented alongside CCT Bible studies. These may involve self-help groups (SHGs) or savings groups (for example, in Rwanda and Tanzania) or information gathering. Church members are usually the first to be engaged, reaching out to involve the wider community in the process.

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[3] Tearfund (2023).

[4] Blackham, Kariuki and Lindop (2021).

[5] Njoroge (2019). CCMP encompasses five stages, and is the process currently implemented in three of the four countries studied (Sierra Leone, Tanzania and Zimbabwe). The process in Rwanda originated from CCMP but has been substantially adapted; the five stages have been heavily condensed, and supplemented with alternative activities.

CCT initiatives

CCT Bible studies always end with a call to action. These actions often start small – for example, committing to a change in perspective or initiating a small project – but can quickly grow in scale – for example, improving or building new community assets such as schools, clinics and roads. Whole churches and communities can find themselves working together to initiate change, and these initiatives can continue beyond the end of a formalised CCT process. Tearfund does not fund CCT initiatives – communities mobilise required resources themselves.

1.2 About State of Life

State of Life helps organisations (large and small) to evaluate and measure the social impact and economic value of their activity or project.[6] State of Life's expertise lies in quantitative analysis, particularly in measurement and evaluation of wellbeing outcomes, in line with the 2021 HM Treasury Green Book,[7] in which State of Life are named advisors in the Supplementary Guidance on wellbeing.[8]

1.3 The research

State of Life was appointed to evaluate the impact of CCT, and to explore the social value created. Four countries were identified to take part in the research based on a number of criteria:[9] Rwanda, Sierra Leone, Tanzania and Zimbabwe. Tearfund's existing evidence of the impact of CCT is mainly qualitative, and includes a series of robust studies conducted using the Qualitative Impact Assessment Protocol (QuIP), which constitute 'deep-dives' into the impact of CCT in a small sample of communities.[10]

Therefore, the emphasis of this research was a large-sample, quantitative study to understand the impact of CCT at scale. Data collection took place from July to October 2022 staggered across the four countries.

The design is such that the research can be repeated in other countries and regions in order to expand the study, or repeated in the same countries in subsequent years to build a picture of the impact of CCT over time.

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[6] State of Life (2023).

[7] HM Treasury is the UK government's economic and finance ministry. The Green Book is technical guidance issued by HM Treasury on how to appraise and evaluate policies, projects and programmes.

[8] HM Treasury (2021).

[9] For example: a) the CCT process is being implemented at scale in the country, and b) there are sufficient churches that have been through the full cycle. See appendix 1 for full criteria.

[10] Tearfund (2021).

2. Aims of the Research

2.1 Hypothesis

The main hypothesis is to test whether:

'Church and community transformation (CCT) leads to sustainable change for individuals, church congregations and communities, evident in improved wellbeing (including economic, personal, social and spiritual wellbeing).'

In the above hypothesis, 'church congregations' refers to those who identify themselves as church members and 'communities' refers to all individuals living in a particular area, whether they are CCT facilitators, church members or non-church members. In order to investigate the impact of CCT, we will also survey non-CCT communities (see section 3.2.2).

Measuring sustainable change can be achieved by the fact that our sample will include communities at different stages of the CCT process, which have been implementing CCT for varying amounts of time. Impacts for communities who have been involved for a (relatively) short time (0–2 years) can be compared to those who have been involved for 5+ years.

Improved wellbeing is measured via a key outcome of life satisfaction, and outcome measures related to economic, personal, social and spiritual domains. Wellbeing is conceived to be multi-faceted and holistic; it is made up of a number of different components and aspects of our lives, all of which are interconnected and interdependent. Section 3.1.2 explains how outcome measures for the specific domains were chosen, and how these were informed by Tearfund's Light Wheel, which visualises nine different components of wellbeing. Given the multiple research questions, and the desire to explore findings by country, it was imperative to select a 'key' outcome measure to focus on when answering our research questions. Section 3.1.1 explains why life satisfaction is chosen as the key outcome measure.

2.2 Research questions

The main hypothesis is split into six research questions:

- *Question 1:* Do people in CCT communities experience improved wellbeing?

- *Question 2:* Do churches that have been engaged in CCT for a longer period of time have improved wellbeing in their community?

- *Question 3a:* Do individuals who have been involved with CCT for a longer period of time experience improved wellbeing?

- *Question 3b:* Do individuals who take part in CCT more regularly experience improved wellbeing?

- *Question 4:* Is the improved wellbeing created by CCT processes first experienced by facilitators themselves, and then spread into the church congregation? From there, does it spread into the wider community?[11]

- *Question 5:* What is the overall social value of CCT processes?

In the above questions, 'improved wellbeing' refers to the variety of changes in people's wellbeing that we have considered. First, research questions are answered with regards to our key outcome measure: life satisfaction. Then, research questions 1 to 3 are considered in the context of the four countries individually (using life satisfaction), and are also considered with regards to our other outcome domains: economic, personal, social and spiritual. Particular attention is given to the economic domain.

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[11] These are the assumptions set out in Tearfund's theory of change for CCT: Tearfund (2022).

3.   Methodology

3.1 Measuring the outcomes

3.1.1 Life satisfaction as a key outcome for wellbeing

There are three standard approaches to measure subjective wellbeing (evaluative, experience and eudaemonic)[12] and the UK Office for National Statistics (ONS) recommends four standard questions (capturing life satisfaction, happiness, anxiety and worthwhileness)[13] for measuring this.

The experience approach captures positive and negative emotions at any given moment. The happiness and anxiety questions utilise this approach, with the timeframe of 'yesterday'. The eudaemonic approach is based on the theory that people have underlying psychological needs for lives to have meaning, essentially capturing whether someone feels part of something bigger than themselves. The ONS worthwhileness question utilises this approach. The evaluative approach asks individuals to reflect on their life and make a cognitive assessment of how their life is overall, or specific aspects of their life such as their health, job and relationships.[14] The ONS life satisfaction question utilises this approach, asking the question:

*'Overall, how satisfied are you with your life nowadays?' [*on a scale of 0 (not at all) to 10 (completely)*]*[15]

This evaluative approach to measuring wellbeing has been the most prevalent in UK and international surveys. Of the four ONS wellbeing questions, the life satisfaction question (related to the evaluative approach) is more widely used internationally, including in the World Values Survey.[16] Therefore, life satisfaction is considered an appropriate measure of overall wellbeing for this study and so is used as our key outcome measure in the analysis. This allows us to answer each research question in reference to this singular measure first, before looking at wider aspects of wellbeing and holistic change.

In addition, life satisfaction is the outcome chosen to represent wellbeing in the UK government's WELLBY methodology; the method used to convert wellbeing into a monetary value[17] (section 5.2).

3.1.2 Measuring economic, personal, social and spiritual domains

The economic, personal, social and spiritual domains were specified by Tearfund and informed by Tearfund's own tool for measuring wellbeing change – the Light Wheel.[18] Developed from internal evaluations, evidence and published research, including work from the University of Bath, the Light

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[12] Tinkler and Hicks (2011).

[13] Office for National Statistics (2018a).

[14] Office for National Statistics (2018b).

[15] For ease of understanding and translation, the word 'nowadays' was removed from this question for our study.

[16] World Values Survey Association (2020).

[17] HM Treasury (2021).

[18] Tearfund (2016).

Wheel visualises how nine different components (or 'spokes') – a mix of economic, personal, social and spiritual factors – 'add up to' holistic wellbeing (image 1).

Image 1: Tearfund's Light Wheel

The Light Wheel © Tearfund 2013, 2021

The four domains were matched to seven of the nine spokes of the Light Wheel, those which are mostly closely aligned with the aims and outcomes of CCT processes (see table 1).

Table 1: Outcome areas matched to Light Wheel indicators

Outcome area	Tearfund Light Wheel 'spokes', and sections of the survey	Topics covered by questions	No. of outcome questions
Economic	Material assets & resources	Going without food, medicine or school, investing in assets, past and future earnings	6
Personal	Emotional & mental wellbeing	Life satisfaction,[19] general outlook on the future – in one year and in five years' time (3)	9
	Capabilities	Creating change in own life, resilience (2)	
	Personal relationships	Levels of trust (local and generally), feeling valued, satisfaction with close relationships (4)	
Social	Social connections	Working on shared projects, support from others, feeling like you belong (3)	6
	Participation & influence	Participating in decisions for the household, raising issues to decision-makers, influencing decisions in the community (3)	
Spiritual	Living faith	Relying on faith for direction in life, helping others	2

A number of suitable questions were chosen to best capture each spoke, resulting in a total of 22 outcome questions (in addition to the life satisfaction question). As far as possible, the questions used have come from validated question sources including the World Values Survey[20] and the International Social Survey Programme[21] to maximise the possibility of comparisons to other data sources. Working

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[19] Life satisfaction is considered to come within the 'emotional & mental wellbeing' spoke; however, since it is our key outcome it is not included in the count of 22.

[20] World Values Survey Association (2020).

[21] Leibniz Institute for the Social Sciences (2023).

with Tearfund's UK and country teams, some of the language was simplified to increase understanding across different cultures in the context of the African continent and to ease translation.[22] The number of outcome questions chosen was dependent on the complexity of the topic, which is why each of the four areas have a different number of corresponding outcome questions. The full survey can be seen in appendix 11.

3.2 Research design

3.2.1 Establishing comparison groups (non-participants and 'control' communities)

For this type of quantitative analysis it is vital to have a comparison group who have not received the intervention. We have two comparison groups in our research design.

The first are those within 'CCT communities' who do not participate in the process. Comparisons with this group are key to exploring potential spillover effects from CCT; effects on people who do not participate and thus do not benefit directly but nonetheless are part of a CCT community and benefit indirectly.

The second group are those from communities that are not taking part in CCT – 'control' communities or non-CCT communities. This group allows us to compare with those whose churches/communities have not been exposed to CCT at all. As far as possible, control communities should be similar to the communities who have experienced the intervention.

3.2.2 Sampling techniques

The aim was to achieve a large sample of approximately 2,000–2,250 observations in each country (8,000–9,000 in total) including both the comparison groups above.

Sampling of CCT communities

Most of the sample came from 'CCT communities': communities in which the local church is engaging in CCT (therefore one church implementing CCT equals one CCT community). The initial sampling frame consisted of the full list of churches implementing CCT, whose number ranged between 97 (Sierra Leone) and 1,217 (Rwanda).[23] Some geographical and practical restrictions had to be considered, which meant a handful of CCT communities on the full list could not take part.[24] Therefore, a *random sampling* technique was used to identify 50 CCT communities in each country from those practically accessible. The random sample was checked against two criteria: a) that each country's sample represented the country's full picture in terms of the spread across local partners, districts, how far through the CCT process the churches are (CCT stage), and how long the churches have been

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[22] For example, removal of the word 'nowadays' in the life satisfaction question.

[23] These do not match the number of communities implementing CCT for the social value calculation in appendix 8 because the information was captured at different points in the year.

[24] For example, churches in Falaba district in Sierra Leone had to be excluded due to very poor road connections, and churches in the Southern and Southern Highlands Zones of Tanzania because they are very remote and take a very long time to travel to.

engaging in CCT (CCT maturity), and b) that there is sufficient spread across CCT maturity (in order to compare between groups and answer research question 2). The random sample drawn (seen in table 2a) satisfied both these criteria.[25]

Table 2a: The sample aim – CCT communities

	CCT communities[26]		Random sample taken	
Stage of CCT that the church and its community have reached	n	%	n	%
Stage 1 - Church awakening	349	17%	44	22%
Stage 2 - Church and community description	178	8%	31	16%
Stage 3 - Information gathering	414	20%	38	19%
Stages 4 & 5 - Information analysis and decision-making	1,107	52%	81	41%
Going through the process again	64	3%	6	3%
Total	**2,112**		**200**	
CCT maturity	n	%	n	%
0–2 years	551	26%	54	27%
3–5 years	1,268	60%	103	52%
5+ years	293	14%	43	22%
Total	**2,112**		**200**	

In a practical sense, the CCT process from stage 1 to 5 is continuous. Stages 1 to 3 are relatively easy to distinguish, but stages 4 and 5 are often intertwined in terms of their implementation. Therefore, after data collection, the decision was made to merge these together as one stage. A small proportion of

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[25] With a large sample size and natural spread, the criteria was satisfied on the first draw. Had the criteria not been satisfied, a new random sample would have been drawn until the criteria were sufficiently satisfied.

[26] CCT communities in table 2a include only those that were geographically and practically accessible.

CCT communities are going through the process again,[27] and so a small number of these are included in the sample. The achieved sample of communities can be seen in section 7.1.1.

Sampling of control communities

As far as possible, control communities should be similar to the communities who have experienced the intervention. For ethical and practical reasons it would have been inappropriate to enter communities where there was no connection. Therefore, control communities are those in which the local church has not yet begun CCT but it is planned they will do so in the future. This ensures they are relatively similar (they have been identified through the same Tearfund process) and there are existing connections with the local churches who assist with mobilising respondents (more in section 3.7). The biggest threat to robust methodology here is selection bias; if CCT communities are generally more engaged and better off to start with, any differences we observe could be down to this and not down to CCT at all. We consider this further in section 6 (limitations), where we conclude that while some bias may still exist, the threat is small because of how communities are selected to do CCT.

Sampling within communities

As far as possible, those sampled within communities should represent their wider community; therefore, within each community a rough stratified sampling technique was used. In all communities the stratification was based on age and gender. Additionally, in CCT communities it was based on whether the individuals were church members or not, their level of involvement in CCT, and for those involved, the CCT activities they take part in (aiming for a mix from each of the categories, with no one group overly represented, eg avoiding sampling only women involved in one specific activity that runs on a certain day).

Again the biggest threat to robust methodology here is selection bias, from two potential sources: a) the CCT facilitator could specifically select survey respondents they expect will be positive about CCT, and b) as those who participate in CCT (or participate more frequently) are making a conscious choice to do so, there may be unobservable characteristics (eg personality traits) that influence one's propensity to 'select in' to the process and that also influence outcomes. We consider this further in section 6 (limitations), where we conclude the first potential source of selection bias is mitigated as far as possible (through our considered mobilisation strategy and stratified sampling), while the second source (much more difficult to mitigate in such studies) still exists.

In 'control' communities stratification was based on age and gender. In total we aimed to collect 500 responses per country from control communities. Country teams had relative freedom in the number of control communities visited in order to achieve this sample.

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[27] This may be to allow additional people (eg people who have joined the church or moved into the community since CCT was first initiated) to engage fully with the CCT process, or to allow communities to continue to reflect on their issues and respond to them.

The overall sample aim

The sample aim can be seen here in table 2b and the achieved sample can be seen in section 7.1.1.

Table 2b: The sample aim – observations

	n per country	n overall sample (all 4 countries)
CCT facilitators	50	200
CCT communities	50	200
People involved in CCT per CCT community (including facilitators)	30	-
People not involved in CCT per CCT community (optional)	5	-
Total CCT community respondents	1,500–1,750	6,000–7,000
Non-CCT communities	5	20
Respondents per non-CCT community	100	-
Total non-CCT (control) community respondents	500	2,000
Total respondents	**2,000–2,250**	**8,000–9,000**

3.2.3 CCT facilitator information

Facilitators are key for the implementation of CCT processes and some of the research questions focus on this group in particular. They were asked questions relating to the church as a whole: whether church attendance has changed recently, whether giving has changed recently, what assets have been built as a result of CCT, any external shocks to the community and information about other organisations working in the community. Answers to these questions will help to put any results into context.

3.2.4 Establishing level of involvement

The research questions require comparisons between those in CCT communities who are church members and those who are not, those involved in CCT activities and those not, how long they have

been involved and how frequently they take part. See how these were asked in the survey in appendix 11.

3.2.5 Demographics

Demographics are statistics that describe a population or sample; they describe the observable characteristics of people.[28] In any statistical study it is important to collect this information from participants. First, to understand the makeup of our sample, ensure it is appropriately representing the target population, and also to ensure there is not a systematic difference between our intervention and comparison population (which could bias any results). Second, these characteristics can be accounted for when we analyse the impact of the intervention on wellbeing. For example, having employment might influence someone's wellbeing compared to someone who has no employment. Our analysis, which utilises multiple linear regression (more in section 4), controls for the influence of these characteristics. The full set of questions can be seen in appendix 11.

3.3 Ethics and safeguarding

The study was informed by Tearfund's guidance on research ethics.[29] Enumerators received training on safeguarding, basic principles of inclusion, and how to ask for and record informed consent. The informed consent procedure was based on a participant information sheet that provided details about the purpose of the study, how the data would be stored and used, and the participants' rights. Enumerators read this sheet to participants as a group, and then asked each participant individually for their consent to proceed. Copies of the participant information sheet (appendix 2), which had been translated into relevant local languages, were given to the church leader in each community for them to display in the church building. The sheet included contact details of Tearfund and the partner in case of any feedback from participants.

Particular care was taken to work with control communities in an ethical manner. All control communities invited to take part in the study will be offered the opportunity to start the CCT process within two years of taking part in the study.

3.4 Translation

In order to not exclude potential participants, the survey and participation information sheet were translated into five local languages: Kinyarwanda (Rwanda), Swahili (Tanzania), Krio (Sierra Leone), Ndebele and Shona (Zimbabwe). This was first done by professional translators in each country and refined by Tearfund staff, partner staff and enumerators during training. Krio is not widely used in written form, so this translation was agreed and recorded on audio to ensure consistency between enumerators.

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[28] Observable in terms of being able to ask survey questions about them.
[29] Daehnhardt and Bollaert (2021).

3.5 Data collection

Data collection took place between July and October 2022 in the four different countries. The staggered collection periods enabled the research team to focus on one country at a time. Data was collected using the Progressive Web App 'Impact'.[30] This software platform is able to collect data offline, store multiple responses locally on a device and then upload all responses once a stable internet connection is established. A hand–held tablet was distributed to each enumerator for data collection. The surveys were conducted through interviews, between one enumerator and one participant, away from other participants. Individual interviews took approximately 15 minutes.

3.6 Recruiting and training enumerators

In each country approximately 20 enumerators were trained over two days, followed by two days of data collection in practice communities.[31] Tearfund country staff from Rwanda, Tanzania and Sierra Leone attended the first enumerator training in Zimbabwe. This ensured teams leading the research process in each country had experience of the logistics involved in data collection and adopted a consistent approach.

3.7 Mobilisation

It was vital to work through local partners when mobilising, or bringing together, participants to take part in the survey. Prior to data collection, Tearfund's partners worked with each CCT facilitator (in the case of CCT communities) or church leader (in the case of non-CCT communities) to invite a specified number of people to participate and arrange for them to gather on the day of the enumerators' visit. Local teams were instructed that mobilised participants should include people of different ages, a mix of men and women, and a mix of members of the church and non-members. In CCT communities it was also specified that those who were mobilised should be taking part in a range of CCT activities. Financial incentives were not offered to those who took part but this did not prove to be a barrier to participation in the survey, even in non-CCT communities where Tearfund is not yet working.

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[30] https://app.impactreporting.co.uk/

[31] Teams were confident in the quality of data from practice communities. Some data cleaning was required, but there was no concern over the quality so this data was included in the full sample.

4.   Analysis technique

4.1 Multiple linear regression analysis

Comparisons between groups and looking at descriptive statistics[32] (in section 7.1) can show how wellbeing outcomes vary for different groups, but this does not account for the multiple other factors that might influence the lives of people and their wellbeing outcomes – factors that have nothing to do with CCT. In order to better understand the impact of CCT, we use a statistical technique called 'multiple linear regression analysis'.

Multiple linear regression analysis identifies how a difference in one factor or 'variable' (eg involvement in CCT) influences another 'variable' or outcome (eg life satisfaction), while taking into account influences from elsewhere as well. A regression model can simultaneously estimate the relationship between different 'variables'. The 'explanatory variables' include the treatment we are interested in, in this case involvement with CCT, and a set of 'control variables' or factors that are likely to influence the outcomes we are interested in but have nothing to do with CCT, for example age, marital status or employment. A regression model therefore isolates and estimates the relationship between involvement with CCT and an outcome of interest. This relationship is expressed as a 'coefficient'.

Conclusions can only be drawn from multiple regression analysis if we are confident our coefficient estimates are robust (particularly when attaching a monetary value as we do in section 8).[33] Our analysis utilises cross-sectional data (observing many individuals at once). Other research methods[34] or estimation techniques[35] would have higher confidence in robust estimates of causation but these were not possible, given our research environment, due to practical and ethical considerations (in fact, they would rarely be possible in such an environment).

Confidence in robust estimates from cross-sectional regressions can be higher in certain situations, including when the causal effect is backed up with theories or evidence from wider social science (and this holds across regions) and data is drawn from a large sample size and from across regions, countries and time.[36] Tearfund's theory of change for CCT focuses on how CCT improves multiple aspects of people's lives, backed up by qualitative studies.[37] Moreover, there is strong causal evidence of the link between these aspects of people's lives and their wellbeing.[38] Our data is a large sample across regions and countries, although it was all collected around the same time. Overall, we can therefore be relatively confident in our coefficient estimates but we report them as differences in

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[32] Statistics that quantitatively describe or summarise a dataset, or sub sample within a dataset.
[33] HM Treasury (2021). See box 6.
[34] Such as (well designed) randomised control trials or naturally occurring randomisation (of an intervention).
[35] Such as Difference-in-Differences, Regression Discontinuity, Instrumental Variable estimation, exclusion restriction estimation.
[36] HM Treasury (2021). See box 6.
[37] Tearfund (2022).
[38] Tearfund (2021).

outcome levels associated with CCT participation and avoid direct statements of cause and effect. More details of multiple linear regression, including necessary assumptions about the data, are explained in appendix 3.

4.1.1 Interpreting regression coefficients

The coefficients of a linear regression with a continuous dependent variable[39] can be straightforwardly interpreted as higher or lower value of the outcome (dependent) variable associated with a change of one unit in the explanatory variable. Questions answered on a numeric scale are treated as continuous,[40] so our regression coefficients when the outcome variable is life satisfaction are interpreted in this way. When life satisfaction is the outcome variable, a coefficient of 0.5 on a categorical explanatory variable[41] (eg being in employment) indicates that being in employment is associated with 0.5 higher life satisfaction.

When the outcome variable is a binary outcome[42] (eg yes/no), linear regression techniques are still appropriate and easier to interpret than logit or probit regression models.[43] The coefficients of a linear regression with a binary outcome variable can be straightforwardly interpreted as higher or lower likelihood to have a positive value of the outcome variable (and one can also multiply the coefficient by 100 to express it in percentage points). Many of our other outcome questions are answered on a four- or five-point scale (eg strongly disagree to strongly agree). These are converted to binary outcomes in order to apply regression techniques, and for ease of understanding of descriptive statistics.[44] When the outcome variable is binary, such as 'belonging to the community',[45] a coefficient of -0.2 on a categorical explanatory variable (eg having a debilitating disability) indicates those with a debilitating disability have a 20 percentage points lower likelihood of feeling like they belong to the community.

4.2 Control variables

Control variables are other factors, such as age, gender, employment or general poverty levels, which may influence the outcomes we are interested in (eg wellbeing) but have nothing to do with the CCT

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[39] A continuous variable is one that can take a value equal to any real number within some interval.

[40] A question answered on a scale of 0 to 10 or 0 to 5 is not strictly speaking continuous, as the answers take a limited number of values. However, studies have shown that it is 'reasonable in most research contexts' to assume cardinality of subjective wellbeing measures, and treat them as continuous. See Kristoffersen (2017).

[41] A categorical variable is one that can take a fixed and limited number of predetermined values (also called categories). These categories may or may not have any quantitative/numeric meaning.

[42] A binary variable is one that can only take two possible values.

[43] These are modifications to the linear regression model that are specifically tailored to model binary outcome variables and can do so more precisely. For example, the predicted likelihood to have a positive outcome in these models will always lie between 0 and 1, whereas in a standard linear regression it can fall outside these bounds.

[44] Statistics that quantitatively describe or summarise a dataset. They may be the whole sample or subsections of the sample.

[45] In full this question reads: Do you agree or disagree with the following statement? 'I feel like I belong to this community.' [Strongly disagree, disagree, neither agree or disagree, agree, strongly agree.] See appendix 11 for other questions in full.

intervention. Controlling for various factors in our analysis allows us to get closer to isolating the impact of CCT.

The biggest threat to robust methodology here is omitted variable bias. It is never feasible to include everything that might influence the outcome we are interested in; we need to keep the survey length manageable and some things are simply not observable, like personality type. Ideally we would control for some community-level information, which would capture geographical or economic differences between communities. Information was collected about shocks in the community, and whether other external organisations are facilitating similar community development work. However, these were captured at the CCT facilitator level, not community level.

Overall, it was deemed that including the main standard determinants of wellbeing (measured by life satisfaction) as set out in HM Treasury's report on valuation techniques for social cost-benefit analysis (2011)[46] were sufficient control variables. We have controlled for age, gender, marital status, religion, characteristic of household head, number of dependents in household, number of people in household, education level, employment status and disability. The full list of control variables can be seen in appendix 6, along with the coefficients from the first regressions in section 7.2.1 (models 1 and 2 in table 12). Nonetheless, omitted variable bias may still exist, which we consider in limitations (section 6).

4.2.1 Socio-economics as a control variable

An important demographic control known to influence wellbeing measures is socio-economics, or level of affluence or deprivation. There is not a standard way of asking this in the African context as there is in the UK.[47] The closest measure we have in the survey is food poverty, which was originally considered one of the economic outcomes of CCT. It is not an ideal measure of socio-economics but considering the multi-country (and potentially multi-region) application and the level of need in target populations, food poverty is the most suitable proxy of socio-economics.

We observe that 19 per cent of people in control communities often go without food, whereas in CCT communities this is only eight per cent (table 10, section 7.1.6). This could imply that people in CCT communities are generally better off than the control communities and any observable impact may be due to socio-economics. Or, it could imply that CCT is effective at reducing the need to go without food. Indeed, within CCT communities seven per cent of those involved with CCT often go without food, whereas for those who are not involved in CCT it is 14 per cent (not shown in table). Therefore, being involved in CCT is associated with lower food poverty, but we cannot be sure if this is because of CCT. We therefore consider how to treat our food poverty measure and there is a trade-off.

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[46] See Fujiwara and Campbell (2011), p 41 – Demographics.

[47] Measured in the UK by National Statistics Socio-economic classification (NS-SEC) or Index of Multiple Deprivation (IMD).

One option would be that we treat food poverty only as an outcome and socio-economics are not controlled for in any way. This would mean that any way in which socio-economics (affluence, deprivation or poverty) influences our outcome measures is not captured. Indeed, there is a positive association between never going without food and our key wellbeing outcome; for those who never go without food, average life satisfaction is 6.3, for those who often go without food, average life satisfaction is 4.0. This relationship between food poverty and wellbeing would not be accounted for and so will be picked up by our estimates for other explanatory factors (including involvement in CCT). Therefore, treating food poverty only as an outcome means a) we would exclude an important control variable, and b) our estimates of the impact of CCT are likely to be biased upwards as they also capture the influence of socio-economics.

On the other hand, food poverty as a proxy for socio-economics could be treated as an additional control variable. This would mean that any way in which socio-economics influences our outcome measures is captured. On the downside, the mechanism in which being involved in CCT influences food poverty, which in turn influences other outcomes, will not be captured by our estimates of CCT. All this will be captured by our food poverty control variable, and not by our CCT variable. Therefore, treating food poverty as additional control means a) we would include an important control variable, and b) our estimates of the impact of CCT are likely to be biased downwards, as the influence of socio-economics is captured elsewhere.

The first regression model presented[48] was run with and without food poverty as an additional control. When food poverty is included, it has the intuitively expected effect on life satisfaction; all coefficients are significant, and they show that going without food less regularly is associated with higher life satisfaction (appendix 6). When it is included as a control, coefficients on other explanatory variables are stable,[49] the coefficient on being in a CCT community is reduced,[50] and the fit of the model is improved (marginally higher R-squared).[51] Therefore, food poverty does explain some of the differences we see in life satisfaction and its inclusion improves our model.

On balance it was decided to include food poverty as an additional control; we may have a lower estimate of the impact of CCT but we do not risk overclaiming CCT's impact by also including within it the difference in wellbeing that is down to socio-economics. Therefore, food poverty is included as an additional control in all regressions, except when food poverty itself is the outcome variable (within the economic domain).[52] We still consider food poverty as an economic outcome, but for these models, the downside of not controlling for socio-economics (explained above) is present.

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[48] Model 1, table 12, section 7.2.1.

[49] They have similar magnitude and significance with or without it as a control.

[50] 1.185 compared to 1.348 without food poverty as a control.

[51] Without food poverty as a control, the adjusted R-squared is 0.149. Including this as a control, it is 0.198 and other coefficients remain stable, suggesting its inclusion helps to explain more of the variation in life satisfaction.

[52] A variable cannot be an explanatory variable *and* the dependent variable; as the explanatory variable it would perfectly predict the dependent variable (known as perfect multicollinearity) and would therefore drop out of the model.

4.3 Interaction terms

In many of the regressions presented, we utilise interaction terms. In regression analysis, an interaction term is when two explanatory variables are multiplied together and this 'interaction' is used as an additional explanatory variable. (See appendix 3 for a mathematical illustration.) These interactions allow us to estimate the relationship between an explanatory variable and our dependent variable for different subgroups in our sample. This is often used, for example, to observe how the impact of an intervention differs for men and women.

In our case, having previously explored how being in a CCT community influences an outcome (eg life satisfaction), we can now look into how this differs for different subgroups separately – for example, for those who participate in CCT and those who do not.

5.   Social value

5.1 What is social value?

Social value is the quantification of the relative importance that people place on the changes they experience in their lives.[53] It is based on the principles and ideas of welfare economics and concerns overall social welfare efficiency, not simply economic market efficiency.[54] In other words, it captures welfare costs or benefits for which there is no market price. For example, the social benefit we experience from increased sense of self-worth, on top of the financial benefit of receiving a pay rise in our job; or the social cost we experience from pollution, on top of the financial cost of a new infrastructure project.

Cost-benefit analysis (CBA) compares the costs and benefits of an intervention, where both are expressed in monetary units. Traditionally these only included financial costs and benefits, and the resulting net benefit or Benefit-Cost Ratio (BCR) were in relation to a company or organisation. However, social cost-benefit analysis extends traditional CBA by also including the non-market benefits and costs mentioned above, and is performed in relation to society as a whole. The resulting social net benefit or Social Benefit-Cost Ratio (Social BCR) therefore indicates whether the programme is worthwhile to society.

5.2 Introducing the WELLBY value

Our social cost-benefit analysis (CBA) is informed by the UK government's guidance on policy appraisal and evaluation (The Green Book)[55]. Although the aim of social CBA is to measure impacts on welfare, or wellbeing, there are some outcomes that are easier than others to monetise. For example, market outcomes such as economic output, tax revenue, or employment are more objectively quantifiable and easier to include in CBA, although they may not be the most important outcomes. The recent Green Book guidance aims to address this and provides a methodology to include wellbeing effectives in social CBA.[56] Behind this approach is a newly-defined, standardised unit of measurement known as the WELLBY (wellbeing-adjusted life year). It is based on the personal wellbeing measure of life satisfaction, standardised by the Office for National Statistics and collected using the following question:

'Overall, how satisfied are you with your life nowadays?', with possible answers on a scale of 0 (not at all) to 10 (completely).

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[53] Social Value UK (2023).
[54] HM Treasury (2022).
[55] HM Treasury (2022).
[56] HM Treasury (2021).

One WELLBY is defined as a change of one point on this scale, caused by the intervention subject to assessment, affecting one person over a period of one year. The latest UK government guidance suggests that individual wellbeing effects should be included as non-market value in social cost-benefit analysis at a recommended valuation rate of £13,000 per WELLBY. This figure is the mid-point between two values using different methods (£10,000 is based on converting a Quality Adjusted Life Year (QALY) and £16,000 is based on estimating the effect of changes in income on life satisfaction). The guidance states '*The resulting change in life satisfaction can be converted to a monetary value by multiplying by £13,000*.'[57]

Using multiple linear regression analysis, one can estimate the average impact of an intervention on the life satisfaction of its target population, ie the resulting change in life satisfaction. Therefore, our coefficient estimates obtained can be multiplied by £13,000 to obtain a monetary value per person per year in the UK. Applying this methodology has been the bread and butter of State of Life's work for the past few years.

5.3 Applying the WELLBY in our four countries[58]

The WELLBY research is grounded in the UK setting and no such research exists in the African continent. Exactly replicating the WELLBY research in the necessary countries would require large-scale studies of nationally representative data sets.

In the absence of this we must decide the best method to convert a UK WELLBY figure to the context in our African countries. GDP per capita is much greater in the UK than in our four countries – between 22 times greater (Zimbabwe) and 109 times greater (Sierra Leone).[59] Converting the value of £13,000 using exchange rates would likely overstate the monetary value in Africa. Given that the valuation rate of £13,000 per WELLBY in the UK wellbeing supplementary guidance is derived using methods that are sensitive to the target population's income levels, we use average income to scale the WELLBY figure proportionally to obtain a figure appropriate for our four countries.[60]

For this proportional scaling we want our data on average income to reflect typical individuals in the UK and in our four countries. Although reliable sources of mean income are available (eg through the International Labour Organisation),[61] median income conveys far better the material wellbeing of the typical individual in a country. Note that we are using personal income rather than household income in the calculations below.

There is no one clear source of median income data across countries. The Centre for Global Development's calculation of median income points out its absence in the World Bank's global poverty

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[57] HM Treasury (2021). See box 7.

[58] Calculations for median income can be seen here.

[59] IMF: www.imf.org/external/datamapper/NGDPDPC@WEO/OEMDC/ADVEC/WEOWORLD/TZA/GBR

[60] This means we are assuming that the relationship between income and wellbeing is similar in our four countries to in the UK.

[61] Average monthly earnings can be found at: www.ilo.org/shinyapps/bulkexplorer6/

database.[62] This, and other sources, use data from different years and different parameters such as daily rather than annual, and also reported figures for the UK differ from the ONS reported figure.[63]

It is the ratio rather than amount that is important for our calculation. Therefore, for the three sources deemed most reliable we calculate the ratio between median personal income in the UK and other countries (see detail in appendix 4). The summary of calculated ratios are reported in table 3. From the three methods, Sierra Leone had the lowest average ratio at 0.0514 and Zimbabwe had the highest average ratio at 0.0682.

Reporting and using a different WELLBY value for each country was considered, but given the assumptions made above and the imperfect data on median income in our four countries, it was felt that reporting different values would give the impression of falsely precise and comparable figures. We do not think this would be sufficient evidence of differential social value per WELLBY in the four countries. Given that the minimum and maximum ratios are fairly similar, an average ratio is calculated and used to compute an overall WELLBY value that could be applied in all the countries.

Overall, our four countries have a median income of approximately 5.77 per cent of the reported value for the UK (appendix 4 and table 3). This ratio is then used to convert £13,000 into a WELLBY value that is appropriate in our countries (£750). It is then converted to US$ (using yearly average exchange rates to year end 2021, and rounded)[64] to obtain our country-appropriate WELLBY value (for moving one point on the life satisfaction scale, for one year): $1,033.

Table 3: Calculation of WELLBY value for use in our four countries[65]

	Lower estimate (min ratio)	Mid estimate (mean ratio)	Upper estimate (max ratio)
Ratio	0.0514	**0.0577**	0.0682
Converted £ WELLBY value (£13,000*ratio)	£669	**£750**	£887
$ WELLBY value (US$ = £*1.37753)	$921	**$1,033**	$1,222

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[62] Diofasi and Birdsall (2016).

[63] £25,971, Office for National Statistics (2022).

[64] Yearly average exchange rates to year end 2021 (£1 = $1.37753).

[65] See appendix 4 for calculation and sources.

5.4 Calculating the social cost-benefit

For various figures throughout this methodology a lower and upper estimate may be presented. Presenting ranges in all measurements would be unmanageable, so these ranges are applied in the most appropriate places, ie where there is less certainty.

Social value calculations using the WELLBY give us a monetary value per year. Since data collection took place in mid 2022, calculations for costs are reported for the calendar year 2022 to match this.

Defining the scope of this social CBA

After carefully considering the theory of change behind the CCT process, we have identified two crucial components of the social costs and benefits of CCT:

Direct: represents only the resources spent by Tearfund and the local partners and churches directly on organising the main CCT activities at the church, as well as the benefits to the wellbeing of direct participants of CCT activities only.

Indirect/wider: represents the resources spent on wider activities (such as local infrastructure projects) that were realised at the initiative of the community after its involvement in CCT, as well as the benefits to the wellbeing of all members of the community.

Therefore, there are multiple potential perspectives on the scope of this analysis (that is, what to include in the social CBA modelling and what to leave out):

- Approach A – include direct benefits and costs only
- Approach B – include both direct and indirect costs and benefits
- Other approaches (eg include both direct and indirect costs, but only direct benefits)

Step 1: Estimating individual–level change

Direct benefit

The regression model coefficient on wellbeing of being a CCT participant compared to being in a control (non-CCT) community will be used as the average **individual-level change in life satisfaction** estimate. The coefficient on life satisfaction can then be converted to a monetary value, multiplying the coefficient by the WELLBY valuation rate of $1,033 (estimated above) to obtain a monetary value per participant per year.

Indirect benefit

The average **individual-level change in life satisfaction** estimate is the coefficient on wellbeing of being a non-CCT-participant in a CCT community compared to being in a control community (for all

other members of the CCT community that did not participate in CCT directly). Just as for the direct benefit above, it will be monetised by multiplying the coefficient by the WELLBY valuation rate of $1,033 to obtain a monetary value per participant per year.

Step 2: Estimating community-level change (benefits)

To convert these individual-level changes into community-level changes, we estimate how many people take part in CCT activities, and (in the case of indirect benefits) the approximate size of the community that CCT is working in. This information was collected from CCT facilitators in a separate survey aiming for a response from all CCT communities included in the study (see appendix 12).

Multiplying these numbers of people with the values per individual identified above, and then adding together the direct and indirect benefits if approach B is chosen, gives us an estimate of the benefit of CCT per community per year.

Direct benefit

The monetary value per participant per year can be multiplied by the mean number of people participating per community. This gives a direct social benefit of CCT per community per year. For this calculation we can be more confident that the impact can be attributed to CCT. If we find evidence suggesting benefits to the wider community, only including direct benefits is likely to be an underestimate because we are only capturing benefits to those who participate.

Indirect benefit

We can estimate the number of people in a community who do not participate but could be affected by the wider impacts of CCT on the community. This is achieved by taking the mean size of a CCT community minus the number of those who participate. These wider social benefits are likely to be an overestimate, since it is unlikely the wider benefits spread to the whole of the local community, but they nevertheless provide useful indicative insight into the wider benefits of CCT.

Step 3: Estimating average inputs per community (costs)

On the other side of the social value equation are the inputs into CCT.

Direct costs

First, an estimate of the financial cost of implementation (to Tearfund and partners) per community per year (2022) is collected through Tearfund and partners in each country. Second, we collect information about volunteer time (CCT facilitators and other volunteers). This is expressed in terms of hours volunteered in a typical month and converted to annual figures. The number of hours volunteered is multiplied by an estimate of the hourly monetary wage rate (averaged across the

countries), to produce an estimate of the cost of the additional labour input.[66] These two elements are considered direct costs of implementing CCT activities.

Indirect costs (or intermediate outputs)

These are the additional resources that the communities look beyond Tearfund for resourcing and secure themselves for CCT initiatives; most notably those that involve building or improving specific community assets (eg building a school, clinic, road etc). (Refer to section 1.1 for the distinction between CCT activities and initiatives.) We are able to capture and report on the mobilised resources. These are collected through the CCT facilitator survey (questions also shown in appendix 12). They are considered as: a) monetary contributions, b) goods, and c) labour mobilised through the church and community, and d) funding that has been mobilised from other sources (eg government, private companies or NGOs other than Tearfund).

Before we proceed, a short discussion is needed on how to treat these mobilised resources and where to include them in our social cost-benefit analysis.

Going back to the Theory of Change and the mechanism in which CCT works as a development process, the direct costs listed above (training the facilitator, their and other volunteers' time etc) are considered inputs. The additional community assets and the resources mobilised to build them can be considered intermediate outputs. The community taking ownership of its development is considered the final outcome, observed through improved indicators (eg better educational attainment, better health, improved income through better access to markets etc). It is beyond the scope of this project to measure and monetise all these indicators. It is assumed that any improvements in these other outcome indicators are at least partly captured by our key outcome used for the social benefit calculation: life satisfaction.

On the one hand, appreciating the explanation above, the community assets built as a result of CCT can be considered an output; Tearfund is not paying for them and without the CCT process the resources may not have been mobilised for this reason. In this perspective mobilised resources should not be captured as costs, but their benefits are partly captured through improved life satisfaction (and especially its indirect component, affecting all members of the community even if they did not directly participate in CCT). Therefore, any Social Benefit-Cost Ratio would likely be an overestimate.

On the other hand, mobilised resources could be considered secondary inputs; without them the improved indicators would likely not be achieved to the same extent. In this situation mobilised resources should be included as costs (alongside the direct costs of CCT activities to Tearfund and partners), but their benefits would only partly be captured through improved life satisfaction

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[66] Even though volunteer work is usually free, it is still a cost because people are spending their time and making an effort to do the work. One can apply the concept of **opportunity cost** from economic theory: the volunteers could have used the time they spent engaged in CCT work to perform some other paid work, or enjoy leisure. If paid work is a plausible alternative, then valuing the volunteering input at an indicative wage rate estimate (also known as the wage replacement approach) is a good approximation of this opportunity cost.

(improved education or access to markets would not be captured). Therefore, any Social Benefit-Cost Ratio would likely be an underestimate.

UK government methodology for cost benefit analysis advises that indirect costs and benefits should be included.[67] We are relatively confident in our method to estimate indirect costs, but are less confident in the wider application of our estimate of indirect benefits. **Therefore, we will focus our calculations on *direct benefits* and consider costs both with and without *indirect costs.***

Step 4: Calculating Net Social Benefit and Social Benefit-Cost Ratio (Social BCR) per community

The difference between the total estimated benefits and costs at community level represents the Net Social Benefit of CCT *per community per year*:

$$\text{Social benefit of CCT} - \text{Cost of implementing CCT} = \text{Net Social Benefit}$$

As an alternative metric, the estimated benefit per community is divided by the total estimated cost per community to give a Social BCR of CCT:

$$\frac{\text{Social benefit of CCT}}{\text{Cost of implementing CCT}} = \text{Social Benefit-Cost Ratio (Social BCR)}$$

The Net Social Benefit and Social Benefit-Cost Ratio show whether the programme being assessed was a worthwhile social investment, compared to the counterfactual (do-minimum) scenario considered as a baseline in the assessment.[68] This is the case when the net benefit is greater than 0, or equivalently the BCR is greater than 1.[69]

Step 5: Sensitivity analysis of Social Benefit-Cost Ratio

There are many parameters that will need to be considered and chosen for calculating this ratio. If applicable, we will consider the ratio if other parameters had been chosen.

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[67] HM Treasury (2022).

[68] In our case, this is the scenario when life in the target communities would go on as usual without any part of the CCT process taking place.

[69] Note that social CBA, and its resulting metrics (Net Social Benefit and Social BCR), can also be used to choose the most socially worthwhile among multiple policy options. In that case, the policy option with the highest positive net benefit (or equivalently the highest BCR above 1) is deemed the most socially worthwhile.

6. Limitations of the study

Limitations are considered here, with recommendations specific to similar studies outlined in appendix 5.

Potential selection bias in selection of first communities to implement CCT

Our control communities should be similar to CCT communities, hence should be at a similar theoretical 'baseline' before the implementation of CCT in the CCT community. Our best choice of control communities were those that have not yet done CCT but it is planned they will take part in the future (section 3.2.2). If there was a consistent and systematic reason certain communities were selected to implement CCT first (therefore giving them a different 'baseline' compared to control communities), our estimates may suffer from selection bias.

Selection of communities to implement CCT is based on three criteria: level of need, level of engagement of church leaders and geographical accessibility. The relative importance of these three factors vary by partner and between countries. We should consider how this criteria may influence the 'baseline' in CCT communities and control communities. Selecting communities based on level of need implies that those selected first (CCT communities) are likely to be at a lower baseline compared to control communities, and hence may downward bias our estimates of the impact of CCT.

The level of engagement of church leaders may reflect the readiness of church members (and perhaps even the wider community) to engage, hence may imply a higher baseline in CCT communities for some social outcomes such as 'working on a shared project'. It is unlikely this is reflected in baseline life satisfaction and other outcomes. On the other hand, church leaders in control communities may in fact have higher willingness to engage; they have given up their time to mobilise the community for this research without yet having experienced the positive impacts of CCT. Bias due to this criterion could be in either a positive or negative direction.

The level of geographic accessibility influenced the selection not only of CCT communities, but also of control communities for this research project. Therefore, this criterion has no systematic effect. To sum up, downward bias on our estimates of the impact of CCT is overall more likely than upward bias.

Potential selection bias in mobilisation of respondents

Those sampled within communities should represent their wider community. Therefore, within each community a rough *stratified sampling* technique was used (section 3.2.2). There are two potential sources of selection bias here. First, there is a risk the CCT facilitator specifically selects survey respondents they expect will be positive about CCT. This bias was reduced through the implementation of a stratified sampling technique and specific mobilisation instructions; partners and CCT facilitators were given parameters to follow in order to achieve the right mix of survey respondents on the day of data collection. In CCT communities the aim was to survey 30 people who participate in CCT (including the facilitator, church members and non-church members) and up to five individuals who do not participate in anything related to CCT. Enumerators were trained on the

stratification. Stratification could not be followed perfectly (for ethical reasons enumerators were also trained to not turn away people who had given up their time). The level of involvement of eventual respondents (14 per cent non-church members, 14 per cent have not heard of CCT and 22 per cent do not participate in CCT activities) is evidence this stratification was largely followed (table 6, section 7.1.3).[70] In addition, non-participants appear more distant from CCT, with 57 per cent reporting they have not heard of CCT. Therefore, we conclude sufficient effort was made to minimise selection bias from this source.

Second, those who participate in CCT (also more frequently or for longer) are making a conscious choice to do so – there may be unobservable characteristics that influence one's propensity to 'select into' a programme or to continue once they are in. Bias caused by the unobservable characteristics that make certain people more likely to select into, or continue on, a programme is more difficult to mitigate in cross-sectional analysis. Other research techniques that could address this bias (such as before and after comparisons) were not feasible, hence we must acknowledge this limitation.

An advantage of multiple research questions (and multiple ways of measuring 'intervention') means that we are not relying on any one comparison, which might suffer from the worst selection bias. For example, our comparison involving maturity of the CCT process in the community (regardless of how long individuals have been involved) eliminates influences of individuals' choices to select in or continue.

Attribution to CCT

There is a challenge of knowing what would have otherwise happened in CCT communities, particularly in terms of mobilised resources for community assets. Resources may have been used for these assets anyway, but our research design could not allow for observing this 'counterfactual'[71] situation. Our survey questions about other development actors were asked only to CCT facilitators. We did not ask these questions in control communities (because there is no CCT facilitator in these communities).

We therefore explore if CCT facilitators answer this question differently according to the presence of other development actors. For three of the four new or improved assets specifically asked about (road, water access and schools), CCT facilitators report investment in these assets at the same rate (no significant difference) whether they report other development actors as present or not. However, CCT facilitators report health clinics at a higher rate (30 per cent compared to eight per cent) when they also report other development actors as present. The presence of other actors is asked directly of CCT facilitators (not externally verified) so there may be bias in stating the presence of other development actors, which we have no way of testing.

We also consider whether other development actors are more likely to be present in CCT communities than control communities. Although we have no survey data on this in control communities,

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[70] For practical reasons, mobilisation of those not involved was considered optional. The stratification was not followed in Rwanda because of this optional nature.

[71] What would have happened otherwise.

Tearfund's stakeholder mapping indicates that many of these communities have other agencies operating in them.

We also consider how respondents report support from agencies. All respondents were asked who cares for the vulnerable, from given options including NGOs (appendix 7). People in CCT communities are more likely than those in control communities to report that NGOs care for the vulnerable (60 per cent compared to 46 per cent, a statistically significant difference). People in CCT communities are more likely to report that all of the given options are more likely to care for the vulnerable. For religious organisations this differential is 19 per cent, for all other actors (private companies, family and friends, government, NGOs and CSOs) the differential is consistently between 10 and 13 per cent. It could be that all potential actors, including the government, have a greater presence in CCT communities, but this is considered unlikely. It is considered more likely that those in CCT communities have greater awareness of who cares for the vulnerable – engagement in advocacy (raising issues to decision- makers and influencing decisions in the community) is higher in CCT communities. Helping others in need is considered an outcome of CCT (spiritual), hence it is unsurprising that people in CCT communities are more likely to report that family and friends support the vulnerable. In summary, increased reporting of support agencies is likely to be down to increased advocacy and awareness, rather than greater presence of agencies themselves.

We consider whether differences in our outcomes could be driven by other actors rather than by CCT. For those who say NGOs care for the vulnerable compared to those who do not, there is a significant difference in their life satisfaction of +0.4. When looking at CCT communities only, this difference is +0.3 and significant. Overall, there is some concern that better outcomes could be a result of other actors, such as other NGOs, but these differences are small compared to the difference between CCT communities and control communities (+1.53[72]) and our eventual regression coefficient (+1.185[73]). Sensitivity testing was done (but not reported here), including whether NGOs care for the vulnerable as an additional control variable, but it does not materially change conclusions. For this research report, therefore, there is limited concern about other development actors influencing outcomes more than CCT does. Exploring the attribution of developmental outcomes to different development actors would involve a complex study.

Potential omitted variable bias

As well as other development actors, outcomes might be affected by other external factors such as environmental shocks or economic policy. Excluding these shocks would be a problem if there were systematic differences between treatment (CCT) and control communities, in which case we could suffer from omitted variable bias. The data we hold on external factors comes from the CCT facilitator survey (section 7.1.5), hence we hold this only for CCT communities and not control communities (due to the lack of an equivalent person to answer on behalf of the community). We therefore have no way

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[72] Table 10, section 7.1.6

[73] Table 12, section 7.2.1

of knowing whether there are systematic differences (in terms of measurable external factors) between CCT communities and control communities.

We can assume these shocks (eg drought) influence large geographical areas (hence CCT communities and control communities) in similar ways, in which case the fact we have not been able to account for these is not a large problem. Furthermore, our proxy for food poverty likely captures influences from external shocks, so our control variables at the individual level (see section 4.2) were considered sufficient.

In non-randomised quantitative research there may always be some form of omitted variable bias (we cannot measure everything). Nonetheless, capturing more community-level data would allow us to test for and, to some extent, rule out systematic differences in external influences between treatment and control communities. This could be considered for similar future studies.

Survey translation

The survey was professionally translated into five different local languages. Necessary steps were taken to ensure translation errors were avoided, such as number coding of the questions and answers.

The research team was aware that translation into different languages may lead to slight inconsistencies in interpretation of questions. It was considered that having many outcome questions could help mitigate the influence of this; if a conclusion is found over multiple outcomes we can be more confident that misinterpretation of translated questions has not biased results. In addition, each training session of enumerators included some time studying and understanding the English language survey, and ensuring a good understanding of each question. Afterwards, time was dedicated to studying local language versions, ensuring that the essence of the question was captured. At this point some minor tweaks and error corrections were made to the professional translation. With these actions in place, the increased accessibility of having the survey in a local language outweighed any potential bias.

Using the WELLBY in Africa

WELLBY research is grounded in the UK setting and as far as we are aware has not been applied to the African continent. The subjective nature of the life satisfaction question may take on a different understanding in rural Africa, although our analysis reveals that various demographics impact life satisfaction in our data in the same way they do in UK data. Those who are female, have a higher level of education, are employed or retired tend to have higher life satisfaction. Having a disability that affects your daily life and living in food poverty are associated with lower life satisfaction (see full regression results in appendix 6). Therefore, we can be confident that life satisfaction is an appropriate measure of overall wellbeing in our context. As explained in section 5.2, our approach of converting the WELLBY value using the ratio between median income in the UK and our four countries is the best option given constraints of available research. It is important to note that this value should be accompanied by the necessary caveats: that it is based on UK research, it assumes the relationship

between income and wellbeing in our four countries is similar to in the UK, and that the monetary value is converted using the best available data on median income.

7. Findings

7.1 Descriptive statistics

7.1.1 The sample of churches and control communities

Overall, the achieved sample (table 4) is approximately in line with the sampling frame (outlined in section 3.2.2). Some planned visits were not able to take place (for example, due to a funeral) and were replaced by visits to other similar CCT communities. This happened only on a handful of occasions, and because of intentionally large sample size, any replacement sites were only a small proportion of the overall sample.

Table 4: The achieved sample – all observations

	Rwanda	Sierra Leone	Tanzania	Zimbabwe	All
CCT communities	52	50	52	47	201
Non-CCT communities	5	5	13	6	29
CCT facilitators[74]	56	67	79	46	248
CCT community respondents, who are not CCT facilitators	1,487	1,758	1,440	1,113	5,798
Total CCT responses	1,543	1,825	1,519	1,159	6,046
Total non-CCT (control) community respondents	474	546	421	326	1,767
Total respondents	**2,017**	**2,371**	**1,940**	**1,485**	**7,813**

Notes: CCT community members are those who are not facilitators. The Tanzania team decided to collect their sample from control communities from more different communities, but fewer observations per community. Rather than surveying 100 responses from five control communities, they aimed for 38 responses from 13 communities.

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[74]During data collection in Zimbabwe (the first country), it became clear that many more people identified themselves as CCT facilitators than we expected. It was concluded that these were likely to be volunteers who were involved in CCT, and felt like they 'facilitated' activities in some way, but were not the trained CCT facilitator. In the subsequent three countries, identifying trained CCT facilitators was done on arrival at the church and it was emphasised that all enumerators must be clear who CCT facilitators were. For the remaining three countries, enumerators were informed and could answer this question on behalf of respondents. The original data from 'CCT facilitators' in Zimbabwe was deemed unreliable and removed from the dataset (201 observations). An enumerator was re-hired at a later date to collect the survey from trained CCT facilitators.

The sample is lower than expected in Zimbabwe. This was mostly due to it being the first country where there were some logistical problems and lessons were learned.[75] Processes that were improved in subsequent countries included identification of CCT facilitators and the mobilisation process.[76] This was partly made up for by a larger sample in Sierra Leone (the last country visited), and overall the sample is only eight per cent lower than we planned for.[77] The sample is still large enough to obtain statistically significant and meaningful results, especially when our sample is merged for all countries. When our sample is split by country, while we might be slightly less likely to observe statistical significance in Zimbabwe, over 1,400 is still a large and solid sample. There is less concern of Sierra Leone being overrepresented, or Zimbabwe being underrepresented, when the sample is merged because 'country' is included as a control variable.

7.1.2 Community-level involvement

Table 5 shows the final sample in CCT communities, broken down by progress through CCT. This is also similar to the sample aim shown in section 3.2.2.

Table 5 shows an uneven spread across CCT stages (the minimum in a category is two per cent and the maximum in a category is 56 per cent), whereas for CCT maturities this is a more even spread (minimum in one category is 23 per cent, maximum is 43 per cent). CCT is a continuous process, so categorising into stages is slightly subjective, whereas the number of years for which a church and community have been engaging in CCT (CCT maturity) is a clearer, more objective distinction. The distinction of CCT maturity is also used more often than CCT stage in other Tearfund regions, which will make it more applicable in future years of the study. With fewer categories of CCT maturity there are also fewer relative comparisons we need to make. For these reasons, CCT maturity will be the main measure indicating community-level progress through the CCT process.

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[75] In addition, some CCT sites were dropped due to politically related inaccessibility, but were replaced with sites of lower CCT maturity and hence lower response turnout. Also, some rural sites were replaced with urban/peri-urban sites where mobilisation was more difficult.
[76] In Zimbabwe 29 responses were removed because they could not be matched to a CCT community (and also one from Rwanda, one from Sierra Leone and four from Tanzania).
[77] (8,500 - 7,813)/8,500 = 8% (8,500 being the midpoint between 8,000 and 9,000; table 2b, section 3.2.2).

Table 5: The achieved sample in CCT communities, by CCT stage and CCT maturity

Stage of CCT that the church and its community have reached	Sampled CCT communities		Sampled individuals	
	n	%	n	%
Stage 1 - Church awakening (1st time)	36	18%	1,065	18%
Stage 2 - Church and community description (1st time)	22	11%	508	8%
Stage 3 - Information gathering (1st time)	33	16%	989	16%
Stage 4 & 5 - Information analysis and decision (1st time)	105	52%	3,360	56%
Going through process again	5	2%	124	2%

CCT maturity	n	%	n	%
0–2 years	45	23%	1,321	23%
3–5 years	89	45%	2,629	43%
5+ years	67	34%	2,096	35%

Total CCT responses	201		6,046	

Notes: Percentages may not add up to 100 per cent due to rounding.

7.1.3 Individual-level involvement

As well as control communities, we want to be able to compare within CCT communities (between those who are and are not involved in CCT). It was an aim of the research design and the sample that we would collect responses from some people not involved in CCT (up to five per community[78]). This was a flexible aim as we knew it could be challenging mobilising those who are not involved. If five per community were reached, this would give us 14 per cent of those in CCT communities not being

[78] Table 2b, section 3.2.2

involved in CCT.[79] Table 6 presents the proportion who are church members, who have heard of CCT and who are involved in CCT, by country and overall.

Table 6: Level of involvement

	Rwanda	Sierra Leone	Tanzania	Zimbabwe	All
Church members in CCT communities (%)	1,387 (95%)	1,333 (83%)	1,210 (87%)	794 (74%)	4,722 (86%)
Non-church members in CCT communities (%)	69 (5%)	276 (17%)	176 (13%)	275 (26%)	796 (14%)
Info missing	31	149	54	44	129

Those *who have heard* of CCT (%)	1,431 (99%)	1,253 (79%)	1,311 (95%)	730 (68%)	4,725 (86%)
Those *who have not heard* of CCT (%)	18 (1%)	329 (21%)	76 (5%)	336 (32%)	759 (14%)
Info missing	38	176	53	47	314

Those *who participate* in CCT activities (%)	1,451 (99%)	1,162 (71%)	1,125 (80%)	586 (55%)	4,324 (78%)
Those *who do not participate* in CCT activities (%)	14 (1%)[80]	466 (29%)	276 (20%)	480 (45%)	1,236 (22%)
Info missing	22	130	39	47	238
Total CCT (non-facilitator) respondents	**1,487**	**1,758**	**1,440**	**1,113**	**5,798**

Notes: Missing responses are included in the table, to show how totals match up to table 4. Some answers are missing because the question was skipped by individuals. In addition, due to survey routing this section was skipped if the enumerator answered that they were in a (non-CCT) control community. Unfortunately, due to enumerator error on some occasions, answers were given indicating individuals were in control communities when in fact they were in CCT communities. In the data-cleaning process this incorrect answer was re-coded according to the name of the community (and cross referenced with date completed, name of enumerator and enumerator's schedule). However, information about the individual's level of involvement with CCT was still missing. These errors were more common in 'practice communities' at the start of data collection in each country, and errors in subsequent communities were minimal.

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[79] 1,000 / 7,000 = 14.28%

[80] The Rwanda country team was less focused on including those who do not participate in CCT, since it was optional in the sampling protocol.

Overall, the proportion who are not involved (*do not participate)* is 22 per cent, more than our (aspirational) aim of 14 per cent. In CCT communities, more people are church members (86 per cent) than participate in CCT activities (78 per cent). We note that these two are closely related.[81] Non-participants are less likely to be church members (61 per cent, table 8). Overall, 14 per cent say they have not heard of CCT. These proportions vary by country; in Rwanda respondents are highly involved with CCT, whereas in Zimbabwe there are many more respondents who are not involved with CCT and are not church members. These will be important considerations when interpreting regression results.

There are two measures of individual involvement we will use in the analysis: how long someone has been involved and how frequently they participate (table 7). For the measure of time involved, this was converted from months to years. For the measure of frequency, these categories are verbatim from survey data.[82]

Table 7: Intensity of involvement, for those who participate

	Rwanda	Sierra Leone	Tanzania	Zimbabwe	All
Time involved					
A year or less	437 (30%)	371 (32%)	490 (44%)	312 (55%)	1,610 (37%)
Between 1 and 3 years	467 (32%)	534 (46%)	511 (46%)	151 (27%)	1,663 (39%)
More than 3 years	544 (38%)	253 (22%)	117 (10%)	105 (18%)	1,019 (24%)
Info missing	3	4	7	18	32

[81] Therefore, they are never included in the same regression, as they would come close to violating the 'no multicollinearity' assumption of linear regressions (appendix 3).

[82] These detailed questions about individual involvement *did not* have survey routing apply, ie they were asked of all individuals in CCT communities regardless of whether they answered 'yes' or 'no' to being involved in CCT activities. This is because being involved or not was asked as part of a matrix question (see full survey in appendix 11) and the software used did not allow for survey routing from matrix questions. For a few individuals, answers to the more detailed questions contradicted answers to the simple 'yes' or 'no' question of involvement. Therefore, answers (to questions I3 to I5, see full survey) have been cleaned to avoid contradiction. Answers to more detailed questions were assumed to be more accurate than the simple 'yes' or 'no' questions.

Frequency of participation					
Less often than every month	49 (3%)	191 (16%)	241 (22%)	113 (20%)	594 (14%)
Once or twice a month	187 (13%)	470 (41%)	349 (31%)	319 (56%)	1,325 (31%)
Once a week if not more	1,214 (84%)	497 (43%)	530 (47%)	138 (24%)	2,379 (55%)
Info missing	1	4	5	16	26
Total	**1,451**	**1,162**	**1,125**	**586**	**4,324**

Notes: Missing responses are included in the table, to show how totals match up to table 6. Answers are missing because the question was skipped by individuals.

For those who do participate in CCT activities, most have been participating a year or less (37 per cent) or between one and three years (39 per cent). There is variation between countries (eg individuals in Rwanda have been involved for longer) but in general there is enough spread across the categories to compare between them in each country. In terms of frequency, most participate once a week or more. There is more variation between countries in terms of how frequently people participate.

Our sample who do not participate in CCT should be representative of the wider community. A pure 'self-selection' strategy to surveying would highly likely result in selection bias. Section 6 on limitations outlines how our stratification strategy aimed to avoid this. Since the majority of non-participants (57 per cent, table 8)[83] have not heard of CCT, we are relatively confident our non-participants do largely represent the wider community, but some selection bias may still be present.

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[83] This does vary by country; in Tanzania only 24 per cent of non-participants have not heard of CCT (insufficient observations from non-participants in Rwanda).

Table 8: Awareness, for those who are in CCT communities but do not participate in CCT activities

	Rwanda	Sierra Leone	Tanzania	Zimbabwe	All
Those *who have heard* of CCT (%)	3	143 (31%)	204 (76%)	167 (36%)	517 (43%)
Those *who have not heard* of CCT (%)	11	311 (69%)	66 (24%)	298 (64%)	686 (57%)
Info missing	0	12	6	15	33

	Rwanda	Sierra Leone	Tanzania	Zimbabwe	All
Church members (%)	10	236 (51%)	243 (89%)	248 (54%)	737 (61%)
Non-church members (%)	4	223 (49%)	31 (11%)	213 (46%)	471 (39%)
Info missing	0	7	2	19	28
People in CCT communities who do not participate	**14**	**466**	**276**	**480**	**1,236**

Notes: Missing responses are included in the table, to show how totals match up to table 6. Percentages are not reported for Rwanda due to the very low sample of 14 who do not participate.

7.1.4 Demographics

It is important to compare the demographics of our control communities and CCT communities to ensure the two groups are similar and there are not systematic differences that may be driving changes in outcomes. Table 9 presents this information.

Table 9: Demographics, treatment compared to control

	Control communities	CCT communities	All
Age (mean)	37.0***	40.5***	39.7
Female (%)	64.5%	64.4%	64.4%
Disability, affects day to day (%)	20.5%	20.1%	20.2%

Married or living with partner (%)	55.8%***	62.8%***	61.2%
Divorced or separated (%)	6.9%*	5.8%*	6.1%
Widowed (%)	9.1%	10.3%	10.1%
Single (%)	28.0%***	21.0%***	22.6%

Christian (%)	83.5%***	95.7%***	93.0%
Muslim (%)	15.9%***	3.8%***	6.5%
Other/no religion (%)	0.6%	0.5%	0.5%

No formal schooling (%)	22.5%***	16.6%***	17.9%
Some primary schooling (%)	33.5%***	39.7%***	38.3%
Some secondary schooling (%)	19.8%	19.0%	19.2%
Secondary school completed (%)	15.0%***	12.3%***	12.9%
Post-secondary qualifications (%)	9.2%***	12.5%***	11.7%

In paid work (%)	14.5%	13.8%	14.0%
Self employed (%)	27.1%***	35.7%***	33.7%

	Control communities	CCT communities	All
Subsistence farmer (%)	40.7%***	49.8%***	47.7%
In education (%)	6.5%**	5.3%**	5.6%
Unemployed (%)	21.7%***	12.4%***	14.5%
Retired (%)	2.0%	2.2%	2.2%
Doing unpaid housework (%)	4.0%	4.8%	4.6%

	Control communities	CCT communities	All
Female household head (%)	24.1%	23.6%	23.7%
People in household (mean)	6.5	6.5	6.5
Dependants in household (mean)	5.1**	4.9**	4.9
Urban (%)	27.8%	27.9%	27.9%
Often goes without food (%)	18.5%***	8.3%***	10.6%
Sample size	**1,767**	**6,046**	**7,813**

Notes: Other religion options were given (see appendix 11). Employment status adds up to more than 100 per cent. This was not a mutually exclusive question; it was deemed more appropriate that respondents could tick more than one option. Other categories may not be 100 per cent exactly due to rounding. Statistical difference is tested per row using a standard t-test, with a null hypothesis that the difference is 0. Stars denote statistical significance: $*p<0.1, **p<0.05, ***p<0.01$.

We considered the demographics of our CCT communities and control communities, using the key demographics listed in table 9. We also considered whether there was a statistically significant difference between the two groups.

From table 9 we observe that the greatest differences are in characteristics related to religion, unemployment and our proxy for poverty. Our CCT communities are more likely to be Christian and less likely to be Muslim (3.8 per cent compared to 15.9 per cent in control communities). Some difference is expected here due to the church-centred nature of the CCT processes. Our CCT communities are less likely to be unemployed (12.4 per cent compared to 21.7 per cent in control communities) and less likely to go without food (8.3 per cent compared to 18.5 per cent in control communities). Again, differences here may not be surprising; CCT communities may be better off, but also individuals in these communities may be better off because of CCT. As our outcome measures (see section 7.1.6) are also consistently better in CCT communities, some of these positive impacts may be

coming through in the demographics here. This highlights the importance of controlling for demographic factors, which will be done in our regression analysis.

We also observe differences in terms of age, marital status, education and other employment factors; respondents in CCT communities are likely to be slightly older, more likely to be married or in a formal relationship, likely to be better educated, and more likely to be self-employed or a subsistence farmer. These are not worrisome because they are generally small differences.

Our samples are similar in terms of gender, experience of disability, household size, household gender dynamics and urban/rural split; there are no statistically significant differences between our respondents in control communities and CCT communities for these factors.

These comparisons indicate there are some differences between the respondents in our CCT communities and control communities, but not differences that are worrisome once we use regression analysis and control for demographic characteristics. Although not shown here, a similar review was done at the country level as well, and the samples were considered similar enough.

7.1.5 Community-level information

Community-level information was collected from the 248 CCT facilitators surveyed across 201 CCT communities (a mean of 1.2 per community). These give information about recent changes that have occurred in CCT communities, which help put findings into context.

Chart 1: Church attendance in last year
[n = 244]
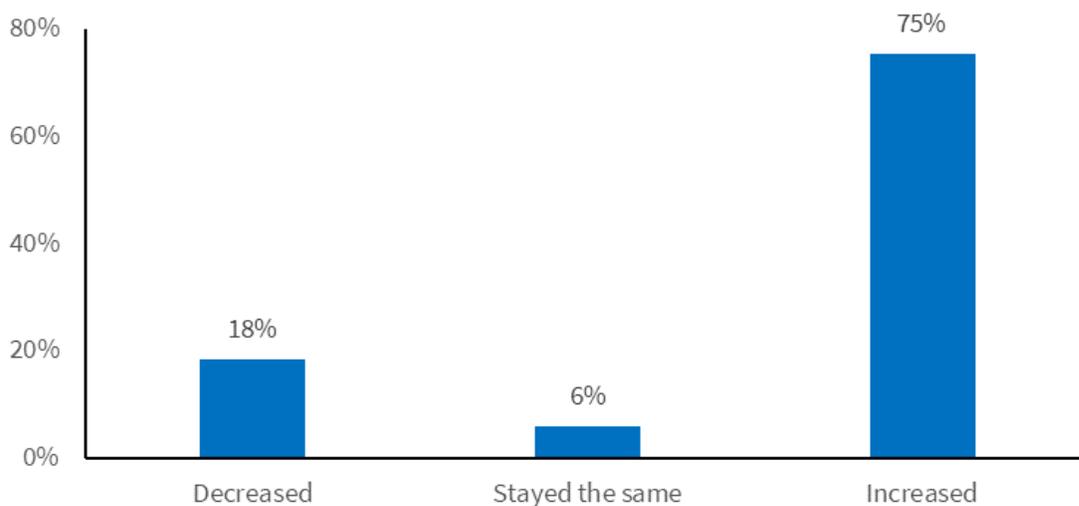
Chart 2: Financial giving to the church in last year
[n = 246]
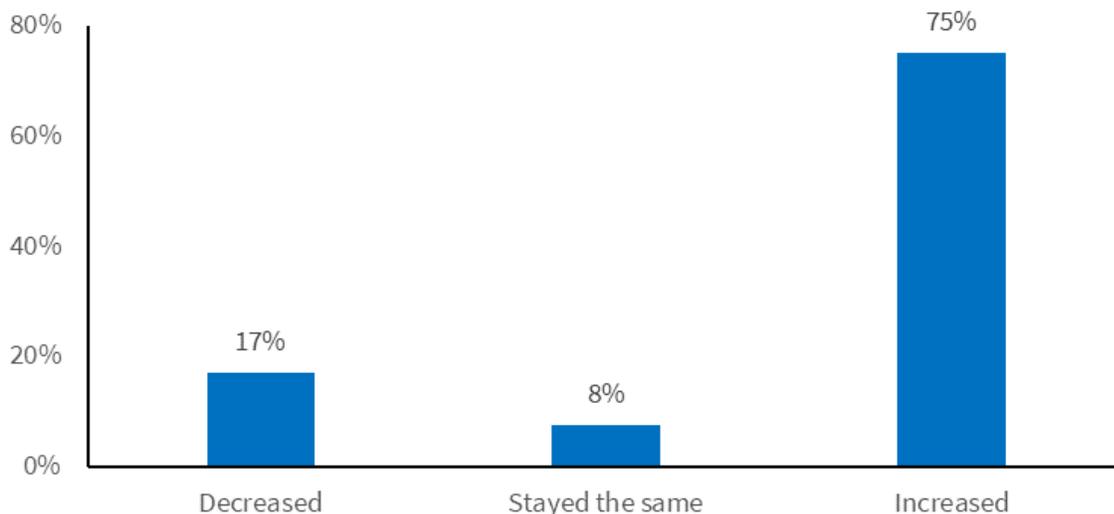
Overwhelmingly, church attendance and financial giving to the church have increased (see charts 1 and 2); for both attendance and financial giving, 75 per cent of facilitators said this had increased in the last year. Attendance and financial giving are highly correlated, with 84 per cent of church facilitators giving the same answer to both questions.

This trend is seen across Rwanda, Sierra Leone and Tanzania but not in Zimbabwe, where 50 per cent said attendance had decreased and 51 per cent said financial giving had decreased. It is important to consider these findings in the light of the Covid-19 pandemic; anecdotal evidence suggests attendance/giving may have reduced during the pandemic, so observed increases in the last year may be a recovery.

The most common new or improved community assets reported are schools (44 per cent of CCT facilitators mentioned these) and water access (42 per cent), followed by roads (35 per cent) (see chart 3). 'Other' assets provided include developments to church buildings (including toilets), agriculture projects, and savings groups.[84] In contrast to the other countries, church facilitators in Zimbabwe reported fewer community assets; in Zimbabwe 39 per cent of church facilitators answered 'none' to this question.[85]

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[84] It was beyond the scope of this research project to detail all the 'other' assets provided, but the full list has been given to Tearfund.

[85] The Zimbabwe country team note this is not surprising: the Zimbabwean economy is still largely 'dollarised', which makes goods, services and assets much more expensive in real terms.

Chart 3: New or improved community assets, due to work of CCT
[n = 248]
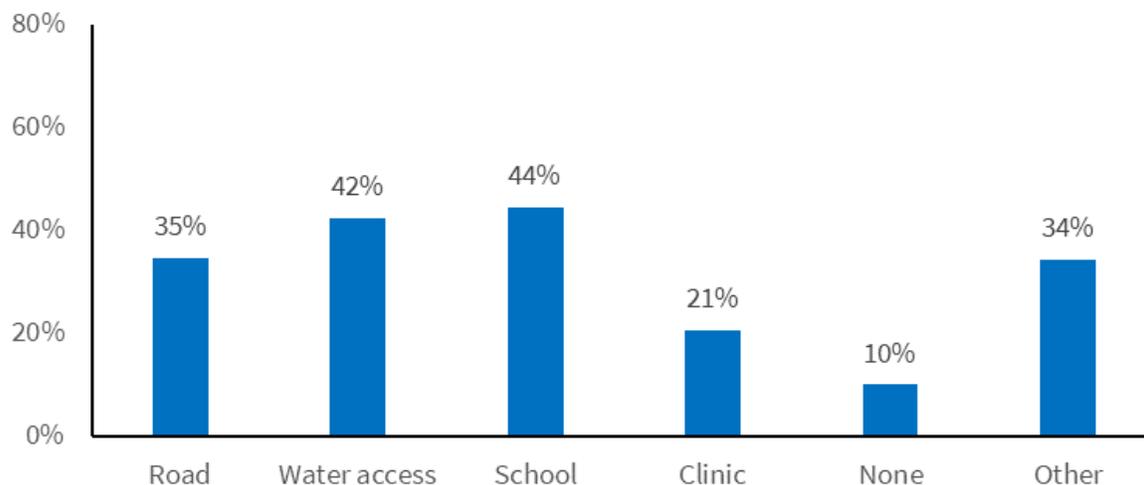
We cannot be certain that some of these assets might not have come about in the community anyway, without the input from CCT. Indeed, it is to be expected that other agencies (besides Tearfund and partners) are present in the CCT communities and implementing development interventions,[86] and CCT facilitators confirmed this. However, in section 6 (limitations) there is limited concern about other development actors influencing outcomes more than CCT influences them.

Overall, 58 per cent of church facilitators in CCT communities report that other external organisations are facilitating similar community development work in the community (eg NGOs, government initiatives). By deduction, therefore, 42 per cent of church facilitators report that Tearfund and its partners are the only development actors. When individuals in our main survey were asked about who provides care for the vulnerable, 60 per cent of individuals in CCT communities reported that NGOs do, whereas 88 per cent reported that religious organisations do (see appendix 7). This implies that among other development actors, the church and CCT play a vital role.

The most common shock reported was crop failure followed by drought (which may be closely linked to each other, see chart 4). Most common 'other' answers provided include death among livestock, and other extreme weather such as cyclones,[87] indicating most large shocks are within an overarching theme of climate change.[88] External shocks may impact outcomes, but we do not find that these

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[86] In all four of Tearfund's Qualitative Impact Assessment Protocol studies, community members named a number of NGOs – not only Tearfund and partners – as having contributed to changes in their wellbeing. See Tearfund (2021).
[87] It was beyond the scope of this research project to detail what 'other' shocks were experienced, but the full list has been given to Tearfund.
[88] There was no separate 'shock' option for Covid-19, because it was expected that Covid-19 would have been a shock for 100 per cent of communities (although it was not mentioned much in the 'other' options).

shocks influence our key outcome of life satisfaction for CCT facilitators. On balance it was decided not to account for these shocks in the analysis (considered in limitations, section 6).

Chart 4: Significant shocks in the past year
[n = 248]
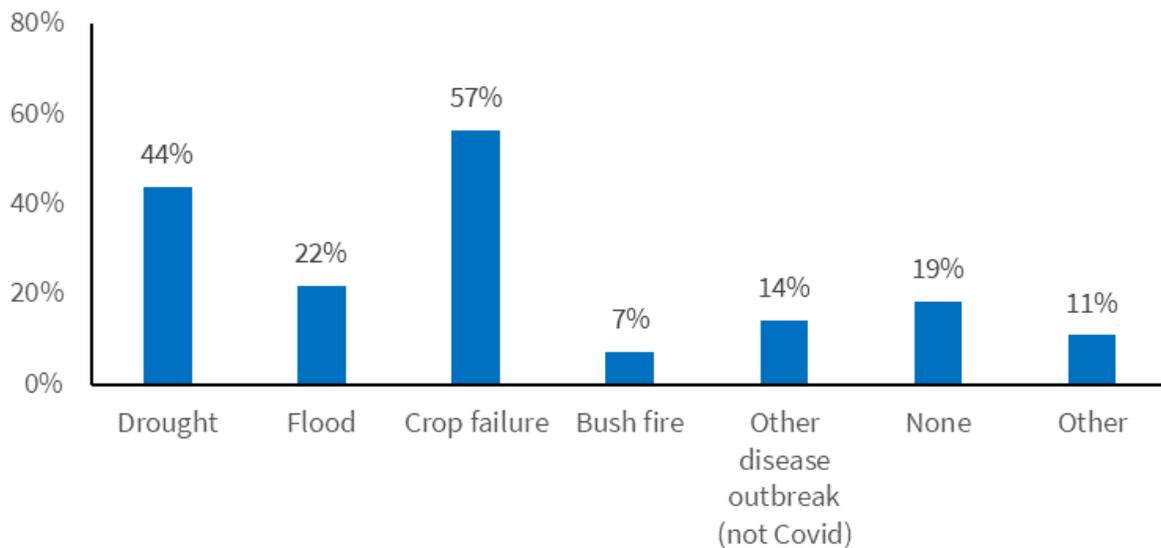
7.1.6 Outcomes

Table 10 outlines a summary of answers to our outcome questions and shows comparisons between control communities and CCT communities. Those treated as continuous variables (with numeric answers) are presented as means. For ease of presentation, questions with multiple choice answers have been converted into only two choices to create binary variables, ie a 'good' or 'bad' outcome.[89] Percentages presented in table 10 are the proportion who report a 'good' outcome. Listed for each outcome are the answer(s) that were considered a 'good' outcome. See appendix 11 for details of all survey questions and answers.[90]

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[89] For example, the first spiritual outcome refers to the question: *Do you agree or disagree with the following statement: 'I rely on my faith for direction in my life.' [Strongly disagree, disagree, neither agree nor disagree, agree, strongly agree].* The percentage reported is the percentage who answered 'agree' or 'strongly agree'.

[90] Other questions were included in the survey in these sections but were not considered outcome measures, eg F3, A2 and A4 in full survey. Answers to these questions and explanations of why they were not considered outcome measures are in appendix 7.

Table 10: Outcomes, treatment compared to control

	Control communities	CCT communities	All
Our 'key' outcome			
Life satisfaction [scale 0 = worst to 10 = best] (mean)	4.40***	5.93***	5.59
Economic security outcomes			
You or family gone without food[91] – % rarely/never	47.2%***	62.8%***	59.3%
You or family gone without medicine – % rarely/never	53.2%***	68.8%***	65.3%
You or family missed school – % rarely/never	47.7%***	67.6%***	63.0%
Invested in assets, in last year – % yes	36.7%***	64.7%***	58.4%
Earnings compared to last year – % same/more	35.6%***	57.4%***	52.5%
Financial situation next year – % better off	60.9%***	82.8%***	77.8%
Personal outcomes			
One year from now – % believe better off	55.7%***	79.9%***	74.4%
Five years from now – optimism about future [scale 0 = worst to 5 = best] (mean)	3.08***	3.78***	3.62
Can create change in own life – % agree/strongly agree	79.9%***	92.6%***	89.8%
Cope with unexpected events – % quite/completely confident	64.1%***	85.1%***	80.3%

[91]The food poverty variable is being used as a control variable, as a proxy for poverty, in most regressions in this report (see section 4.2), except where food poverty is the outcome. Reducing food poverty is still considered an important outcome of CCT, hence it is reported in this table and included as one of the six economic outcomes. Where it is considered an outcome, it cannot be included as a control.

	Control communities	CCT communities	All
Local trust – % a little/completely	72.2%***	88.6%***	84.9%
General trust – % believe most people can be trusted	14.0%***	29.3%***	25.8%
Valued & respected by family – % agree/strongly agree	84.3%***	94.7%***	92.3%
Satisfied with close relationships – % a little/completely	83.9%***	94.6%***	92.2%

Social outcomes			
Working on shared projects – % yes	27.6%***	65.7%***	57.1%
People are there for me – % agree/strongly agree	55.1%***	84.2%***	77.6%
Belong to community – % agree/strongly agree	75.7%***	93.0%***	89.1%
Make decisions in household – % agree/strongly agree	67.8%***	81.8%***	78.6%
Raise issues to decision-makers – % sometimes or often	36.0%***	57.9%***	53.0%
Influence decisions in community – % agree/strongly agree	53.9%***	79.5%***	73.7%

Spiritual outcomes			
Rely on faith for direction – % agree or strongly agree	93.0%***	98.5%***	97.3%
Help others in need – % sometimes or often	64.0%***	82.5%***	78.3%

Sample size	1,767	6,046	7,813

Notes: See appendix 11 for full information on how questions were asked, and possible answers. Statistical difference is tested per row using a standard t-test, with a null hypothesis that the difference is 0. Stars denote statistical significance: *p<0.1, **p<0.05, ***p<0.01.

Table 10 shows that all of the outcomes are more positive in CCT communities than in control communities, and the differences are statistically significant for all outcomes. For many of these outcomes the observed differential is large. However, these comparisons do not take into account any other influences (as we have done with our control variables in regressions). These are indicative only, and should not be used to draw conclusions about the impact of CCT. Below are simple descriptive comparisons only; it should be acknowledged that they take into account no other factors.

Our key outcome, life satisfaction, is 1.53 points higher on the 0 to 10 scale in CCT communities compared to control communities. The 'optimism about future' measure is 0.7 higher on the 1 to 5 scale in CCT communities. For the rest of the outcomes (which are binary) we consider the percentage point difference between CCT communities and controls.

Overall, social outcomes are those with the largest differential; on average, social outcomes are 24 percentage points higher in CCT communities than control communities. Notably, 'working on a shared project' is 38 percentage points higher, 'people being there for me' is 29 percentage points higher and 'raising issues to decision-makers' is 22 percentage points higher.

Economic outcomes are next in terms of the largest overall differential, with outcomes being 20 percentage points higher on average in CCT communities. 'Investing in assets' is 28 percentage points higher.

Personal outcomes are, on average, 16 percentage points higher in CCT communities. 'Believing better off one year from now' is 24 percentage points higher and 'confidence in coping with unexpected events' is 21 percentage points higher.

Lastly, spiritual outcomes show the smallest differential. 'Helping others in need' is 19 percentage points higher in CCT communities. The outcome that shows the smallest differential is 'relying on faith for direction in life' (six percentage points higher). This is high also in control communities, so only a small difference could be expected. Nevertheless this small difference is still significant.

We consider the extent to which other development actors could be driving these changes (section 6 on limitations). Those who mentioned the presence of NGOs reported 0.4 higher life satisfaction than those who did not (a simple two-way comparison, not accounting for other factors using regression analysis). This is a much smaller amount than the differential in average life satisfaction between CCT and control communities, as presented in table 10.

In table 11 we summarise our key outcome, life satisfaction, by different levels of involvement. It is important to note that these descriptive statistics can tell us how outcomes differ for different levels of involvement in CCT, but no conclusions will be drawn from this because we cannot be sure whether higher satisfaction is more closely related to being involved with CCT or if it is more closely related to

other factors. For this reason, these differences are not tested for statistical significance; priority is given to the statistical significance testing done in regression analysis.

Table 11: Mean life satisfaction by different levels of involvement

Mean life satisfaction [0–10]	Control communities	CCT communities			
By treatment	4.40	5.93			

		Stage 1	Stage 2	Stage 3	Stage 4/5
By CCT stage[92]	4.40	5.73	5.88	5.88	6.04
By CCT maturity		0–2 years	3–5 years	5+ years	
	4.40	5.68	6.03	5.95	

By church membership		Non–church member		Church member	
	4.40	5.43		5.99	
By length of involvement in CCT		Not involved	1 year or less	Between 1 and 3 years	3 years or more
	4.40	5.42	5.87	6.12	6.28
By frequency of involvement in CCT		Not involved	Less often than every month	Once or twice a month	At least once a week if not more
	4.40	5.42	5.97	6.11	6.05

Notes: Overall sample size is approximately 7,813. For detail of the sample within each category see tables 4, 5 and 6.

Community-level categories

When observing how life satisfaction varies by CCT stage, we see that individuals in communities further on in the process have, on average, higher life satisfaction. Those in stage 1 of the CCT process (where participants first get the vision of how their community could improve) have higher life satisfaction than those in control communities. In the next stages it is higher (although stage 2 and

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[92] For those going through the process again, the value is 4.99

stage 3 are the same), and highest in stages 4 and 5 (when the largest results are expected). In terms of CCT maturity, those in the 3–5 year bracket have the highest satisfaction.

Individual-level categories

Life satisfaction is higher for church members than non-members, and higher for those who participate than those who do not. Even those who do not participate and are not church members report, on average, one point higher life satisfaction than those in control communities. In terms of levels of individual involvement, average life satisfaction is higher for those who have been involved for longer, peaking at 6.28 for those involved for the longest time (4+ years). In terms of frequency, average life satisfaction peaks at 6.11 for those who are involved once or twice a month. For those involved at the highest frequency (at least once a week), life satisfaction is a bit lower than this value.

These higher values of life satisfaction associated with greater (community or individual) involvement with CCT could just be correlations that are driven by other factors. Using regression analysis (section 7.2) allows us to identify the relationship between involvement with CCT and a specific outcome, even after taking into account the influence of these other factors, such as having a job, a higher level of education or more food to eat.

7.2   Regression results

In this section we report results from regression analysis. Each table of regression results starts with the dependent variable (or outcome). Underneath this are some of the explanatory variables – the ones we are most interested in. More explanatory variables – also known as control variables – were included in the model but are not reported here.[93] For reference, full results (ie including the coefficients on all of our control variables) of our first regression (model 1, table 12, 7.2.1) are presented in appendix 6. Unless otherwise stated, all regressions in section 7.2 include this same set of control variables.

Explanatory variables reported are often different subgroups of people, including a 'base group' to which other groups are compared. The base group or comparison group is indicated by a coefficient of 0.000. For example, in model 1 in table 12, control communities are the base group, and reported coefficients for the other subgroup (being in a CCT community) are relative to the base group of control communities.

A reported coefficient indicates the difference in the outcome that is due to that explanatory variable, and is not explained by the control variables. This means the coefficient is the change in the outcome that is associated with being in that subgroup. For example, in model 1 in table 12, a coefficient of 1.185 is the increase in life satisfaction that is associated with being in a CCT community.

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[93] Allowing us to focus on our explanatory variables of interest.

Each coefficient is reported with a level of significance – indicated by the number of asterisks. All coefficients of interest are reported, but only statistically significant coefficients are reported as conclusive findings, like those in table 12a.[94]

In each table more than one model may be presented, indicated by their title definition at the top of each column. Generally models differ because they include different explanatory variables or use different subgroups as the base group. For example, model 2 in table 12 utilises an interaction term; the coefficient on 'being in a CCT community' is not reported as this subgroup was not included – instead that subgroup was split into two groups (using interaction terms), for which the coefficients are reported.

At the bottom of each table is the number of observations. All regressions in section 7.2 use the full sample of individuals (7,813).[95] However, where a lower number of observations are reported for any regressions, this is due to missing answers.[96] Also at the bottom of each table is the adjusted R-squared, which indicates the fit of the model.[97]

7.2.1 Impact of being in a CCT community[98]

CCT is bringing positive impacts to the communities where it works; the impact is felt most by those who participate in CCT activities but is also spread to the wider community.

In table 12 we present regression results isolating the impact of being in a CCT community (model 1), and using interaction terms isolate this impact for those who participate in CCT and those who do not (model 2).

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[94] *** indicated significant at the 1% level, ** at the 5% level, and * at the 10% level. In this report, significance at the 10% level and above is considered significant for conclusions to be drawn. If it is not significant, no conclusion can be drawn about the relationship.

[95] CCT facilitators were not asked about their level of involvement with CCT. Answers to 'are you a church member?', 'have you heard of CCT?', and 'do you participate in CCT activities?' are all assumed to be yes for church facilitators, so they can be included in these regressions.

[96] If any answer is missing, eg the answer to any of our control variables, that observation cannot be included in the regression. Therefore, the number of observations represents the number of respondents for which we have *full* information of the dependent variable (outcome of interest) and all independent variables (key explanatory variables and all control variables).

[97] The adjusted R-squared indicates the fit of the model (or how much of the variation in the dependent variable can be explained by variation in the explanatory variables). It ranges between 0 and 1, with a higher number indicating a better fit. Wellbeing regressions typically produce an R-squared value of 0.1–0.3. Fujiwara, Kudrna and Dolan (2014) report 0.13 and 0.15, and Shi et al (2019) report 0.33, and acknowledge that this is higher than other similar models in the literature.

[98] The full regression output for Question 1 can be seen here.

Table 12: Regression coefficients indicating impact of being in a CCT community on life satisfaction

Dependent variable: life satisfaction [scale 0–10]	Basic model, compared to control communities (model 1)	With interaction terms	
		Compared to control communities (model 2)	Compared to those in treatment who do not participate (model 3)
Control communities	0.000	0.000	-0.771***
Being in a CCT community	1.185***		
Being in a CCT community, *does not* participate in CCT activities		0.771***	0.000
Being in a CCT community, *does* participate in CCT activities		1.358***	0.588***
Observations	7,417	7,212	7,212
Adjusted R-squared	0.198	0.211	0.211

Notes: The dependent variable Y = life satisfaction on a scale of 0 to 10. Each column represents a separate regression model. Stars denote statistical significance: *$p<0.1$, **$p<0.05$, ***$p<0.01$. Only the coefficient of the variable of interest is shown here. Control variables include age, gender, marital status, religion, gender of household head, number of people in household, education level, level of disability, country, whether the community is urban, and food poverty. Coefficients of other control variables can be viewed in appendix 6. Blank spaces mean the respective variable was not included in that model. A coefficient of 0.000 means this is the base group other subgroups were compared to.

Model 1 in table 12 shows us that even after we control for various demographics factors and control variables, **being in a CCT community is associated with 1.185 higher life satisfaction** compared to being in control communities, and this is statistically significant at the 1% level.

Model 2 in table 12 utilises interaction terms[99] to compare between those who participate in CCT activities and those who do not. **For those in CCT communities who do not participate in CCT activities, there is still an associated increase in life satisfaction of 0.771** (compared to those in control communities, which is significant at the 1% level), implying that the impact of CCT spreads to the wider community, not just those involved in activities.

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[99] Interaction variables allow us to identify the impact of an explanatory variable for different subgroups (see appendix 3 for more detail).

Model 2 in table 12 also shows us that for **those in CCT communities who do participate, the associated increase in life satisfaction is 1.358**.[100] Coefficients in table 12 reported as 0.000 indicate this is the group that other categories are being compared to (the base group). In model 2 this base group is still the control communities; so our coefficients tell us whether each group is significantly different to respondents in control communities but they do not tell us whether they are different to each other. Therefore, model 3 compares those in CCT communities who do participate to those in CCT communities who do not participate.[101] The coefficient 0.588 in model 3 *is* statistically significant, which tells us that the coefficient on those who do not participate (0.771) and those who do participate (1.358) are different to each other; therefore we can conclude that **the positive association with life satisfaction is greater for those who participate than those who do not.**

For each conclusion, we consider whether it holds in other contexts (for life satisfaction in different countries) and for other outcomes. This involves repeating the regressions. When regressions are repeated for each country alone, this means using a smaller sample size (approximately 2,000 rather than 7,200–7,400) so we are less likely to find significant results. When regressions are repeated for other outcomes it is a simple case of using a different dependent variable.

For best use of space, regression results are not reported here; a summary is presented instead (as in table 12a).[102]

Table 12a: Summary of conclusion 1a in different countries and for different outcomes

Conclusion 1a: *After accounting for other factors, people in CCT communities have higher life satisfaction than those in non-CCT communities*	
Does it hold for life satisfaction in individual countries?	Rwanda ✔, Sierra Leone ✔, Tanzania ✔, Zimbabwe ∼
Does it hold for other outcomes?	Economic (6/6), Personal (8/8), Social (6/6), Spiritual (2/2)

Notes: ✔ = conclusion holds and is statistically significant, ∼ = insignificant results, ✗ = opposite conclusion holds and is statistically significant. (X/X) = number of outcomes for which conclusion holds and is statistically significant.

Being in a CCT community is associated with higher life satisfaction in Rwanda, Sierra Leone and Tanzania but not in Zimbabwe.

Outcomes in the four domains (except for optimism about the future – scale 0 to 5) were categorical in nature and were converted to binary outcomes (table 10, section 7.1.6) for ease of interpretation. For example, being able to cope with unexpected events was considered a 'good' outcome if the answer

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[100] Also significant at the 1% level, indicated by ***. From now on, significance at the 1% level is not commented on. We assume the reader can observe this by looking at the the number of *s.

[101] This is mathematically exactly the same as model 2, but uses '*being in a CCT community, does not participate in CCT activities*' as the base group, indicated by the coefficient 0.000.

[102] The full results can be seen in the full regression output for Question 1, here.

was quite confident or completely confident. These can therefore be interpreted as a higher or lower likelihood to have a positive value of the outcome variable (see section 4.1).

For all outcome measures (economic, personal, social and spiritual), being in a CCT community is associated with better outcomes. **On average across outcomes, people in CCT communities have a 13.9 percentage points higher likelihood of reporting positive outcomes, compared to those in non-CCT communities.[103]** Examples of the largest impacts in other outcomes are shown in box 1.

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Box 1:
After accounting for other factors, people in CCT communities are:

- 22.6 percentage points more likely to invest in assets (Economic)
- 18.2 percentage points more likely to earn more or the same compared to last year (Economic)
- 16.6 percentage points more likely to be confident they can cope with unexpected events (Personal)
- 31.3 percentage points more likely to work together on a shared project (Social)
- 14.2 percentage points more likely to help others in need (Spiritual)
- 25 percentage points more likely to feel that people would be there for them if they needed help (Social)
- 12.6 percentage points more likely to have rarely or never had a member of their family miss school (Economic)
- 12.3 percentage points more likely to have rarely or never gone without enough food (Economic)

compared to those in non-CCT communities.

These can be converted to percentage increases, relevant to the proportion who report each outcome in non-CCT communities (see table 10).[104]

After accounting for other factors, people in CCT communities are:

- 62% more likely to invest in assets (Economic)
- 51% more likely to earn more or the same compared to last year (Economic)
- 26% more likely to be confident they can cope with unexpected events (Personal)
- 113% more likely to work together on a shared project (Social)
- 22% more likely to help others in need (Spiritual)
- 45% more likely to feel that people would be there for them if they needed help (Social)

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[103] These 'overall percentage point likelihood values' take the average of coefficients in each domain (economic, personal, social and spiritual) and then the average of the four domains, therefore giving equal weight to each domain. They exclude the outcome for optimism about the future (since this is continuous), so contain information from the 21 binary outcomes.
[104] For example, 36.7 per cent invest in assets in non-CCT communities. 0.226/0.367 = 0.615.

- 26% more likely to have rarely or never had a member of their family miss school (Economic)
- 26% more likely to have rarely or never gone without enough food (Economic)

compared to those in non-CCT communities.

Box 1 shows that the greatest impacts for CCT communities are in working together for a cause, increased financial stability, and having the confidence to cope in adverse situations.

Table 12b: Summary of conclusion 1b in different countries and for different outcomes

Conclusion 1b: *After accounting for other factors, even people in CCT communities who do not participate in CCT have higher life satisfaction than people in non-CCT communities*	
Does it hold for life satisfaction in individual countries?	Rwanda ✔, Sierra Leone ✔, Tanzania ✔, Zimbabwe ∼
Does it hold for other outcomes?	Economic (5/6), Personal (8/8), Social (5/6), Spiritual (2/2)

Notes: ✔ = conclusion holds and is statistically significant, ∼ = insignificant results, ❌ = opposite conclusion holds and is statistically significant. (X/X) = number of outcomes for which conclusion holds and is statistically significant.

Positive impacts for those in CCT communities who do not participate are found in Rwanda, Sierra Leone and Tanzania but not in Zimbabwe. Being in a CCT community even if not participating in CCT activities is associated with better outcomes for 20 of our 22 outcomes. **This indicates the positive impacts of CCT activities spread from participants to the wider community**. **On average, even non-participants have a 7.7 percentage points higher likelihood of reporting positive outcomes, compared to those in non-CCT communities.**[105] The broader impact is not observed for the economic outcome 'you or your family gone without food' or the social outcome 'raised issues to decision-makers,' implying that the increased likelihood to advocate on their own behalf is only felt if they actually participate in the programme. If a community member does not participate, they benefit from most outcomes but they do not gain a voice the same way participants do. Examples of the largest impacts in other outcomes are shown in box 2.[106]

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[105] See footnote 103.

[106] The full results for Question 1 can be seen here.

Box 2:

After accounting for other factors, even non-participants in CCT communities are:

- 10 percentage points more likely to rarely or never miss school (Economic)
- 10.1 percentage points more likely to believe their financial situation will be 'better off' next year (Economic)
- 13.9 percentage points more likely to be confident they can cope with unexpected events (Personal)
- 15.7 percentage points more likely to feel that 'people are there for me'(Social)
- 11.8 percentage points more likely to help others in need (Spiritual)

compared to those in non-CCT communities.

Box 2 shows that the greatest impacts for non-participants are in feeling like they have support around them, and having confidence to cope with difficult aspects of their lives.

Table 12c: Summary of conclusion 1c in different countries and for different outcomes

Conclusion 1c: *After accounting for other factors, within CCT communities, life satisfaction is higher for those who participate in CCT activities than those who do not*	
Does it hold for life satisfaction in individual countries?	Rwanda ?, Sierra Leone ✔ , Tanzania ✔ , Zimbabwe ✔
Does it hold for different outcomes?	Economic (6/6), Personal (8/8), Social (6/6), Spiritual (1/2)

Notes: ✔ = conclusion holds and is statistically significant, ∼ = insignificant results, ✗ = opposite conclusion holds and is statistically significant. (X/X) = number of outcomes for which conclusion holds and is statistically significant.

There are too few respondents in Rwanda in CCT communities who do not participate (see table 6, section 7.1.3) for this comparison to be meaningful so this cannot be tested in Rwanda. **In the countries for which it could be tested, life satisfaction is higher for those who participate in CCT activities than those who do not**. This is consistently found across all but one outcome; it does not hold for 'rely on faith for direction in life', which is also high in control communities. **On average, those who participate in CCT have a 8.5 percentage points higher likelihood of reporting positive outcomes, compared to those in CCT communities who do not participate.[107]** Examples of the largest impacts in other outcomes are shown in box 3.[108]

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[107] See footnote 103.

[108] The full results for Question 1 can be seen here.

> Box 3:
>
> After accounting for other factors, those who participate in CCT activities are:
>
> - 17.8 percentage points more likely to invest in assets (Economic)
> - 15.2 percentage points more likely to earn more or the same compared to last year (Economic)
> - 9.4 percentage points more likely to believe they will be 'better off' one year from now (Personal)
> - 35.5 percentage points more likely to work on a shared project (Social)
> - 3.3 percentage points more likely to help others in need (Spiritual)
>
> compared to those in CCT communities who do not participate.

Box 3 shows that the greatest impacts for participants are on working together for a cause, and positive outlooks on their future prosperity.

Answering question 1: Do people in CCT communities experience improved wellbeing?

We observe that being in a CCT community (compared to control communities) is associated with improved wellbeing (+1.185 higher life satisfaction on a scale of 0 to 10). Consideration of the factors that influenced which communities were selected to do CCT *first* (potentially introducing bias and affecting the comparability of CCT and non-CCT communities) led us to conclude that downward bias on our estimate of the impact of being in a CCT community is more likely than upward bias, especially when data is pooled for all countries.

This is found not only for our key wellbeing measure (life satisfaction), but also for all our measures across the economic, personal, social and spiritual domains. Being in a CCT community is associated with better outcomes in multiple aspects of people's lives, including working together for a cause, helping others, and increasing financial stability.

The greatest association is found for those who participate in CCT activities (+1.358 higher life satisfaction). Community members self-select to take part in CCT, so we cannot rule out that some of this (likely only a small amount) may be down to unobservable personality traits.

The positive association is also observed for non-participants (+0.771 higher life satisfaction) implying that the benefits of CCT spread from participants to the wider community. Sampling stratification and mobilisation strategy ensured that non-participants represented the wider community as far as possible, but we cannot be sure that this perfectly represents the wider community. Positive association is observed for multiple aspects of the lives of non-participants (not just life satisfaction), notably increased support from those around them.

Of note here are the findings in Zimbabwe: life satisfaction is not higher in CCT communities compared to control communities. However, within CCT communities, life satisfaction is higher for those who participate than those who do not.

Due to the nature of regression analysis these associations are, as far as possible, attributable to CCT and not to other factors included in the model.[109]

7.2.2 Impact of CCT maturity[110]

Overall, positive impacts are observed in churches and communities at all levels of CCT maturity.

The relative strength of different outcomes do differ as CCT maturity increases.

In table 13 we have split 'being in a CCT community' into the three groups according to CCT maturity (length of time the church/community have been involved in CCT) to test whether churches and communities that have been engaged in the CCT process for longer are associated with greater wellbeing outcomes.[111]

Table 13: Regression coefficients indicating impact of CCT maturity on life satisfaction

Dependent variable: life satisfaction [scale 0–10]	Compared to control communities (model 1)	Compared to 0–2 maturity group (model 2)	Compared to 3–5 maturity group (model 3)
Control communities	0.000	-1.052***	-1.313***
0–2 years	1.052***	0.000	-0.260***
3–5 years	1.313***	0.260***	0.000
5+ years	1.155***	0.102	-0.158**
Observations	7,417	7,417	7,417
Adjusted R-squared	0.20	0.20	0.20

Notes: The dependent variable Y = life satisfaction on a scale of 0 to 10. Only the coefficient of the variable of interest is shown here. A coefficient of 0.000 means this is the base group other subgroups were compared to. Stars denote statistical significance: *$p<0.1$, **$p<0.05$, ***$p<0.01$. Control variables include age, gender, marital status, religion, gender of household head, number of people in household, education level, level of disability, country, whether the community is urban, and whether the church is going through the CCT process again. Coefficients of other control variables can be shared on request. Each column represents a separate regression model. Blank spaces mean the respective variable was not included in that model.

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[109] Unobserved factors may still influence the results.

[110] The full regression output for Question 2 can be seen here.

[111] A small number of sampled CCT communities are going through the CCT process again, having completed it once before. Though they have been engaged in CCT for many years and have completed the first cycle, in the second cycle they may still be at an early stage. Respondents who were not involved in the first cycle (eg because they are new to the church/community) may bias results. Therefore, regressions in table 13 also control for whether the church is going through the process again.

Model 1 in table 13 compares each category to control communities. We see that **churches at all levels of CCT maturity are associated with higher life satisfaction in their communities than in control communities** (all have positive and significant coefficients). Churches that have been involved for 0–2 years are associated with 1.052 higher life satisfaction. We observe that those in the 3–5 years category have the highest associated increase, but from model 1 we do not know if this is just down to chance.

Hence, model 2 uses '0–2 years' as the base or comparison group; we see that the coefficient on 3–5 years is statistically significant but the coefficient on 5+ years is not. Compared to the churches involved in CCT for 0–2 years, churches involved for 3–5 years are associated with 0.260 higher life satisfaction on average in their community. In model 3 (with 3–5 years as base group) the coefficient on 5+ years is negative and significant. Churches involved for 5+ years are associated with 0.158 *lower* life satisfaction compared to those who are 3–5 years into the process.

We can conclude that churches at all levels of maturity are associated with higher life satisfaction in their communities compared to communities that have not started CCT (according to the life satisfaction outcome). The merged sample of countries suggests that a) the optimum benefit is experienced where churches have been involved in CCT for 3–5 years, b) positive impacts are sustained for 5 years, but thereafter positive impacts start to drop, and c) at 5+ the benefits are similar to those at the start of the process. Based on this, one could conclude there might be merit in a specific 5-year intervention to ensure positive impacts do not drop off. However, since the patterns are different by country (see below), any changes to the CCT process based on these findings related to CCT maturity should take a more country-specific approach.

Although not reported here, **the finding that better outcomes are observed in communities at all levels of CCT maturity is found across all outcomes in all the domains**[112] (not just life satisfaction, as seen in table 13). This is in comparison to control communities; therefore, it is the comparison between CCT maturity levels that is interesting to explore. Hence, it is model 2 in table 13 that is then repeated in other contexts, and summarised in table 13a.

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[112] The full regression output for Question 2 can be seen here.

Table 13a: Summary of conclusion 2 in different countries and for different outcomes

Conclusion 2: *Compared to the start of the process (0–2 years maturity), life satisfaction is higher for people in the communities where the church is at 3–5 years maturity, but not those at 5+ maturity*	
Does it hold for life satisfaction in different countries?	Rwanda ❌, Sierra Leone 〜, Tanzania ❌, Zimbabwe〜
Does it hold for different outcomes?	Economic (1/6), Personal (3/8), Social (0/6), Spiritual (1/2)

Notes: ✔ = conclusion holds and is statistically significant, 〜 = insignificant results, ❌ = opposite conclusion holds and is statistically significant. (X/X) = number of outcomes for which conclusion holds and is statistically significant.

In Rwanda, compared to the start of the process (0–2 years maturity), life satisfaction is higher for people in the communities where the CCT process is at 3–5 years maturity *and* at 5+ years maturity. In Tanzania, compared to the start of the process (0–2 years maturity), life satisfaction is similar for people in communities where the CCT process is at 3–5 years maturity, but for those where the CCT process is at 5+ years maturity it is *lower* than for those at the start of the process. In Sierra Leone and Zimbabwe there are no discernible differences among churches/communities that have been engaged in CCT for different lengths of time. Significant findings for the outcomes according to CCT maturity are shown in box 4.[113]

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[113] The full results can be seen in the full regression output for Question 2, here.

Box 4:

Compared to the start of the process (0–2 years maturity), higher likelihood of:

- rarely or never going without medicine (Economic, 1)
- believing you will be better off one year from now, feeling confident you can cope with unexpected events, and reporting higher optimism about five years from now (Personal, 3)
- relying on faith for direction in life (Spiritual, 1)

is seen at *3–5 years only*.

Compared to the start of the process (0–2 years maturity), higher likelihood of:

- rarely or never going with food, rarely or never missing school, investing in assets, and being better off financially next year (Economic, 4)
- reporting local trust, reporting general trust, feeling valued and respected by their family and feeling satisfied with close relationships (Personal, 4)
- working on a shared project, feeling support from others, belonging to the community and influences decisions in the household (Social, 4)

is seen at *3–5 and 5+ years*.

Compared to the start of the process (0–2 years maturity), higher likelihood of:

- earning more or the same as last year (Economic, 1)
- agreeing that they can create change (Personal, 1)
- raising issues to decision-makers (Social, 1)

is seen at *5+ years only*.

For two outcomes: influencing decisions in the community (Social, 1) and helping others (Spiritual, 1), no difference is observed at 3–5 or at 5+ years compared to the start of the process.

For two outcomes, improvements are observed in communities of least CCT maturity (0–2 years, compared to control communities) but thereafter are consistent throughout the phases. These

outcomes are related to influencing decisions in the community and helping others, implying CCT initially helps to instil these values in the community and they remain in place throughout the process.

For five outcomes, improvements are only seen for communities of intermediate CCT maturity (3–5 years, compared to 0–2) but not communities of the most mature CCT processes. These outcomes are increased reliance on faith, relieving immediate medical needs, increased resilience and optimism about the future (feeling optimistic about their situation one year and five years from now). This is the conclusion also found for life satisfaction (table 13).

For most outcomes in our four domains (12 out of 22 – four personal, four social and four economic), improvements are seen for communities of intermediate CCT maturity and continue to be observed in communities of the most mature CCT processes (3–5 and 5+ years compared to 0–2). These outcomes are based around improved relationships and increased voice.

For three outcomes, benefits are only seen for communities of the most mature CCT processes (5+ years compared to 0–2). These are where increased income is realised (earning more than last year), and more visionary outcomes are realised (raising issues to decision-makers and believing that they can create change) – outcomes we might intuitively expect to be realised later in the process.

Answering question 2: Do churches that have been engaged in CCT for a longer period of time have improved wellbeing in their community?

Churches and communities at all levels of CCT maturity are associated with greater wellbeing outcomes compared to control communities. This is found not only for our key wellbeing measure (life satisfaction), but also for all our measures across the economic, personal, social and spiritual domains. We do not always observe that churches and communities that have been engaged in CCT for longer have greater wellbeing outcomes. If we take our key outcome of life satisfaction, we conclude that positive associations peak at intermediate CCT maturity (+1.313 for 3–5 years) and drop off slightly after 5+ years. However, for most outcomes in other domains, positive associations are observed for communities of intermediate CCT maturity and are also observed in communities with the most mature CCT processes (5+ years).

We also observe that the pattern of change is different for different outcomes and for different countries. Positive collaboration-type outcomes (such as influencing decisions and feeling supported by others) are observed early on and remain. Improved relationships and increased voice are observed most in communities of intermediate CCT maturity and remain. For the more visionary outcomes (such as raising issues to decision-makers and creating change), associations are greatest in communities with the most mature CCT processes.

7.2.3 Impact of individuals' duration of involvement[114]

Those individuals who are involved for a longer period of time experience greater wellbeing than those involved for a shorter period.

In table 14 we have split 'being in a CCT community' into those 'not involved' and the three categories of length of time the individual has been involved,[115] to test whether those who have been involved for a longer period of time experience greater wellbeing outcomes.

Table 14: Regression coefficients indicating impact of time involved on life satisfaction

Dependent variable: life satisfaction [scale 0–10]	Compared to control communities (model 1)	Compared to those involved for 1 year (model 2)	Compared to those involved for 1 year, with 2–3 and 4+ grouped (model 3)
Control communities	0.000	-1.234***	-1.234***
Not involved	0.758***	-0.476***	-0.473***
1 year or less	1.234***	0.000	0.000
Between 1 year and 3 years	1.428***	0.194***	
More than 3 years	1.527***	0.293***	
More than 1 year (grouping of the two categories above)			0.229***
Observations	6,942	6,942	6,942
Adjusted R-squared	0.21	0.21	0.21

Notes: The dependent variable Y = life satisfaction on a scale of 0 to 10. Only the coefficient of the variable of interest is shown here. A coefficient of 0.000 means this is the base group that other subgroups were compared to. Stars denote statistical significance: *$p<0.1$, **$p<0.05$, ***$p<0.01$. Control variables include age, gender, marital status, religion, gender of household head, number of people in household, education level, level of disability, country, and whether the community is urban. Coefficients of other control variables can be shared on request. Blank spaces mean the respective variable was not included in that model.

Model 1 compares each category to control communities; those not involved have an associated increase in life satisfaction of 0.758.[116] We observe that as length of time involved increases, the coefficients increase, but we do not know whether they are statistically different to each other or

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[114] The full results can be seen in the full regression output for Question 3a, here.

[115] Duration of involvement was reported in months and then converted to years during analysis.

[116] This is a similar value to that in table 12 for those not involved. It is unlikely to be exactly the same due to the slight differences in the regressions (variables included and therefore sample size).

whether the difference we see could be down to chance. Therefore, it is vital we use different base groups to determine this. Model 2 uses '1 year or less' as the base or comparison group; we see that coefficients on 'between 1 year and 3 years' and on 'more than 3 years' are both significant, meaning that both groups involved for longer see greater benefits than those only involved for one year or less.

We also used 'between 1 year and 3 years' as the base group and found that the coefficient on 'more than 3 years' is not statistically significant (not reported here). This means that there is not enough evidence to support the claim that being involved for more than three years is better than being involved for one to three years. Therefore, we decided to combine the two categories of longer time involved (model 3) so that we can make a more simple comparison of those who are involved for more than one year compared to those who are involved for one year or less. We observe that **compared to individuals who are involved for one year or less, being involved for more than one year is associated with 0.229 higher life satisfaction.** It is the comparison made in model 3 that is then repeated in the other contexts in table (14a).

Table 14a: Summary of conclusion 3 in different countries and for different outcomes

Conclusion 3: *Compared to those involved for 1 year or less, those who are involved for 1+ years experience higher life satisfaction*	
Does it hold for life satisfaction in different countries?	Rwanda ✔ , Sierra Leone∼, Tanzania ✔ , Zimbabwe - ∼
Does it hold for other outcomes?	Spiritual (0/2), Personal (5/8), Social (6/6), Economic (5/6)

Notes: ✔ = conclusion holds and is statistically significant, ∼ = insignificant results, ❌ = opposite conclusion holds and is statistically significant. (X/X) = number of outcomes for which conclusion holds and is statistically significant.

The finding that those who are involved for longer (more than one year compared to one year or less) is found in two out of four countries, and 16 out of 22 outcomes. **Overall, those who participate in CCT for more than one year have a 2.9 percentage points higher likelihood of reporting positive outcomes, compared to those in CCT communities who participate for one year or less.**[117] Examples of the largest impacts in other outcomes are shown in box 5.[118]

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[117] See footnote 103. This estimated average effect includes all coefficients. Although some coefficients were insignificant, they are still the best estimate of that relationship.

[118] The full results can be seen in the full regression output for Question 3a, here.

Box 5:

After accounting for other factors, those who participate in CCT activities for more than one year are:

- 9.7 percentage points more likely to earn more or the same as last year (Economic)
- 8.7 percentage points more likely to invest in assets (Economic)
- 3.9 percentage points more likely to rarely or never go without food (Economic)
- 4.9 percentage points more likely to feel that generally people can be trusted (Personal)
- 8.6 percentage points more likely to raise issues to decision-makers (Social)

compared to those who participate for one year or less.

The strongest evidence that being involved for longer is associated with better outcomes is found for *economic* outcomes. The exception in economic outcomes is for 'you or family gone without medicine', perhaps indicating that if medical needs are immediate, support is found irrespective of how long someone has been participating. For personal outcomes it does not hold for 'better off one year from now', 'valued & respected by family' and 'feeling satisfied with close relationships'. There are no outcomes that are significantly better for those who have participated for less time.

Greater impacts were seen in box 3 (comparing participants to non-participants), indicating it is participating in CCT activities that makes the biggest difference to people's lives. Additional benefits of participating for a longer period of time, although present and significant, are not as good as the benefits of participating compared to not participating.

We must acknowledge the potential of selection bias (limitations, section 6) when considering these findings relating to length of time involved. Perhaps individuals who get more benefits from the programme are likely to continue for longer than those who do not gain as much from it. In which case, the value to longer term participants may be higher not because their wellbeing increases after one year, but because those with lower wellbeing gains from the programme are no longer involved. There could be reverse causality; for example, earning more and being able to invest in assets (box 5) could make a person more able or motivated to continue being involved in CCT. Overall, there is enough qualitative evidence from Tearfund's other research[119] to corroborate these findings that the longer a community or a person is involved, the better the outcomes. However, we cannot rule out the chance that some bias may be present.

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[119] Tearfund (2021).

Answering question 3a: Do individuals who have been involved with CCT for a longer period of time experience improved wellbeing?

We observe that being involved for longer (more than one year) is associated with greater life satisfaction (+0.229). This is also found for 16 of our 22 measures across the economic, personal, social and spiritual domains, and particularly observed for economic outcomes.

7.2.4 Impact of individuals' frequency of involvement in CCT[120]

For most outcomes, those who participate more frequently have greater wellbeing than those who participate less frequently.

In table 15 we have split 'being in a CCT community' into those 'not involved' and the three categories of how regularly people participate, to test whether those who participate more frequently experience greater wellbeing outcomes.

Table 15: Regression coefficients indicating impact of frequency of participating on life satisfaction

Dependent variable: life satisfaction [scale 0–10]	Compared to control communities (model 1)	Compared to those who participate less than once a week (model 2)
Control communities	0.000	-1.301***
Not involved	0.754***	-0.547***
Less often than every month	1.266***	
Once or twice a month	1.316***	
Less than once a week (grouping of the two categories above)		0.000
At least once a week if not more	1.418***	0.117*
Observations	6,949	6,949
Adjusted R-squared	0.21	0.21

Notes: The dependent variable Y = life satisfaction on a scale of 0 to 10. Only the coefficient of the variable of interest is shown here. A coefficient of 0.000 means this is the base group other subgroups were compared to. Stars denote statistical significance: *p<0.1, **p<0.05, ***p<0.01. Control variables include age, gender, marital status, religion, demographic of households head, number of people in household, education level, level of disability, country, and whether the community is urban. Coefficients of other control variables can be shared on request. Blank spaces mean the respective variable was not included in that model.

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[120] The full results can be seen in the full regression output for Question 3b, here.

Model 1 in table 15 compares each category to control communities; those not involved have an associated increase in life satisfaction of 0.754.[121] We observe that as participation frequency increases, the coefficients increase, but we do not know whether they are statistically different from each other. Therefore, it is vital we use different base groups to determine this. Using different base groups indicated that the coefficients on different frequency categories are not statistically different from each other (not shown here). Since the coefficients on 'less often than every month' (1.266) and 'once or twice a month' (1.316) are more similar to each other than the coefficients on 'once or twice a month' and 'at least once a week if not more' (1.418), we group these first two frequencies, and compare that group to the most frequent participation (model 3).

Here we observe that **the most frequent participation in CCT activities (once or twice a week) is associated with a higher life satisfaction of 0.117 compared to those who participate less frequently**. This is significant but only at the 10% level, and equal in magnitude to half the associated increase of being involved for a longer period of time (0.229), implying longevity of involvement is twice as important as participating more regularly.

Table 15a: Summary of conclusion 4 in different countries and for different outcomes

Conclusion 4: *Compared to those involved less frequently than every week, those who participate at least every week experience higher life satisfaction*	
Does it hold for life satisfaction in different countries?	Rwanda∼, Sierra Leone∼, Tanzania ∼ , Zimbabwe∼
Does it hold for other outcomes?	Spiritual (0/2), Personal (1/8), Social (3/6), Economic (3/6)
Does the opposite hold for other outcomes?	Spiritual (2/2), Personal (1/8), Social (0/6), Economic (0/6)

Notes: ✔ = conclusion holds and is statistically significant, ∼ = insignificant results, ✗ = opposite conclusion holds and is statistically significant. (X/X) = number of outcomes for which conclusion holds and is statistically significant.

When splitting the sample by country, no significant conclusions can be drawn in terms of frequency.

Significant findings in other outcomes are shown in box 6 (seven positive and three negative relationships). (For the other 12 outcomes, no significant findings were observed.)[122]

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[121] This is a similar value to that in table 14. It is unlikely to be exactly the same due to the slight differences in the regressions (variables included and therefore sample size).

[122] The full results can be seen in the full regression output for Question 3b, here.

Box 6:

After accounting for other factors, those who participate in CCT activities at least every week are:

- 10.8 percentage points more likely to earn more or the same as last year (Economic)
- 3.1 percentage points more likely to never or rarely miss school (Economic)
- 3.4 percentage points more likely to be in a better financial situation next year (Economic)
- 0.062 associated increase in optimism about future – scale 0 to 5 (Personal)
- 4.8 percentage points more likely to work on a shared project (Social)
- 4.8 percentage points more likely to make decisions in the household (Social)
- 3.2 percentage points more likely to feel like people are there for me (Social)

And

- 3.4 percentage points *less* likely to feel confident they can cope with unexpected events (Personal)
- 1.7 percentage points *less* likely to agree that they can create change (Personal)
- 0.6 percentage points *less* likely to rely on faith for direction in life (Spiritual)

compared to those who participate less frequently than every week.

Overall, those who participate in CCT at least every week have a 1.8 percentage point higher likelihood of reporting positive outcomes, compared to those in CCT communities who participate less frequently.[123] For seven out of 22 outcomes, those who participate at least every week experience greater benefits compared to those who participate less frequently. This association is particularly strong for social and economic outcomes; these are more strongly associated with level of involvement in terms of both length of time and frequency. On the other hand, spiritual and personal outcomes are less associated with level of involvement; higher levels of some of these outcomes are even associated with less frequent participation. This could indicate that economic and social outcomes require more regular and intensive participation than personal and spiritual outcomes.

We must acknowledge the potential of selection bias (limitations, section 6) when considering these findings relating to frequency of involvement. Perhaps individuals who get more benefits from the programme are more willing to give their time and partake more often than those who do not gain as much from it. There could be reverse causality, for example earning more (box 6) could make a person have more free time to attend CCT meetings and activities. Overall, there is enough qualitative

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[123] See footnote 103. This estimated average effect includes all coefficients. Although some coefficients were insignificant, they are still the best estimate of that relationship.

evidence from Tearfund's other research[124] that a person who is involved more frequently experiences better outcomes to corroborate these findings, but we cannot rule out some bias.

Answering question 3b: Do individuals who take part in CCT more regularly experience improved wellbeing?

Participating more frequently (at least once a week) is associated with higher life satisfaction (+0.117) compared to those who participate less frequently. Frequency appears to be only half as important as participating for a longer period of time. In terms of other outcomes the evidence is mixed; more frequent participation appears more strongly associated with achieving social and economic outcomes.

7.2.5 Impact on CCT facilitators and how this spreads[125]

Positive impacts spread from CCT facilitator to church members, then on to the wider community.

Tearfund's theory of change for CCT outlines the assumption that the impact of CCT spreads from the facilitator to the church and on to the wider community:[126]

'Over time, a church's vision grows and its people recognise the importance of cooperating more closely with others. As transformation moves through the circles of influence, the impact of CCT is scaled up from change in individuals all the way to national change.'

In this section we are testing this hypothesis. We do this by utilising interaction terms again to see how the impact of church CCT maturity varies for different subgroups.

First, we observe how the impact of church CCT maturity on life satisfaction differs for those who are CCT facilitators and those who are not (see appendix 8 for tables and interpretation). We find that **facilitators experience their highest benefits when churches are in their first few years (0–2 years) of engaging in CCT (+1.618 life satisfaction) and this is higher than the benefits experienced by those who are facilitating in more mature CCT churches.**

Second, we observe how the impact of church CCT maturity on life satisfaction differs for those who are church members and those who are not (see appendix 9 for tables and interpretation). We find that **church members experience their highest benefits once their church has been engaged in the CCT process for 3–5 years. This is higher than the benefits experienced by church members in less mature (0–2 years) and most mature (5+ years) CCT churches.**

We then use these same interaction terms but instead use the 'non-church member' sub categories of church CCT maturity as our comparison groups (see appendix 9 for tables and interpretation). We find that **non-church members experience greater benefits when CCT has been running for longer (3–5**

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[124] Tearfund (2021).

[125] The full results can be seen in the full regression output for Question 4, here.

[126] Tearfund (2022).

and 5+ years). These three results are displayed in chart 5. Figures come from relevant tables in appendix 8 and 9.

Chart 5: Uplift in life satisfaction for different subgroups, by CCT maturity
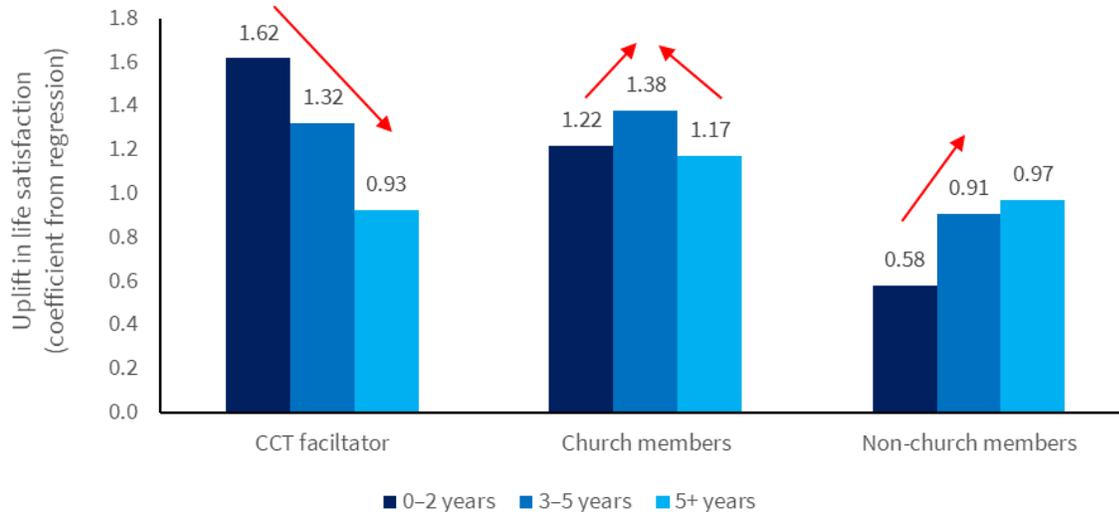
Chart 5 shows the associated increase in life satisfaction compared to respondents in control communities, after other influences are taken into account. Arrows in the chart indicate significant differences, as explained alongside each table in appendix 8 and 9. **For CCT facilitators the greatest positive impact is felt in the early period and by the later period the positive association is lower. For church members the biggest uplift comes in the middle period, and this is higher than the positive impact experienced in the early or later period. For non-church members a smaller impact is seen in the first period, and the positive association is higher thereafter.**

It is important to note here the relationship between church membership and participation in CCT activities. Church members are more likely to participate in CCT activities than non-church members, and therefore the differential between church members and non-church members in chart 5 is likely to be related to participation and not just church membership.

Answering question 4: Is the improved wellbeing created by CCT processes first experienced by facilitators themselves, and then spread into the church congregation? From there, does it spread into the wider community?

The simple answer is yes. Compared to control communities, the positive association of higher life satisfaction is always observed – for church facilitators, church members and non-church members, at every level of CCT maturity. The strength of these positive associations does appear to change over time for different subgroups. CCT facilitators experience the greatest positive association in the early

period, church members in the middle period, and non-church members in the middle and later period.

These findings can be seen as supportive of the idea that positive impacts do spread from the CCT facilitator to church members then on to the wider community, and is encouraging evidence of the assumptions outlined in Tearfund's theory of change for CCT. Given that estimates of life satisfaction change are then used to derive social value (section 8), this spreading effect applies to social value as well.

8.   Social value calculation

We will follow the five steps outlined in section 5.4 to calculate social value.[127] All reported benefits and costs are rounded to the nearest $10.

Step 1: Estimating individual-level change

Our regression model, which compares impact on life satisfaction for *those who participate in CCT activities and those who do not* (section 7.2.1), showed materially different results for the two groups. These were significant at the 1% level and allow for a conceptually easy comparison. There was not a clear trend between CCT maturity and life satisfaction (section 7.2.2). Observable differences in life satisfaction between those who had been involved for different lengths of time were rather small,[128] and observable differences between those who participate more or less regularly were even smaller and less significant (section 7.2.3). We are confident enough in our comparison to control communities (see limitations in section 6).

Therefore, we use the regression model in section 7.2.1 as the most appropriate model to indicate average **individual-level change in life satisfaction**. Our social values therefore assume the same individual-level change for 'participation,' regardless of frequency, duration or stage of CCT the community has reached.

The associated increase in life satisfaction for those *who participate in CCT activities* compared to *those in control communities* is 1.358 (table 12, section 7.2.1). Multiplied by our country-appropriate WELLBY value ($1,033, section 5.2) this implies **one person participating (however regularly) in CCT activities, compared to being in another community where CCT is not operating, is worth approximately $1,400 (£1,020) per year.[129]**

The associated increase in life satisfaction for those *who do not participate in CCT activities* compared to *those in control communities* is 0.771 (table 12, section 7.2.1). Multiplied by our country-appropriate WELLBY value ($1,033, section 5.2) this implies **one person being in a CCT community but not participating in CCT activities, compared to being in another community where CCT is not operating, is worth approximately $800 (£580) per year.**

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[127] Calculations for the social value can be seen [here](#).

[128] A difference of 0.229 between our two comparison groups. This is small compared to the differences observed between other subgroups.

[129] Monetary figures are appropriate to the year 2022. These should be quoted alongside the appropriate year, or discounted if applied to future years.

Step 2: Estimating community-level change (benefits)

A separate *CCT facilitator survey*[130] was conducted, with responses from 196 facilitators across all countries. This gives a response rate of 98 per cent of communities included in the original wellbeing survey, with no country having less than a 96 per cent response rate. It was completed within the same year (2022). Therefore, we are confident that additional information from the facilitator survey sufficiently represents the communities for which our WELLBY value was drawn.

For most values taken from this survey, two averages are calculated: one from all data points and one as a more conservative average, which excludes any values at least three standard deviations away from the mean.[131] These two average values are used as our upper and lower estimates.

Direct benefit of implementing CCT

Table 16: Calculating direct benefits per CCT community (2022)

	Lower estimate	Upper estimate
16.1 Average number of people who participated in CCT activities in the last year	86	128
Coefficient	1.358	1.358
Value per WELLBY	$1,033	$1,033
16.2 Direct social benefit for those who participate, per person per year	$1,400	$1,400
Direct social benefit for those who participate, per community per year (16.1*16.2)	**$120,400**	**$179,200**

CCT facilitators estimated how many people participated in CCT activities in the last year. Lower and upper average estimates were calculated, and each was multiplied by the social value of one person participating (calculated in step 1). **The social benefit (to society) of direct participation in CCT is estimated to be $120,000 to $180,000 per community per year.**

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[130] A summary of the data from the CCT facilitator survey can be seen here.

[131] These values could be considered anomalies and may overly bias the average value.

Indirect benefit of implementing CCT

Table 17: Calculating indirect benefits per CCT community (2022)

	Lower estimate	Upper estimate
17.1 Average number of people who participated in CCT activities in the last year	86	128
17.2 Average population size of the community in which CCT is taking place	6,626	6,626
17.3 Average number of people in the community who do not take part in CCT activities (17.2 minus 17.1)	6,540	6,498
17.4 Estimated proportion of population affected	43%	100%
17.5 Estimated population affected	2,812	6,498
Coefficient	0.771	0.771
Value per WELLBY	$1,033	$1,033
17.6 Indirect social benefit for those who do not participate, per person per year	$800	$800
Approximate indirect social benefit per community per year (17.5*17.6)	**$2,249,800**	**$5,198,400**

As explained above, averages taken from our CCT facilitator survey[132] were generally calculated as a value from all data points and a more conservative value. The exception here is our estimate of the typical population size of the community in which CCT is taking place. Our upper estimate here would have been 88,089, which is highly influenced by very high populations reported for some urban churches in Sierra Leone.[133] Therefore, our more conservative estimate of 6,626 is used for average population size (17.2). The estimated number of people who participate in CCT is taken away from this value, leaving the population size of non-participants potentially affected (17.3).

Our range of upper and lower estimates instead comes from the estimated proportion (17.4) of non-participants who are affected. The upper estimate assumes 100 per cent of non-participants are affected. Our lower estimate acknowledges that not all of the wider population would be affected, taking a lower proportion of 43 per cent. Estimating this proportion was beyond the scope of the project, so this comes from our closest proxy: the proportion of non-participants who have heard of

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[132] A summary of the data from the CCT facilitator survey can be seen here.
[133] Five churches in Sierra Leone reported community sizes between 2 and 6 million.

CCT (table 8, section 7.1.3). This may be an underestimate, since the CCT process results in community assets (such as a health clinic) that may benefit the whole community, without the knowledge that they came about through CCT. However, it could also be an overestimate, since it is from the sample of people who agreed to respond to the survey. Either way, it is our closest proxy for the proportion of the wider population who are affected by CCT. The wider social benefit (to society) of CCT is estimated to be $2.2 to $5.2 million per community per year.

Step 3: Estimating average inputs per community (costs)

Direct cost of implementing CCT activities

Direct costs are estimated through financial information on the cost of implementing CCT activities and estimating the monetised value of volunteer time, through a wage replacement method. These are displayed in table 18.

Table 18: Calculating direct costs per CCT community (2022)

	Lower estimate	Upper estimate
18.1 Tearfund and partner's spend, per community per year	$620	$620
18.2 Tearfund's labour cost, per community per year	$89	$89
Approximate direct financial cost, per community per year	**$709**	**$709**
18.3 Average number of hours CCT facilitator spends facilitating CCT activities, per facilitator per year (monthly converted to annual)	156	192
18.4 Average number of other volunteers (besides the CCT facilitator) who enable CCT to happen, per community per year	6	8
18.5 Average number of hours volunteers give to CCT activities, per volunteer per year (monthly converted to annual)	96	108
18.6 Average total hours given to CCT by volunteers, per community per year (18.4*18.5)	576	864
18.7 Average total hours given to CCT by volunteers and CCT facilitator, per community per year (18.6+18.3)	732	1,056
18.8 Hourly rate of volunteer's time	$1.4	$1.4

	Lower estimate	Upper estimate
Approximate value of volunteer hours given to CCT, per community per year	**$1,030**	**$1,480**
Approximate direct cost (financial plus volunteer time) of implementing CCT, per community per year	**$1,740**	**$2,190**

Notes: Values 18.3, 18.4 and 18.5 come from the CCT facilitator survey (n=196). 18.3 and 18.5 were asked per month, as an easier reference point, and then converted to annual figures. Volunteers include those who enable CCT activities to happen, but excludes the CCT facilitator.

Budget information was collected through Tearfund's central finance team. Salary information and the number of communities implementing CCT was collected through Tearfund country teams. Values 18.1 and 18.2 were calculated separately for the four countries (see appendix 10); the average is reported here. There is relative certainty in these direct spending and labour costs, so this average is used as both the lower and upper estimate.

Values 18.3, 18.4 and 18.5 (on number of volunteers and volunteer hours) are from the *CCT facilitator survey,*[134] with upper and lower estimates informed by two averages calculated: one from all data points and one as a more conservative average, which excludes any values at least three standard deviations away from the mean (as for benefits in step 2).

An estimate of hourly rate of volunteer time is calculated in relation to our estimate of median income in our four countries. Our ratio between UK median income and median income in our four countries (5.77 per cent, section 5.3) is applied to the ONS estimate of median gross annual earnings of all UK employees to estimate median income in our four countries: $2,064.[135] This is then converted to an hourly rate of $1.4 per hour.[136]

Adding the direct financial cost and estimate of volunteer time, **the direct cost of implementing CCT activities is estimated to be $1,700 to $2,200 per community per year.[137]**

Indirect costs mobilised through CCT

Information on intermediate outputs (resources mobilised by communities) was collected through the *CCT facilitator survey,*[138] with upper and lower estimates informed by two averages calculated: one from all data points and one as a more conservative average, which excludes any values at least three standard deviations away from the mean (as for benefits in step 2 and volunteer time in step 3).

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[134] A summary of the data from the CCT facilitator survey can be found here.

[135] £25,971 (Office for National Statistics (2022)*0.0577 = £1,772. Then *1.37753 (yearly average exchange rates to year end 2021).

[136] In the absence of more appropriate data in our four countries, we assume 210 working days a year and seven working hours in a day.

[137] There are also overhead costs from Tearfund which are necessary (such as HR, IT etc), but it was considered beyond the scope of the project to account for these.

[138] A summary of the data from the CCT facilitator survey can be found here.

Table 19: Calculating indirect cost per CCT community (2022)

	Lower estimate	Upper estimate
19.1 Average monetary contributions from the church and community towards CCT, per community per year	$1,064	$1,744
19.2 Average value of goods from the church and community put towards CCT, per community per year	$1,036	$1,368
19.3 Average value of labour from the church and community put towards CCT, per community per year	$796	$999
19.4 Average mobilised funds that the church and community have acquired for CCT initiatives from other sources (eg government, private companies, NGOs other than Tearfund), per community per year	$135	$364
Approximate indirect cost of intermediate outputs, per community per year, rounded	**$3,000**	**$4,500**

Notes: Values 19.1, 19.2, 19.3 and 19.4 come from the CCT facilitator survey (n=196). Data from Rwanda, Sierra Leone and Tanzania were converted using US Treasury annual exchange rates to year end 2021.

Considering mobilised resources, **the indirect costs of implementing CCT is estimated to be $3,000 to $4,500 per community per year.**

Box 7: Comparing direct and indirect costs

Comparing estimated direct costs (including volunteer time) and indirect costs (mobilised resources), we can calculate that:

For every $1 dollar invested in implementing the CCT process, approximately $1.9 is secured in mobilised funding ($1.4–$2.6 using upper and lower estimates).

34 per cent of total inputs are from Tearfund, partners and volunteer time (using midpoints).

Mobilised resources make up 66 per cent of total inputs (using midpoints).

Step 4: Calculating Net Social Benefit and Social Benefit-Cost Ratio

In table 20 we've calculated the total benefits (from step 2) and total costs (from step 3).

Table 20: Calculating total costs and benefits per community (2022)

	Lower estimate	Upper estimate
Direct social benefits	$120,400	$179,200
Indirect social benefits	$2,249,800	$5,198,400
Approximate total benefits	**$2,370,200**	**$5,377,600**
Direct cost of implementing CCT (financial plus volunteer time)	$1,740	$2,190
Indirect cost of mobilised resources	$3,000	$4,500
Approximate total costs	**$4,740**	**$6,690**

Our lower estimate of indirect social benefits is much larger than even our upper estimate of direct benefits (by a factor of over 12). We are less confident in our assumption that CCT impacts the wider community, even applying it to only 43 per cent (our lower estimate) of the wider community. This large difference is not as pronounced when comparing direct and indirect costs.

Therefore, in order to avoid overstating the benefits of CCT and presenting implausibly high benefit-cost ratios, we report our main Net Social Benefit (NSB) and Social BCR using *direct benefits only* on one hand and *total costs (both direct and indirect)* on the other. To these we apply the formula mentioned in step 4 of section 5.4. Other options are considered briefly in step 5.

Box 8: Main calculation of NSB and Social BCR using *direct benefits* and *total (direct + indirect) costs*

Social benefit of CCT

$120,400–$179,200

\-

Cost of
implementing CCT

$4,740–$6,690

=

Net Social Benefit

$113,700–$174,500

$$\frac{\text{Social benefit of CCT}}{\text{Cost of implementing CCT}} = \text{Social Benefit-Cost Ratio (Social BCR)}$$

Social benefit of CCT

$120,400–$179,200

Cost of implementing CCT

$4,740–$6,690

=

Social Benefit-Cost
Ratio (Social BCR)

18.0–37.8

Our main calculation of Net Social Benefit and Social Benefit-Cost Ratio is calculated considering *direct benefits* (participating in CCT compared to communities where CCT is not implemented) and *total costs* (costs to Tearfund, partners, volunteers *and* mobilised resources in the community). **Therefore, the *Net Social Benefit* of implementing the CCT process is approximately $114,000 to $175,000[139] per community per year (considering participants only).** The Social Benefit-Cost Ratio of implementing CCT is between 1:18 and 1:37.8.[140] **For every $1 invested (by Tearfund, facilitators, volunteers and the community) in CCT, approximately $18 to $38 may be created in social value to society (considering participants only).[141]**

Step 5: Sensitivity analysis of Social Benefit-Cost Ratio

There are many parameters to consider in the Social Benefit-Cost Ratio. In this section we consider what the Social BCR calculation in box 8 would be if other parameters had been chosen.

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[139] This Net Social Benefit per community could be multiplied by the number of communities to estimate country-level totals. This report has gone as far as calculating a NSB per community per year (2022), which can then be applied to the most recent and accurate data about the number of communities currently in the CCT process. The number of communities implementing CCT at any one time is constantly changing and there were some discrepancies in the data available, so any country-level estimate reported here would quickly be out of date.

[140] If one single ratio is needed, it would be fair to take the midpoint of these values: 1:27.9 or rounded to 1:28.

[141] The method chosen for our Social BCR aimed to reflect, as far as possible, the different parties who contribute to the inputs to CCT (Tearfund, partners, volunteers and the community). The method was not aiming to produce a return on investment for funds donated directly to Tearfund, for example for fundraising purposes. If the ratio is used in this way, it is important to note that a) volunteer time is included in the direct costs (in this way, the ratio would understate the return for funds donated directly to Tearfund), and b) overheads are not included in costs or indirect costs (in this way, the ratio would overstate the return for funds donated directly to Tearfund).

Using a more conservative estimate of the direct benefits (and including direct and indirect costs)

If the individual-level benefit of participating in CCT compared to *non-participants in CCT communities* (rather than compared to non-CCT communities (the coefficient of 0.588)), total direct benefits would be $52,200 to $77,700. Using our direct and indirect costs above ($4,740–$6,690), this perspective results in a Social BCR of 7.8 to 16.4. However, we've eliminated the comparison to control communities.

Including direct benefits and direct costs only

If indirect costs mobilised and secured by the community ($3,000 to $4,500) were *not included,* total direct costs would be $1,700 to $2,200. Using our direct benefits above ($120,400–$179,200), this tighter definition of inputs results in a Social BCR of 55 to 103. However, we've excluded inputs (mobilised resources), which are vital to the CCT process.

Including direct benefits and direct costs to Tearfund only

CBA best practice is to consider all costs to any part of society needed for CCT to take place, irrespective of where these come from.[142] Hence, our main CBA calculation includes inputs from facilitators and the community as well as Tearfund. We appreciate that some audiences may wish to consider the inputs from Tearfund *only*. If indirect costs mobilised and secured by the community ($3,000 to $4,500) *and* volunteer time ($1,030 to $1,480) were *not included*, total direct costs would be $709. Using our direct benefits above ($120,400–$179,200), this even tighter definition of inputs results in a Social BCR of 170 to 253. However, for this Social BCR we've excluded inputs (mobilised resources *and* volunteer time), which are vital to the CCT process. If this Social BCR is used, it should acknowledge that the $1 invested by Tearfund is coupled with an additional $1.5 to $2.1 of volunteer time per community,[143] and an additional $4.2 to $6.4 from mobilised resources per community,[144] in order to realise the benefits ($5.7 to $8.5 of community inputs in total).[145]

Including direct and indirect benefits and direct and indirect costs

If the estimated wider benefits to non-participants in the community ($2.2m to $5.2m) *were included* in the calculation, total benefits would be $2.4m to $5.4m. Using our direct and indirect costs above ($4,740–$6,690), this wider definition of benefits results in a Social BCR of 354 to 1,135. However, we are likely overclaiming the wider benefits by applying our observed benefit to large parts of the local community.

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[142] Best practice is also to include all benefits; however, our main calculation excludes the wider benefit as our estimates of effect size and number of people affected are less reliable. For completeness, we do consider a perspective with all benefits in the sensitivity analysis as well.

[143] Volunteer time divided by Tearfund inputs. 1,030/709 = 1.5 and 1,480/709 = 2.1.

[144] Mobilised resources divided by Tearfund inputs. 3,000/709 = 4.2 and 4500/709 = 6.4.

[145] If one single ratio is needed, it would be fair to take the midpoint of these values:; 1:7.1 or rounded to 1:7.

Answering question 5: What is the overall social value of CCT processes?

Overall, we are relatively confident in our estimates of direct costs and benefits of CCT. We have also estimated indirect costs (those mobilised by the community) and indirect benefits (those applicable to the wider community). In order to not overstate the benefits of CCT, we report our main social value calculation using direct benefits only on one hand and total costs (direct and indirect, hence costs to Tearfund and implementing partners and those mobilised by the community) on the other hand. These figures provide a snapshot per year (based on 2022 price and income levels) and are in US$.[146]

The Net Social Benefit of implementing the CCT process is approximately $114,000 to $175,000 per community per year. The Social Benefit-Cost Ratio of implementing CCT is between 18 and 38.[147] For every $1 invested (by Tearfund and the community) into CCT, approximately $18 to $38 may be created in social value to society, implying a very cost-effective way of achieving improved wellbeing in this context.

This result is based on wellbeing levels of CCT participants compared to control communities who do not yet participate in CCT but will do so in the future. We also consider a more conservative estimate of the benefit using the comparison between participants and non-participants within CCT communities. This gives a social return of $8 to $16 for every $1 input. This can be considered a more conservative estimate (it eliminates one potential source of selection bias – systematic bias in the selection of communities to first undergo the CCT process). However, this is likely an underestimate of the ratio – in eliminating selection bias, we also eliminate the ability to capture the benefits felt by the wider community.

How to treat indirect costs and benefits is tricky in this context. Including wider benefits ($2.2m to $5.2m) results in a much greater social return estimate (BCR of 350 to 1,100), showing that the CCT process is even more valuable if we consider wellbeing impacts on the wider community; but the number of people affected by these wider impacts is more difficult to estimate accurately, and therefore we do not have sufficient confidence in the plausibility of the results from this configuration.

Considering direct benefits only against direct costs only, thus excluding from our main configuration the indirect costs of $3,000 to $4,500, also results in a higher net benefit and BCR (55 to 103), though not as high as the figure stated in the previous paragraph. On balance we suggest using the figures in box 8 as the headline result.

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[146] Reporting the figure for different years should use discounting. Reporting the figure in sterling should use yearly average exchange rates to year end 2021 (£1 = $1.37753).

[147] If one single ratio is needed, it would be fair to take the midpoint of these values: 1:27.9 or rounded to 1:28.

9.   Conclusions

Descriptive statistics showed that all of our outcomes (across the economic, personal, social and spiritual domains) are more positive in CCT communities than in control communities, and these differences are statistically significant. Regression analysis allows us to isolate and estimate the relationship between involvement with CCT and various outcomes, after accounting for other factors. Conclusions in the rest of this section are drawn from regression analysis, which means these impacts are, as far as possible, attributable to CCT and not to other factors controlled for in the models.

People in CCT communities experience better wellbeing outcomes than those in non-CCT communities

We observed that being in a CCT community is associated with 1.185 higher life satisfaction (on a 0 to 10 scale) compared to non-CCT communities. This is found not only for our key wellbeing measure (life satisfaction), but also for all our measures across the economic, personal, social and spiritual domains. In CCT communities, better outcomes are experienced in multiple aspects of people's lives including working together for a cause, helping others, and increasing financial stability. On average, people in CCT communities have a 13.9 percentage points higher likelihood of reporting positive outcomes, compared to those in non-CCT communities.

The positive associations with increased wellbeing are observed most for those who participate in CCT activities

The positive association with life satisfaction is greater for those who participate than those who do not (1.358 compared to 0.771); within a CCT community, participating in CCT is therefore associated with 0.588 higher life satisfaction. On average, those who participate in CCT have a 8.5 percentage points higher likelihood of reporting positive outcomes, compared to those in CCT communities who do not participate.

Participating for longer or more frequently is associated with higher life satisfaction, and longevity of involvement appears twice as important as participating more regularly

Participating for more than one year is associated with 0.229 higher life satisfaction, and on average 2.9 percentage points higher likelihood of reporting positive outcomes, compared to those in CCT communities who participate for one year or less. Participating more frequently (once or twice a week) is associated with a higher life satisfaction of 0.117 compared to those who participate less frequently (approximately half the wellbeing difference associated with being involved for a longer period of time, 0.229).

Positive associations with increased wellbeing are observed even for those who participate the least

The regression differential between participating and not participating in CCT within a CCT community is stronger (0.588 higher life satisfaction) than the differential between being involved for a longer compared to shorter time (0.229) or participating more frequently compared to less frequently (0.117). Positive associations with life satisfaction are also observed for those who have been involved for the shortest time (one year or less), and for those who participate infrequently (less than once a month), compared to those within CCT communities who do not participate at all.

More intense participation is particularly important for achieving economic and social outcomes

Participating more frequently appears more important for achieving economic and social outcomes. Participating for longer appears more important for achieving economic outcomes.

The positive impacts are spread to the wider community

Being in a CCT community but not participating in CCT activities is associated with 0.771 higher life satisfaction compared to being in a community from the control group. Multiple aspects of the lives of non-participants are improved (observed for 20 out of 22 outcomes). Notably, increased support from those around them is observed. On average, even non-participants have a 7.7 percentage points higher likelihood of reporting positive economic, social, personal or spiritual outcomes, compared to those in non-CCT (control group) communities.

Evidence supports the idea that positive impacts may spread from the CCT facilitator to church members then on to the wider community, as outlined in Tearfund's theory of change. CCT facilitators experience the greatest positive impact in the early period, church members in the middle period, and non-church members in the middle and later period.

Individuals in communities at all maturity levels of the CCT process experience greater wellbeing, but the effect size as churches mature through the process differs by outcome

Across all levels of CCT process maturity, individuals in the community have greater wellbeing outcomes than those in non-CCT communities. This is found not only for our key wellbeing measure (life satisfaction), but also for all our measures across the economic, personal, social and spiritual domains. Compared to control communities, the positive impacts of being in a CCT community are always observed – for church facilitators, church members and non-members at every level of CCT maturity.

According to our key outcome measure of life satisfaction, benefits peak for churches of middle maturity in the CCT process (3–5 years), but for most other outcomes, benefits observed at middle maturity are also observed at five years and beyond. The strongest observed impacts appear to change with different levels of CCT maturity. This pattern of the effect size of different categories of

CCT maturity on different outcomes makes intuitive sense, and resonates with the timeline of the CCT process; positive collaboration-type outcomes (influencing decisions and feeling helped by others) are observed at the start of the process and remain, improved relationships and increased voice are observed once churches have engaged in CCT for a longer period of time, and more visionary outcomes (such as raising issues to decision-makers and creating change) associations are greatest where churches and communities have engaged for more than five years.

CCT creates social value in the community

Calculating the social value of CCT processes is not straightforward, given the (indirect) costs of resources mobilised by communities, and the potentially very large benefit to the wider community. We calculate the *Net Social Benefit* of implementing the CCT process as approximately $114,000 to $175,000 per community per year. We calculate the *Social Benefit-Cost Ratio* of CCT between 18.0 and 37.8.[148] Therefore, for every $1 invested (by Tearfund and the community) to implement the CCT process, approximately $18 to $38 is created in social value to society, implying CCT is a very cost-effective way of achieving improved wellbeing in this context.

In order to not overstate the benefits of CCT, we report this calculation using *direct benefits* and *total costs* (hence 'Tearfund *and* the community'). As this does not include indirect benefits, it is likely to be an underestimate of the overall value created. These figures provide a snapshot per year (in 2022 price and income levels) and are in US$.[149]

Evidence of an impactful change for individuals, church congregations and communities, in improved wellbeing (alongside other key economic, personal, social and spiritual domains)

Considering our original hypothesis, we have found evidence of significantly higher levels of wellbeing and other outcomes for individuals, church congregations and communities linked to CCT. Strictly speaking, direct causal statements should be avoided. This is due to the high technical standards we have held ourselves to. We have done everything possible to address potential selection bias and omitted variable bias (although both are impossible to completely eliminate). However, our conclusions from our cross-sectional analysis are compelling, consistent and backed up by qualitative evidence in Tearfund's theory of change for CCT. Not only are CCT communities better off than our best comparative communities, but the positive associations are also observed most for those who participate in CCT activities and are higher still for those who participate for longer or more frequently.

Positive impacts appear to spread from the CCT facilitator to church members, then on to the wider community as well.

We have come up with a list of actions that would ensure even higher validity for future studies, especially including more community-level control variables (see appendix 5). Nonetheless, evidence suggests the CCT process is a cost-effective way of achieving improved wellbeing in this context. It is

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[148] If one single ratio is needed, it would be fair to take the midpoint of these values: 1:27.9 or rounded to 1:28.

[149] Reporting the figure for different years should use discounting. Reporting the figure in sterling should use yearly average exchange rates to year end 2021 (£1 = $1.37753).

clear the CCT process helps to mobilise resources in the community. **The high social value, and positive outcomes associated with CCT that are sustained throughout the process, supports the case for continuing to invest in the CCT process in these communities, and expand it in comparable contexts.**

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Appendices

1 Criteria for country selection for the research

a) The CCT process is currently being implemented at scale in the country. This means it is not limited to a few localised places, but is at regional or national scale.

b) Maturity of the CCT process – there should be sufficient churches that have been through the whole cycle (generally four or more years).

c) The country team has an existing evidence base with a good monitoring system in place to track outputs and outcomes.

d) There is a clear Theory of Change/understanding of the exact CCT process being used.

e) Capacity of the country team to engage with the study and recruit, deploy and manage local enumerators (for example from universities, research organisations or researcher networks).

f) Ability of the country team to calculate the financial investment into CCT.

g) Freedom/ability for impact data generated (including the role of the church) in the country to be communicated widely and without restriction.

2 Participation information sheet

My name is [enumerator's name] and I am working on behalf of Tearfund. You may have heard of Tearfund, or you may have heard of our partner – [relevant partner name]. Together, Tearfund and [partner name] support a process called church and community transformation (CCT). We are visiting 50 communities in Tanzania, including this one today, to conduct research into the impact of CCT on the wellbeing of individuals and communities.

Invitation to take part

We would like to invite you to participate in this research study by responding to a short survey. If you do choose to participate, I will ask you questions about various aspects of your life, including your wellbeing, material assets, personal relationships and social connections. The questions are not specifically about CCT, so you can answer them even if you have not heard of CCT. However, if I ask you a question that you do not understand or are not comfortable answering, you can ask me to clarify it. The survey will take approximately 15 minutes to complete. I will record your responses in an online application.

There are a few more things I need to tell you about before you decide whether to take part or not, including how we will use the information you share with us. Is that okay?

How we will use the information

If you take part, the information that you provide will be used only for the purpose named above – assessing the impact of CCT. It will become part of a large electronic dataset that will be stored safely and securely, and only for as long as it is being used for the purpose. The dataset itself will only be accessible to authorised members of the research team, who will analyse it to understand the impact of CCT. Then we will write a report about our findings. We will publish the report online by the end of this year, on the following websites: www.tearfund.org and www.learn.tearfund.org

Ultimately, we will be able to use the findings to promote support for CCT and introduce it to more churches and communities in Tanzania and beyond.

Any personal data (information that may identify you) that we collect today will be known only to authorised members of the research team and not disclosed publicly. Nobody outside of the research team will be able to link the answers that you give back to you.

Certainly none of your personal data will be included in the report that we publish on our websites: it will not be possible for anyone to identify you from the report.

Your right to opt out

Your participation in the study is voluntary. I am going to ask you whether you are happy to take part, and it is fine for you to answer 'no' – we will not collect any data from you and there will not be any negative consequences. If you say 'yes' and we go ahead with the survey, you can still change your mind at any time and ask me not to continue. Please also feel able to ask me questions at any time. Do you have any questions for me at the moment?

Consent questions

Do you confirm that you have understood the information provided about the study?	▢ YES	▢ NO
Do you understand that your participation is voluntary and that you are free to withdraw at any time without giving a reason and without any negative consequences?	▢ YES	▢ NO
Do you agree to take part in the study?	▢ YES	▢ NO

How to contact us

All individuals involved in the study shall be treated equally, irrespective of race, ethnicity, gender, religion/or none, sexual orientation, profession, lifestyle, marital status, age, community background or disability. No one will be judged or discriminated against on the basis of any aspect of their identity.

If this has not been your experience, or you feel any negative effects as a result of participating in this study, you should report it immediately. This might include feeling bullied or harassed, or simply more at risk as a result of participating. You can contact us at safeguarding@tearfund.org or otherwise contact the country director of our Tearfund [country] office, who is not a part of the research team:

 Name:

 Email:

 Phone number:

We also understand that you may have other questions or comments about your participation in the project. If that is the case, at any time, please get in touch with the following member of the research team:

 Name:

 Email:

 Phone number:

3 Explanation of regression analysis and assumptions

A regression tells us how a collection of explanatory variables (X_1, X_2, X_3 etc) influences a dependent variable (Y). More specifically, it estimates how a change in one of these Xs, when all other Xs are kept the same, impacts the value of Y. This is done by estimating the following equation:

Equation 1: $Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \ldots \beta_n X_{ni} + \mu_i$

where Y_i is the dependent variable, β_0 is the intercept, X_{1i} is our independent variable of interest, $\beta_2 X_{2i} + \ldots \beta_n X_n$ are other explanatory variables that also might affect Y_i, β are the slope coefficients for each explanatory variable, μ_i is the error term, and $_i$ denotes that there are multiple observations.

Imagine looking only at Y_i and X_{1i}, we could draw a line of best fit (like the chart to the right). β_0 gives the estimate of Y if X was 0. The line shows our best estimate of the relationship between X and Y; what happens to Y if X increases by one point is therefore shown by our coefficient of interest, β_1.
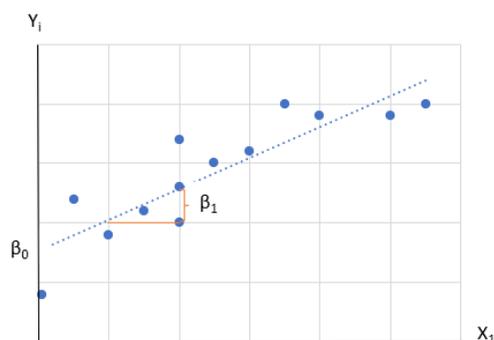
Multiple linear regression analysis estimates the β coefficients (in equation one) of different X explanatory variables all at once, so our β coefficients show the relationship between our explanatory variables of interest on the outcome variable, once taking into account other observable factors.

A regression with interaction terms would estimate the following equation:

Equation 2: $Y_i = \beta_0 + \beta_1 X_{1=no} X_{2i} + \beta_2 X_{1=yes} X_{2i} + \ldots \beta_n X_{ni} + \mu_i$

This gives us two different coefficients: β_1 for the impact of X_2 on Y, when $X_1 = 0$ (no), and β_2 for the impact of X_2 on Y, when $X_1 = 1$ (yes).

Linear regression assumptions

In order for linear regression estimation to both a) be possible, and b) produce meaningful estimates for inference and hypothesis testing, a series of assumptions must hold:

a) **A linear relationship between the outcome (dependent variable) and explanatory (independent) variables** – since we are fitting coefficients to the linear model equation described in (1) above, this equation must be a truthful description of the relationship between the outcome and explanatory variables. If the true relationship is of a different nature (eg polynomial, exponential, piecewise or completely irregular), fitting a linear model will not be able to approximate the true relationship.

b) **No perfect multicollinearity** – this means that we cannot have an explanatory variable that is identical to another (or scaled by a constant factor, or to a sum/difference of other explanatory

variables (scaled by a constant factor). This is a technical mathematical condition required to have a unique solution for the linear regression coefficients. Otherwise, it would be possible to change the coefficients while obtaining the exact same outcomes for any possible values of the independent variables.

c) **Random sampling** – to be able to make inference about the underlying population based on the sample on which one performs regression analysis, the sample must be a random draw from the population (also referred to as 'representative' of the population). This is required to be able to apply statistical theorems (the Law of Large Numbers and Central Limit Theorem) which show that the estimated coefficients from the regression based on the sample will approximate population parameters as the sample grows larger.

d) **Exogeneity of the error term** – apart from the terms explained by the independent variables and their coefficients, everything else (captured by the term μ in (1)) must be a random variation in the outcome, unrelated to the independent variable. The regression estimation assumes this by default; therefore, if this actually does not hold in the population, the resulting regression coefficients will be **biased** (ie different from the true relationship in the population). There are multiple reasons why this may not hold, the most popular being selection bias, omitted variable bias, and reverse causality.

e) **Homoscedasticity** – this is the assumption that the error term μ has constant variance. It is only required to reduce the variance of the linear regression estimator, thus making it efficient.

We can discuss the extent to which these assumptions hold for our data.

We cannot know for sure whether the relationship between the outcomes and our explanatory variables (CCT participation and demographic controls) is linear. However, we get around this somewhat thanks to the fact that all the variables included in the regression are categorical (that is, only being able to take a small number of different values). This adds a level of flexibility to the model because each regression coefficient describes the relationship with a variable that can only be in two possible states: 1 (the respondent is in this category) and 0 (the respondent is not in this category). One single coefficient (representing the difference in the outcome between the two states) plus a constant term is sufficient to describe ANY possible relationship of an outcome with a variable that only has two possible states.

The no perfect multicollinearity assumption clearly holds – otherwise regression coefficients simply cannot be produced. Statistical software packages such as STATA automatically remove the variables that cause perfect multicollinearity (such as base/reference levels of any categorical variable or a category that is never encountered in the data).

While we cannot ensure perfectly random sampling, the data-collection effort in this project was sufficiently advanced to ensure a relatively high degree of sample representativeness. A random sampling technique was used for CCT communities. A stratified sampling technique was used within communities, enabled by a considered mobilisation strategy; good cooperation by Tearfund partners,

CCT facilitators and the participating communities; recruitment; and professionally training paid enumerators. In addition, a large sample size reduced the influence of sampling errors.

Exogeneity of the error term is the trickiest assumption to assess – it is untestable in practice and can only be discussed using theoretical reasoning. The control variables were chosen following established guidelines in the wellbeing economics literature (see below) to reduce the amount of omitted variable bias influencing the outcome. In spite of the considerable data collection and sampling efforts, one cannot fully rule out selection bias (that is, if happier people or people who benefited more from the programme were more likely to respond to the survey, or more likely to participate in CCT in the first place). Selection effects are very difficult to measure (they involve comparing your sample to someone you have no data about) and practical methods to fully account for selection effects do not exist (other than a double-blind randomised control trial with perfect compliance, which is impractical). We believe our research design is close to the maximum of what is practically feasible to produce the best possible estimates in our context.

Selection of the model and explanatory variables

Control variables are included in the model equation (1) to capture the effects of selection bias in the respective coefficients of the control variables, and therefore prevent as many demographic factors as possible from affecting the estimate of the coefficient of interest β_1 of the key explanatory variable X_1. There is no well-established standard or consensus in the literature regarding what demographic variables are necessary or sufficient to include in a wellbeing regression. It is generally a trade-off between bias mitigation and data availability in population surveys as well as model overfitting. Most studies mentioned in the literature include some combination of age, gender and income, but this accounts only for a small proportion of the variance in wellbeing. Fujiwara and Campbell (2011) provide a list of the most frequent determinants of wellbeing used in the literature:

- Income
- Age
- Gender
- Marital status
- Educational status
- Employment status
- Health status
- Social relations
- Religious affiliation
- Housing and environmental conditions and crime levels in the vicinity
- Number of children and other dependents (including caring duties)
- Geographic region
- Non-market good being valued
- Personality traits (such as extroversion)

While we had the freedom to choose what demographic control variables to ask in our bespoke survey, we considered the list above, as well as what is generally collected in large, nationally representative

surveys in the UK and other OECD countries, but also its adaptability to our target countries in Africa and the CCT context in particular. This led to a slightly reduced version of the list being used, as some questions were either too sensitive, too difficult to answer without confusion, or inapplicable to the context.

4 Estimating the ratio between UK median income and our four countries

Ratios of median income proportionate to reported value for UK

	Daily median income, 2020 or later	Median income, March 2021	Median salary, 2023	Daily median income, 2011/2012	Average ratio to UK median income
Source	Wise Voter	World Population Review	Salary Explorer	Centre for Global Development	
UK value reported	$45	$14,793	£68,000	$37.8	
Calculated ratio of reported country value to reported UK value					
Rwanda	0.0460	0.0420	0.0896	0.0423	0.0550
Sierra Leone	0.0658	0.0517	0.0393	0.0489	0.0514
Tanzania	0.0518	0.0475	0.0722	0.0529	0.0561
Zimbabwe	0.0589	0.0630	0.0828	-	0.0682

5 Recommendations on methodology

If repeating similar research, the following points should be considered:

- There is a chance that asking about involvement with CCT at the start of the survey influences respondents' answers. It would be preferable to ask first about demographics, life satisfaction and other outcomes, with questions about participation in CCT coming at the end of the survey.
- The mobilisation strategy and survey stratification in CCT communities specified that sampling of non-participants in CCT communities was optional, and the team in Rwanda did not take up this option. It would be valuable to specify more precisely this requirement.
- More community information could be captured (such as influences of other development actors, external shocks etc) and used as additional control variables. Additionally, data at regional, district and province level could be appended.
- Similar studies could consider a pre and post comparison – assessing wellbeing and other outcomes in the *same* communities, before and after they have implemented CCT. Theoretically this would provide more robust evidence, as it would eliminate selection bias of the CCT communities compared to control communities. (In effect the 'pre' already exists in the current control communities, so could be achieved by revisiting these after they have implemented the CCT process.) However, to include the longer term perspective (as CCT is a long process), these pre and post comparisons would need to be separated by a number of years, or perhaps include multiple check-in points. An advantage of the study design used was the ability to consider the longer term aspects (by considering impact for churches at 5+ years of maturity).
- This study presents a 'snapshot' of the benefits and costs in one year, which may not present the full picture. Further work could assess the lifetime costs and benefits of a CCT process and discount these.

6 Full results for first regressions (table 12)

Regression coefficients indicating impact of being in a CCT community on life satisfaction

	Basic model (1)	With interaction variables (2)
Control communities	0.000	0.000
Being in a CCT community	1.185***	
Being in a CCT community, does not participate in CCT activities		0.771***
Being in a CCT community, does participate in CCT activities		1.358***
Age	-0.012	-0.016
Age squared	0.000*	0.000**
Female (compared to male)	0.179***	0.202***
Married or living with partner (base group)	0.000	0.000
Divorced	-0.183	-0.159
Separated	-0.259**	-0.276**
Widowed	-0.077	-0.071
Single	0.110	0.125
No religion	0.000	0.000
Christian	0.202	0.205
Muslim	-0.350	-0.205
Any other religion	0.050	-0.103
Male household head (base group)	0.000	0.000
Female household head	-0.273***	-0.275***
Male and female together head up household	0.047	0.057

	Basic model (1)	With interaction variables (2)
Child household head	-0.569*	-0.496
Other household head	-0.327**	-0.322**
0–5 in household (base group)	0.000	0.000
6–10 in household	0.084	0.085
11–15 in household	0.130	0.116
16+ in household	0.091	0.104
No formal schooling or informal schooling only	-0.343***	-0.323***
Some primary schooling	-0.158*	-0.152*
Intermediate school or some secondary/high school	0.018	0.034
Secondary/high school completed (base group)	0.000	0.000
Post-secondary qualifications other than university	0.310***	0.252**
University completed	0.544***	0.541***
Postgraduate	0.796**	0.764**
In paid work (as an employee, or working for your family)	0.413***	0.382***
Self-employed	0.288***	0.289***
Subsistence farmer	0.122*	0.114*
In education (not paid for by employer) even if on vacation	0.524***	0.502***
Unemployed	0.062	0.084
Not working – permanently sick or disabled	-0.096	-0.057
Retired	0.466***	0.414**
Doing unpaid housework, looking after children or others	0.335***	0.365***
No disability (base group)	0.000	0.000

	Basic model (1)	With interaction variables (2)
Yes, but disability does not affect	0.024	0.052
Yes, disability affects a little	-0.013	-0.004
Yes, disability affects a lot	-0.271***	-0.249**
Prefer not to say (disability)	-0.486**	-0.355
Rwanda (base group)	0.000	0.000
Sierra Leone	0.292***	0.395***
Tanzania	-0.419***	-0.327***
Zimbabwe	-0.116	0.058
Rural (base group)	0.000	0.000
Semi-urban	-0.157**	-0.171**
Urban	0.089	0.179***
Often gone without food	-0.761***	-0.732***
Sometimes gone without food (base group)	0.000	0.000
Rarely gone without food	0.346***	0.326***
Never gone without food	0.942***	0.916***
Constant	3.255***	3.237***
Observations	7,417	7,212
Adjusted R-squared	0.198	0.211

Notes: The dependent variable Y = life satisfaction on a scale of 0 to 10. Each column represents a separate regression model. Stars denote statistical significance: $*p<0.1, **p<0.05, ***p<0.01$. Only the coefficient of the variable of interest is shown here. Control variables include: more specific gender categories (which had extremely low count). Blank spaces mean the respective variable was not included in that model. A coefficient of 0.000 means this is the base group other subgroups were compared to.

7 Questions in survey that were not considered outcomes

Outcomes, treatment compared to control

	Control communities	CCT communities	All
A2. During the past year, which of the following did your family do? (tick all that apply)			
Saved money	33.3%	57.5%	52%
Spent savings	44%	62%	57.9%
Borrowed money	42.7%	52.1%	49.9%

	Control communities	CCT communities	All
A4. Who usually decides how money is spent in your household?			
You	32.2%	29.3%	30.0%
Your partner/spouse	10.6%	10.3%	10.4%
You and your partner/spouse jointly	33.2%	45.8%	43.0%
You and someone else	7.8%	5.9%	6.4%
Other	16.2%	8.6%	10.3%

	Control communities	CCT communities	All
F3. In your community, who provides care for the vulnerable? (tick all that apply)			
Private companies/for-profit organisations	21.5%	33.3%	30.6%
Religious organisations, church	68.0%	87.7%	83.2%
Family, relatives or friends	67.2%	78.4%	75.9%
Government	61.2%	71.5%	69.2%
Non-government organisation (NGO)	46.0%	59.8%	56.7%
Civil-society organisation (CSO)	27.3%	40.1%	37.2%

Notes: Statistical difference is not tested and reported as these were not considered outcome measures.

A2: it is not clear what the 'good' and 'bad' outcomes are from among the answer options.

A4: it was not considered clear enough what a 'good' or 'bad' outcome is.

F3: this question was included for context on views of the church compared to other providers of care.

8 Impact of CCT maturity for CCT facilitators

Regression coefficients indicating impact of CCT maturity for CCT facilitators

CCT maturity and whether someone is a CCT facilitator	Interaction with being in CCT community	Interaction with CCT maturity		
	Compared to control (model 1)	Compared to control (model 2)	Compared to CCT facilitators in 0–2 maturity (model 3)	Compared to CCT facilitators in 3–5 maturity (model 4)
Control communities	0.000	0.000	-1.618***	-1.324***
CCT community, *not facilitator*	1.183***			
CCT community, *CCT facilitator*	1.234***			
0–2 years, *not CCT facilitator*		1.030***	-0.589**	-0.295*
3–5 years, *not CCT facilitator*		1.305***	-0.313	-0.019
5+ years, *not CCT facilitator*		1.117***	-0.501*	-0.207
0–2 years, *CCT facilitator*		**1.618***	**0.000**	**0.294**
3–5 years, *CCT facilitator*		**1.324***	**-0.294**	**0.000**
5+ years, *CCT facilitator*		**0.925***	**-0.694**	**-0.399**
Observations	7417	7,417	7,417	7,417
Adjusted R-squared	0.198	0.20	0.20	0.20

Notes: The dependent variable Y = life satisfaction on a scale of 0 to 10. Only the coefficient of the variable of interest is shown here. A coefficient of 0.000 means this is the base group other subgroups were compared to. Stars denote statistical significance: *p<0.1, **p<0.05, ***p<0.01. Control variables include age, gender, marital status, religion, demographic of households head, number of people in household, education level, level of disability, country and whether the community is urban. Coefficients of other control variables can be shared on request. Blank spaces mean the respective variable was not included in that model.

Model 1 in the table above indicates how the benefit differs for CCT facilitators or those who are not CCT facilitators. Model 2 indicates how the impact of CCT maturity differs for CCT facilitators or those who are not CCT facilitators. The highest benefit for CCT facilitators is seen in the first phase (0–2 years CCT maturity). By just observing the different coefficients, we do not know if this is just down to chance. Therefore, model 3 uses 0–2 years for church facilitators as the base group and model 4 uses 3–5 years for church facilitators as the base group. These show us there is no discernible difference between 0–2 years and 3–5 years or 3–5 years and 5+ years. However, benefits experienced by church facilitators at 0–2 years are significantly higher than benefits experienced by church facilitators at 5+ years (the significant coefficient of -0.694**, which compares 5+ years to 0–2 years for church facilitators).

9 Impact of CCT maturity for church members and non-members

Regression coefficients indicating impact of CCT maturity for non-church members

CCT maturity and whether someone is a church member	Interaction with being in CCT community Compared to control (model 1)	Interaction with CCT maturity		
		Compared to control (model 2)	Compared to church members in 0–2 maturity (model 3)	Compared to church members in 3–5 maturity (model 4)
Control communities	0.000	0.000	-1.221***	-1.382***
Being in CCT community, *not church member*	0.821***			
Being in CCT community, *church member*	1.283***			
0–2 years, *not church member*		0.583***	-0.638***	-0.799***
3–5 years, *not church member*		0.906***	-0.315**	-0.476***
5+ years, *not church member*		0.974***	-0.247	-0.408**
0–2 years, *church member*		**1.221***	**0.000**	**-0.161***
3–5 years, *church member*		**1.382***	**0.161***	**0.000**
5+ years, *church member*		**1.173***	**-0.048**	**-0.209***
Observations	7,174	7,174	7,174	7174
Adjusted R-squared	0.207	0.209	0.209	0.209

Notes: The dependent variable Y = life satisfaction on a scale of 0 to 10. Only the coefficient of the variable of interest is shown here. A coefficient of 0.000 means this is the base group other subgroups were compared to. Stars denote statistical significance: *p<0.1, **p<0.05, ***p<0.01. Control variables include age, gender, marital status, religion, demographic of households head, number of people in household,

education level, level of disability, country and whether the community is urban. Coefficients of other control variables can be shared on request. Blank spaces mean the respective variable was not included in that model.

Model 1 in the table above indicates how the benefit differs for church members or those who are not church members. Model 2 indicates how the impact of CCT maturity differs for church members or those who are not church members. The highest benefit for church members is seen in the middle phase (3–5 years CCT maturity). By just observing the different coefficients, we do not know if this is just down to chance. Therefore, model 3 uses 0–2 years for church members as the base group and model 4 uses 3–5 years for church members as the base group. There is an observable increase from 0–2 years to 3–5 years (the significant coefficient of 0.161*, which compares 3–5 years to 0–2 years for church members). There is also an observable decrease from 3–5 years to 5+ years (the significant coefficient of -0.209***, which compares 5+ years to 3–5 years for church members). Therefore, the peak in 3–5 years *is* significant.

Regression coefficients indicating impact of CCT maturity for non-church members

CCT maturity and whether someone is a church member	Interaction with being in CCT community	Interaction with CCT maturity		
	Compared to control (model 1)	Compared to control (model 2)	Compared to non-church members in 0–2 maturity (model 3)	Compared to non-church members in 3–5 maturity (model 4)
Control communities	0.000	0.000	-0.583***	-0.906***
Being in CCT community, *not church member*	0.821***			
Being in CCT community, *church member*	1.283***			
0–2 years, *not church member*		**0.583***	**0.000**	**-0.323***
3–5 years, *not church member*		**0.906***	**0.323***	**0.000**
5+ years, *not church member*		**0.974***	**0.391***	**0.068**
0–2 years, *church member*		1.221***	0.638***	0.315**
3–5 years, *church member*		1.382***	0.799***	0.476***
5+ years, *church member*		1.173***	0.590***	0.267*
Observations	7,174	7,174	7,174	7174
Adjusted R-squared	0.207	0.209	0.209	0.209

Notes: The dependent variable Y = life satisfaction on a scale of 0 to 10. Only the coefficient of the variable of interest is shown here. A coefficient of 0.000 means this is the base group other subgroups were compared to. Stars denote statistical significance: *$p<0.1$, **$p<0.05$, ***$p<0.01$. Control variables include age, gender, marital status, religion, demographic of households head, number of people in household, education level, level of disability, country and whether the community is urban. Coefficients of other control variables can be shared on request. Blank spaces mean the respective variable was not included in that model.

Again, model 1 above indicates how the benefit differs for church members or those who are not church members. Model 2 indicates how the impact of CCT maturity differs for church members or those who are not church members. Benefits are lowest in the earliest phase (0–2) and higher in the middle and latter phases. By just observing the different coefficients, we do not know if this is just down to chance. Therefore, model 3 uses 0–2 years for non-church members as the base group and model 4 uses 3–5 years for non-church members as the base group. There is an observable increase from 0–2 years to 3–5 years (the significant coefficient of 0.323*, which compares 3–5 years to 0–2 years for non- church members). There is no observable difference between 3–5 years to 5+ years (the insignificant coefficient of 0.068, which compares 5+ years to 3–5 years for non-church members). Therefore, the higher benefits in 3–5 years and 5+ *are* statistically different to the benefits experienced in the period 0–2 years for non-church members.

10 Calculating direct costs per CCT community

	Rwanda	Sierra Leone	Tanzania	Zimbabwe	Average
Tearfund and partner's budget spent	$263,450	$48,213	$414,849	$228,669	-
Tearfund's labour cost	$27,414	$7,835	$24,911	$53,974	-
Number of CCT communities supported	1,482	67	476	322	-
Tearfund and partner's spend, per community per year	$178	$720	$872	$710	$620
Tearfund's labour cost, per community per year	$18	$117	$52	$168	$89

Notes: Calculated using £ values reported by Tearfund and partners, converted using yearly average exchange rates to year end 2021(£1 = $1.37753).

11 Full survey questionnaire

*Enumerators should read the separate, printed handout to the participant, and answer any questions they may have, **before** asking the following survey questions.*

E1. Do you confirm that you have understood the information provided about the study?
(Required)

○ 1. Yes

E2. Do you understand that your participation is voluntary and that you are free to withdraw at any time without giving a reason and without any negative consequences?
(Required)

○ 1. Yes

E3. Do you agree to take part in the study? (Required)

○ 1. Yes

I1. Enumerator to answer: Which country are you in?

○ A. Rwanda

○ B. Sierra Leone

○ C. Tanzania

○ D. Zimbabwe

I1b. Enumerator to answer: Where are you collecting data from?

Write the name of the community <u>and</u> church that you are visiting in the box below.
The online survey has a drop-down list for you to select from.

I1h. Enumerator's name

Write <u>your name</u> in the box below. The online survey has a drop-down list for you to select from.

[   ]

I1k. Enumerator to answer: Are you in a non-CCT control community?

○ 0. No

○ 1. Yes

>>> if answer is 0.No, continue to I2 (this page) <<<

>>> if answer is 1.Yes, go to D1 (page 6) <<<

I2. Enumerator to establish whether person is a CCT facilitator in this church:

○ 0. No

○ 1. Yes

>>> if answer is 0.No, go to I3 (this page) <<<

>>> if answer is 1.Yes, go to CF1 (page 3) <<<

I3. Enumerator to establish the following answers through conversation

	0. No	1. Yes
I3.A. Is this individual a member of this church?	○	○
I3.B. Is this individual aware of CCT - have they heard of it?	○	○
I3.C. Does this individual participate / have they been involved in any of the CCT activities or initiatives that are on your list?	○	○

I4. If the individual is involved with CCT, how long have they been involved for? (months)

(If the individual is not involved with CCT please put 0)

[   ]

I5. If the individual is involved with CCT, how often have they participated in activities in the last year?

○ 1. Less often than every month
○ 2. Once or twice a month
○ 3. At least once a week if not more
○ 4. Not involved

CHURCH FACILITATOR QUESTIONS

CF1. In the past year has church attendance...

- ○ A. Decreased
- ○ B. Stayed the same
- ○ C. Increased

CF2. In the past year has financial giving to the church

- ○ A. Decreased
- ○ B. Stayed the same
- ○ C. Increased

CF3. What new or improved community assets are there due to the work of CCT? (Tick all that apply)

- ☐ CF3.A. Road
- ☐ CF3.B. Water access (e.g bore hole, wells, taps or pumps)
- ☐ CF3.C. School
- ☐ CF3.D. Clinic
- ☐ CF3.E. None
- ☐ CF3.F. Other

>>> if other, please specify……………………………………………….<<<

CF4. Other than Covid-19, has this community faced any significant shocks or challenges in the past year? (Tick all that apply)

☐ CF4.A. Drought

☐ CF4.B. Flood

☐ CF4.C. Crop failure

☐ CF4.D. Bush fire

☐ CF4.E. Other disease outbreak (not Covid)

☐ CF4.F. None

☐ CF4.G. Other

>>> if other, please specify…………………………………………<<<

CF5. Are any other external organisations facilitating similar community development work in this community for example NGOs, government initiatives?

○ 0. No
○ 1. Yes
○ 2. I don't know

>>> if answer is 1. Yes, go to CF6, otherwise continue to D1 (page 6) <<<

CF6. If so, what is the nature of that work? (Tick all that apply)

- ☐ CF6.A. Community infrastructure - (Permanent church buildings, roads, bridges)
- ☐ CF6.B. Livelihoods (training, apprenticeships)
- ☐ CF6.C. Agriculture (training, coops, new techniques)
- ☐ CF6.D. Supporting the most vulnerable
- ☐ CF6.E. Health (new facilities, health awareness campaigns)
- ☐ CF6.F. WASH (water sources and sanitation campaigns)
- ☐ CF6.G. Education/ childcare
- ☐ CF6.H. Savings groups
- ☐ CF6.I. Family relationships/ GBV reduction
- ☐ CF6.J. Environment protection - Planting trees, energy saving stoves
- ☐ CF6.K. Advocacy
- ☐ CF6.L. Disaster Risk Reduction
- ☐ CF6.M. Interfaith
- ☐ CF6.N. Increased prayer/bible studies
- ☐ CF6.O. Other

DEMOGRAPHICS

D1. What is your age?

[   ]

D2. Enumerator to answer: What is is the person's gender?

- ○ A. Female
- ○ B. Male
- ○ C. Other
- ○ D. Prefer not to say

D3. What is your current marital status?

- ○ A. Married or living with partner
- ○ B. Divorced
- ○ C. Separated
- ○ D. Widowed
- ○ E. Single

D4. What is your religion?

- ○ A. No religion
- ○ B. Christian (including Church of England, Catholic, Protestant and all other Christian denominations)
- ○ C. Buddhist
- ○ D. Hindu
- ○ E. Jewish
- ○ F. Muslim
- ○ G. Sikh
- ○ H. Any other religion

D5. Who heads up your household?

- ○ A. Female
- ○ B. Male
- ○ C. Male and Female together
- ○ D. Child
- ○ E. Other

D6. How many dependants are there in your household?

D6b. How many people in total are there in your household?

D7. What is your highest educational level or qualification?

○ A. No formal schooling or informal schooling only

○ B. Some primary schooling

○ C. Intermediate school or some secondary / high school

○ D. Secondary / high school completed

○ E. Post-secondary qualifications other than university e.g. polytechnic or college

○ F. University completed

○ G. Post-graduate

D8. What is your occupation?

Tick all that apply

☐ A. In paid work (or away temporarily) as an employee, or working for your family business

☐ B. Self-employed

☐ C. Subsistence farmer

☐ D. In education (not paid for by employer) even if on vacation

☐ E. Unemployed

☐ F. Not working – permanently sick or disabled

☐ G. Retired

☐ H. Doing unpaid housework, looking after children or other persons

☐ I. Other

D9. Do you have any physical or mental health conditions or illnesses that have lasted or are expected to last 12 months or more?

- ○ 0. No
- ○ 1. Yes
- ○ 2. Prefer not to say

>>> if 1.Yes, go to D9b (this page) <<<

>>> if 0. No or 2. Prefer not to say >>> go to W1 (page 9)

D9b. Does your condition or illness/do any of your conditions or illnesses reduce your ability to carry out day-to-day activities?

- ○ A. Not at all
- ○ B. Yes, a little
- ○ C. Yes, a lot

EMOTIONAL AND MENTAL WELLBEING

W1. Overall, how satisfied are you with your life?

0	1	2	3	4	5	6	7	8	9	10

not at all   completely

W2. Looking ahead, how do you think you will be a year from now, overall? Will you be...

| ○ A. Worse off than you are now |
| ○ B. About the same |
| ○ C. Better off than you are now |

W3. Please imagine a ladder, with steps numbered from 0 at the bottom to 5 at the top. In 5 years time, which step do you see yourself standing on?

0	1	2	3	4	5

The worst possible life for you   The best possible life for you

----

PERSONAL RELATIONSHIPS

R1. How much do you trust people in your local area?

- ○ 1. Do not trust at all
- ○ 2. Do not trust very much
- ○ 3. Not sure
- ○ 4. Trust a little
- ○ 5. Trust completely

R2. Generally speaking, would you say that people can be trusted or that you can't be too careful in dealing with people?

This is about trust generally

- ○ A. You can't be too careful in dealing with people
- ○ B. It depends
- ○ C. Most people can be trusted

R3. Do you agree or disagree with the following statement "I feel valued and respected by my family"?

- ○ 1. Strongly disagree
- ○ 2. Disagree
- ○ 3. Neither agree nor disagree
- ○ 4. Agree
- ○ 5. Strongly agree

R4. How satisfied are you with the close relationships in your life?

- ○ 1. Not at all satisfied
- ○ 2. Not very satisfied
- ○ 3. A little satisfied
- ○ 4. Completely satisfied

SOCIAL CONNECTION

S1. Over the last three months, have you worked with other people in your community as part of a shared project?

- ○ 0. No
- ○ 1. Yes

S2. Do you agree or disagree with the following statement: "if I needed help, there are people who would be there for me"?

- ○ 1. Strongly disagree
- ○ 2. Disagree
- ○ 3. Neither agree nor disagree
- ○ 4. Agree
- ○ 5. Strongly agree

S3. Do you agree or disagree with the following statement: "I feel like I belong to this community"?

- ○ 1. Strongly disagree
- ○ 2. Disagree
- ○ 3. Neither agree nor disagree
- ○ 4. Agree
- ○ 5. Strongly agree

PARTICIPATION & INFLUENCE

P1. Do you agree or disagree with the following statement: "I can make decisions that affect me and my household"?

- ○ 1. Strongly disagree
- ○ 2. Disagree
- ○ 3. Neither agree nor disagree
- ○ 4. Agree
- ○ 5. Strongly agree

P2. In the last 12 months, how often did you get together with other people to raise an issue to decision-makers?

- ○ A. Never
- ○ B. Rarely
- ○ C. Sometimes
- ○ D. Often

P3. Do you agree or disagree with the following statement: "I can influence decisions affecting my community"?

○ 1. Strongly disagree
○ 2. Disagree
○ 3. Neither agree nor disagree
○ 4. Agree
○ 5. Strongly agree

LIVING FAITH

F1. Do you agree or disagree with the following statement: "I rely on my faith for direction in my life"?

○ 1. Strongly disagree
○ 2. Disagree
○ 3. Neither agree nor disagree
○ 4. Agree
○ 5. Strongly agree

F2. Besides your immediate family, how often do you help people who are in need?

○ A. Never
○ B. Rarely
○ C. Sometimes
○ D. Often

F3. In your community, who provides care for the vulnerable?

please tick 'yes' or 'no' on each row

	0. No	1. Yes
F3.A. Private companies /for-profit organisations	○	○
F3.B. Religious organisations, church	○	○
F3.C. Family, relatives or friends	○	○
F3.D. Government	○	○
F3.E. Non-government Organisation (NGO)	○	○
F3.F. Civil Society Organisation (CSO)	○	○

CAPABILITIES

C1. Do you agree or disagree with the following statement: "I can create changes in my own life"?

- ○ 1. Strongly disgree
- ○ 2. Disagree
- ○ 3. Neither agree nor disagree
- ○ 4. Agree
- ○ 5. Strongly agree

C2. Are you confident that you could cope with unexpected events?

- ○ 1. Not at all confident
- ○ 2. Not very confident
- ○ 3. Not sure
- ○ 4. Quite confident
- ○ 5. Completely confident

MATERIAL ASSETS AND RESOURCES

A1. In the last 12 months, how often have you or your family...?

	A. Often	B. Sometimes	C. Rarely	D. Never
A1.A. Gone without enough food to eat	○	○	○	○
A1.B. Gone without medicine or medical treatment that you needed	●	●	●	●
A1.C. Had to miss school as could not afford the fees / supplies	○	○	○	○

A2. During the past year, which of the following did your family do? (tick all that apply)

☐ A2.A. Saved money

☐ A2.B. Spent savings

☐ A2.C. Borrowed money

☐ A2.D. None of the above

A3. During the past year did you invest in any assets? e.g. house, animals, land, business etc

○ 0. No
○ 1. Yes

A4. Who usually decides how money is spent in your household?

○ A. You

○ B. Your partner/spouse

○ C. You and your partner / spouse jointly

○ D. You and someone else

○ E. Other

A5. Are you now earning more or less than this time last year?

○ A. Less

○ B. About the same

○ C. More

○ D. I don't earn money

A6. Looking ahead, how do you think you will be financially a year from now, will you be...

○ A. Worse off than you are now

○ B. About the same

○ C. Better off than you are now

○ D. I don't earn money

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i. Enumerator to answer: Which country are you in? (Required)

- ○ A. Rwanda
- ○ B. Sierra Leone
- ○ C. Tanzania
- ○ D. Zimbabwe

v. Enumerator to answer: The individual who I am surveying is a CCMP facilitator in...
(Required)

Please select an option	∨

QUESTIONS FOR FACILITATORS

1. On average, how many hours in a month do you spend facilitating CCMP activities?

(Optional) Enumerator can write their workings for question 1 here:

2. Apart from yourself, how many other (different) people volunteered in the last year to enable CCMP activities to take place?

If none, please put '0'.

[ ]

(Optional) Enumerator can write their workings for question 2 here:

[ ]

3. Thinking about the people mentioned in question 2: On average, how many hours in a month does one of these volunteers spend helping out with CCMP activities?

If none, please put '0'.

[ ]

(Optional) Enumerator can write their workings for question 3 here:

[ ]

4. Approximately how many different people have participated in CCMP activities in the last year?

[   ]

(Optional) Enumerator can write their workings for question 4 here:

[   ]

QUESTIONS FOR FACILITATORS

5a. How much money has the church and community put towards CCMP in the last year?

In Sierra Leone - please answer in leones. Rwanda - Rwandan francs. Tanzania - Tanzanian shillings. Zimbabwe - USD. If none, please put '0'.

[   ]

(Optional) Enumerator can write their workings for question 5a here:

[   ]

5b. What is the value of the goods that the church and community have put towards CCMP in the last year?

In Sierra Leone - please answer in leones. Rwanda - Rwandan francs. Tanzania - Tanzanian shillings. Zimbabwe - USD. If none, please put '0'.

(Optional) Enumerator can write their workings for question 5b here:

5c. What is the value of labour that the church and community have put towards CCMP in the last year?

In Sierra Leone - please answer in leones. Rwanda - Rwandan francs. Tanzania - Tanzanian shillings. Zimbabwe - USD. If none, please put '0'.

(Optional) Enumerator can write their workings for question 5c here:

5d. How much money has the church and community mobilised for CCMP from other sources (eg. government, private companies, NGOs other than Tearfund) in the last year?

In Sierra Leone - please answer in leones. Rwanda - Rwandan francs. Tanzania - Tanzanian shillings. Zimbabwe - USD. If none, please put '0'.

(Optional) Enumerator can write their workings for question 5d here:

6. What is the approximate population size of the community in which CCMP is taking place?