

Partnerships for change: a cost benefit analysis of Self Help Groups in Ethiopia



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Acronyms

BCR	benefit-to-cost ratio
CBA	cost benefit analysis
CBO	community-based organisation
CCMD	Church and Community Mobilisation for Development
CLA	Cluster Level Association
FGC	female genital cutting
FGD	focus group discussion
FLA	Federal Level Association
GDP	gross domestic product
GNI	gross national income
HDI	Human Development Index
HHS	Households
IGA	income-generating activity
MFI	micro-finance initiative
PSNP	Productive Safety Net Programme
SHG	Self Help Group
SLF	Sustainable Livelihood Framework
SNNPR	Southern Nations, Nationalities and Peoples' Region

1 INTRODUCTION

1.1 Overview

In 2002, Tearfund helped introduce the Self Help Group (SHG) approach to Ethiopia through the Ethiopian Kale Heywet Church (EKHC). The Programme Coordinator first learnt about the approach earlier that same year from Myrada¹ in south-central India where the approach had emerged during work it supported in the early 1980s. Believing that the approach could work equally well in Ethiopia, the Integrated Urban Development Department Programme Coordinator adapted it and introduced it into Nazareth town (also known as Adama), a town in central Ethiopia.

The first five SHGs were started by 100 women in Nazareth (Adama); today the number of SHGs as part of Tearfund funded programmes has increased to well over 12,000 across Ethiopia, impacting over 1 million people. The growth in numbers of SHGs has been primarily because local churches have embraced it and replicated it using their own resources. As such, the cost of replication has been very low and today over 1 million of the poorest people are stepping out of poverty and transforming their own lives. The programme has cost an average of approximately £50 per SHG member (€60), or approximately £10 (€12) per beneficiary. This cost has included the full costs of taking the approach to scale – approximately £20 is required for support in SHG formation (over the first two to three years), and £30 has been required for longer term institutional support to establish SHG association infrastructure. Costs will likely increase slightly to support an increased level of depth, speed and consistency of development going forward.

1.2 Purpose of this study

The aim of this study is to document the development in SHG groups supported by Tearfund in Ethiopia. Specifically, a cost benefit analysis (CBA) approach has been used to complement qualitative evidence on outcomes with quantitative evidence, in order to demonstrate the value for money of such an approach. Clearly, there are many gains from the SHG approach which cannot be quantified, but which are key. Therefore, this study includes both a qualitative and a quantitative assessment of SHG impacts and benefits.

1.3 Structure of the report

This report is structured as follows:

- **Section 2** summarises the programme context (page 7);
- **Section 3** describes in brief the methodology undertaken (page 11);
- **Section 4** presents the findings from the cost benefit analysis (page 15); and
- **Section 5** presents conclusions from the field-testing and analysis, and recommendations (page 28).

¹ Myrada was started in 1968. Myrada at present is directly managing 18 projects in 20 poor and drought-prone districts of Karnataka, Tamil Nadu and Andhra Pradesh. The Self Help Group emerged as a core approach in the early 1980s. See www.myrada.org for more information.

The study is based on numerous SHG programmes, in different areas and different contexts. As such, it was easiest to gather and analyse data for specific areas, and the findings from each specific group are presented in Annexes (according to the order in which the programmes started):

- Annex A: Nazareth (page 32)
- Annex B: Hawassa (page 50)
- Annex C: Wolaita (page 65)
- Annex D: Gilgal (page 84)
- Annex E: Leku (page 101)
- Annex F: Fincha and Shambu (page 118)

2 Programme summary

2.1 Overview of programme area

Ethiopia has a projected population of 88.9 million people² and is the second most populous country in Africa, after Nigeria. Livelihoods for more than 80 per cent of the population are based on agriculture or pastoralism. The urban population accounted for just over 17.6 per cent of the total in 2010.³ The country suffers from frequent droughts or floods that result in significant loss of harvest and livestock. These hazards put ten to 15 per cent of the population at risk of food insecurity or malnutrition, leaving them in need of emergency food aid. In 2005, with the support of major international donors, the government of Ethiopia launched the Productive Safety Net Programme (PSNP) (see Box 1), to provide food or cash to 7.6 million chronically food-insecure people. An additional 3 to 4 million people who face transitory food insecurity during drought years are provided with food aid through annual appeal mechanisms.

During the last four years, food price inflation has been a significant hazard that has eroded people's purchasing power and the value of their assets. Annual consumer price inflation, measured in simple growth rates, rose from 15.1 per cent in June 2007 to a peak of 55.7 per cent in July 2008. The inflation rate fell to below 10 per cent in 2009 and 2010, but rose again to 36.1 per cent in 2011.⁴ Food price inflation was the major contributor to these high rates and this has eroded the capacity of low-income earners to access sufficient food.

In terms of overall development, Ethiopia ranks 174 out of 187 countries on the Human Development Index (HDI).⁵ Ethiopia's gross domestic product (GDP) has been growing at an average annual growth rate of 11 per cent from 2005/06 to 2009/10. According to the World Bank (2012), the gross national income (GNI) per capita (*Atlas method*) is US\$ 390 as compared to the average of US\$ 1,176 for sub-Saharan Africa and US\$ 528 for low-income countries globally. Some 39 per cent of the population still live below the poverty line, surviving on US\$ 1.25 per day, and 77.6 per cent survive on less than US\$ 2 per day. Life expectancy at birth has increased from 51.7 years to 59.3 between 2000 and 2011.⁶

² International Monetary Fund, World Economic Outlook Database, October 2012

³ www.roubini.com (2012) Accessed 28.02.2013

⁴ African Development Bank, August 2012

⁵ The HDI is a summary measure for assessing long-term progress in three basic dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living.

⁶ UNDP (2011) *Human Development Report 2011*

Box 1: Ethiopia's PSNP

The Productive Safety Net Programme (PSNP) plays a key role in Ethiopia, and has made significant progress in facilitating an early response to shocks, which helps to build resilience. The PSNP works by making consistent and reliable transfers to populations affected by drought, helping to stabilise household economies in the face of shocks and stresses. Estimates of the cost per person under the PSNP range between £20 and £35 per beneficiary, for six months of assistance.⁷ (This compares favourably with the estimated cost of late humanitarian response to drought in Ethiopia, which is £69 per person, with estimated losses of £54 per person, making a total of £123 per person.)⁸

2.2 The Self Help Group approach

SHGs are groups of 15 to 20 people, usually chosen from the poorest sectors of the community. Facilitators help each group to develop healthy relationships, set up a saving scheme and establish by-laws on how they will operate. Group members save a small amount each week (starting at about £/€0.02). In time, members can take out small loans that are repaid with interest over an agreed time period. Gradually, the capital of the SHG grows, allowing larger loans to be made. Initially, loans are generally taken either to pay expenses such as school fees and health costs or to start income-generating activities. Later on, they are used predominantly for income generation.

Groups are given training in running meetings, resolving conflicts and saving. They can also choose from a menu of training options: business skills, literacy, composting, terracing, water source management, hygiene, sanitation etc. Equally importantly, members develop social capital as they support each other through both good fortune and crisis. In time, SHG households find that money is available to send children to school; nutrition and hygiene improve; access to medical care is better; and living standards rise.

After its first year, the SHG is urged and supported to consider how to meet the welfare needs of its members, such as healthcare costs. This generally leads to the members starting up a special saving scheme, to which each contributes a regular amount, in addition to their normal savings. This then supports members' healthcare costs and other insurance needs as they arise.

In addition to offering a savings and credit scheme, the SHGs are sanctuaries where members can come and discuss their problems. They become confident and more capable of being drivers of change in their lives. Groups enable people to talk through community issues and often members work together to solve problems. One group lobbied the local council to get a bridge rebuilt so that they could regain access

⁷ Estimates are not completely straightforward, due to the changing budgets and beneficiaries year on year, and the different components of the PSNP. Figures quoted here can be referenced to P White *et al* (2012) *Ethiopia's Productive Safety Net Programme: 2010-2014 – a value for money assessment*, GHA Report 2012. Global Humanitarian Assistance, UK. <http://www.globalhumanitarianassistance.org/the-public-safety-net-response-to-food-crisis-3767.html> See also L Sida, B Gray and E Asmare (2012) *IASC: Real-time evaluation of the humanitarian response to the Horn of Africa drought crisis: Ethiopia*

⁸ C Cabot Venton *et al* (2012) *The economics of early response and resilience*. DFID, UK

to a local market. When the time came for the work to be done, the group provided labour and got their neighbours to join in too. Other groups have started a kindergarten in a town where the costs of such schools were prohibitive. They now cater for more than 1,000 children daily. In another village, the groups discussed the role of women in their community. As a result, women are now allowed to speak in public and girls are sent to school. Others have supported orphans in their communities, rebuilt houses for widows, dug wells or terraced land to prevent soil erosion.

Once eight to 12 SHGs have been established in an area and have reached a certain level of maturity, they elect two members each to join a Cluster Level Association (CLA). The CLA is empowered to take responsibility for setting up new SHGs and developing existing SHGs. When ten or more CLAs have been formed and become mature, a higher Federal Level Association (FLA) is formed from elected SHG members, which is then registered with the government.

2.3 Self Help Group programmes

Introduction

The areas selected for this study are located within two regional states, namely, Oromiya and the Southern Nations, Nationalities and Peoples' Region (SNNPR). Details on each of the programmes can be found in the annexes. A brief summary is provided here. Six programmes were the subject of this analysis, as follows:

- Integrated Urban Development – Nazareth and Hawassa
- Food Security Programme – Wolaita
- Project Gilgal Church Mobilisation – Sidama and Wolaita
- HIV/AIDS Programme – Fincha & Shambu (one programme), Leku

Nazareth – Integrated Urban Development Programme

In 2002, the first five SHGs were established in Nazareth town. Over time, other community members become interested and, by the end of the first year, 34 SHGs were established. Today, there are 411 SHGs in Nazareth. By the end of 2003, Cluster Level Associations (CLAs) were starting to form and by 2012 there were 24 CLAs operating effectively and supporting both the development of member SHGs and starting new SHGs. In 2008, the project supported the community of SHG members in Nazareth to develop a Federal Level Association (FLA). A process to become registered with and formally recognised by the Government of Ethiopia in Nazareth began and in 2011 the FLA was able to sign an agreement of registration with the Government of Ethiopia.

Hawassa – Integrated Urban Development

In 2003, Tearfund supported an expansion of the Nazareth programme to three other major towns in Ethiopia, including Hawassa, located on Lake Hawassa in the Great Rift Valley, 167 miles south of Addis Ababa. The SHG approach was introduced using a new model, the Church and Community Mobilisation for Development (CCMD) process, which first envisions and mobilises local churches to engage with developmental needs in their communities. The church has taken full responsibility in identifying the urban poor, assessing the depth of poverty, forming SHGs and building the capacity of poor people to support their own development. The first 44

SHGs were formed in 2003. Currently, there are 192 SHGs serving 3,040 of the poorest households. In addition, the SHG members have established 15 CLAs to coordinate, develop and replicate the approach to new beneficiaries. A FLA has also been formed but is currently quite young and will require more support.

HIV/AIDS – Fincha/Shambu and Leku

Tearfund and its four partners in Ethiopia implemented HIV and AIDS projects from 2008 to 2011 in eight districts of three regional states of Ethiopia, initially with funding from Irish Aid.⁹ This cost benefit analysis has focused on two of the districts, specifically the rural towns of **Shambu & Fincha, and Leku**, respectively. The projects have focused on envisioning and equipping local churches and establishing SHGs to respond to issues related to HIV. SHGs have disseminated HIV and health information to community members, mobilised local churches and community-based organisations (CBOs) for voluntary HIV counselling and testing, and worked with government institutions and public schools in combating HIV-related stigma, harmful traditional practices (particularly female genital cutting) and gender inequalities.

Wolaita – Food Security Programme

The population in Wolaita suffers from chronic poverty and food insecurity. Farmers face acute land shortages and declining land fertility, and these problems are exacerbated in years of drought that lead to poor harvests and outbreak of crop pests and diseases. Tearfund has supported a response to livelihood needs in the project area since 2002. Yet, it was not until 2006 that SHGs were introduced as a strategy to transform livelihoods, supported through the Food and Nutrition Security (FNS) project. The beneficiaries are poor farmers, landless and female-headed households, as well as people with disabilities. The project's purpose is to bring about increased food and nutrition security and livelihood improvement. The major components are:

- organising and building the capacity of SHGs;
- empowering local community-based organisations;
- agricultural input provision;
- training on conservation farming and sustainable organic agriculture; and,
- environmental rehabilitation.

Project Gilgal – Church Mobilisation

Project Gilgal was established in 1999 as part of an overall organisational change programme within the EKHC – the largest of the Protestant churches in Ethiopia with more than 7 million members and 7,000 local church congregations. The approach focused on cascading training programmes down and across the church structure. Project Gilgal started to envision and mobilise local churches in rural locations from April 2008 and the first SHGs were formed during that year. This led to a recognition that the local church mobilisation and SHG approaches work just as effectively in rural areas as in the urban context.

⁹ *Supporting a more effective church and community based response to HIV and AIDS in 2 countries in Africa*

3 Methodology

3.1 Summary of steps undertaken

The methodology consisted of three phases, comprising eight steps, as highlighted in the table below. The activities undertaken in each of these phases are described below.

Phase I: Preparation	Step 1: Define the study parameters
	Step 2: Prepare for field work
Phase II: Field work: data collection	Step 3: Impact assessment
	Step 4: Valuation of quantifiable impacts
	Step 5: Identification of risk reduction measures and costs
Phase III: Data analysis and reporting	Step 6: Cost benefit analysis
	Step 7: Sensitivity analysis
	Step 8: Reporting

Phase I: Preparation

A two-day workshop was carried out with partner agency staff to familiarise them with the backward-looking cost benefit analysis (CBA) approach and to develop criteria for selecting study areas. Research instruments were identified and agreed upon. Facilitators from partnering organisations were identified and given orientation training.

It was agreed that SHGs which were three years old or more would be prioritised for focus group discussions (FGDs), in order to document the progressive change within longer-standing members. Typically, if an SHG stays together for the first year, it remains together (barring very minimal changes in membership due to personal reasons, death etc), and therefore this selection should not create bias in this respect. Also selected were control groups that comprised community members living in the same area, but who remained outside the SHGs; this was to ensure comparability between the two groups.

A total of 65 FGDs with SHGs (544 people), and 34 FGDs with control groups (324 people), were selected from six rural districts and two urban ones. FGDs were explicitly selected to represent 'average' SHGs: those that were exceptionally good or bad were not included. Based on experience, these average SHGs represent the bulk of SHGs, as there has been minimal failure. There are examples of exceptional change, but these are not included here so as not to bias the sample.

Six study teams were organised and given orientation about the purpose of the study, and ethical procedures to be followed during data collection. Focus group discussions and semi-structured interviews were used to collect data. The interview instruments were translated into local languages and contextualised for each of the locations selected for the study.

Phase II: Field work: data collection

The six study teams carried out the study simultaneously in the six selected areas from 12 to 23 November, 2012.

Before carrying out the main research, the tool was field tested with at least two SHGs and one control group at each study location. Based on the experience gained from the field testing:

- the process of facilitating the conversation with the FGD groups was reviewed;
- recording and transcribing the data into the field tool format was standardised;
- topics or issues that appeared difficult were clarified and shared understanding established on what was required; and
- a number of items in the field tools were contextualised and simplified.

Informants were assured that their responses would be kept confidential. Facilitators negotiated with all FGD groups on the length of the discussion and the settings. In each FGD, a team leader, a facilitator and an enumerator (data recorder) were involved.

Table 1 presents key statistics for each of the SHG programmes evaluated, including years of existence, number of SHG and SHG members, number of SHG members interviewed, and number of control group members interviewed.

Table 1: Summary of programmes evaluated for field work

	Integrated Urban Development		Food Security	Church Mobilisation	HIV	
	Nazareth	Hawassa	WKHC (Wolaita)	Gilgal	Leku	Fincha & Shambu
Years of existence	10	9	7	4.5	4.5	4.5
No. of SHGs	411	192	163	145	78	107
No. of SHG members	6,620	3,040	2,388	2,465	1,560	1,721
No. of SHG members interviewed	80	58	72	116	136	82
No. of control group members interviewed	40	30	75	46	59	74

Phase III: Data analysis and reporting

Evidence from the field work was evaluated according to the six programme areas described above. Control group data was compared with SHG group data for each programme area, and summarised according to the main areas of benefit.

All benefits are measured on a per capita basis, using a weighted average. (In other words, if only a portion of the SHG population benefits, the total benefit is distributed over the total population to get a weighted average per person.)

As demonstrated in the table above, while a substantial number of focus groups were undertaken with SHG and control communities, they are nonetheless a small proportion of the total number of SHGs, and as such cannot be considered to be statistically representative of the full set. Having said this, the findings do echo the experience of the programme team across the SHG community.

In order to account for this, two models were developed for the analysis:

- 1) Individual case: The first CBA looks at an individual SHG with 17 members (average size), and estimates the costs and benefits over a 20-year lifetime. Costs are incurred for the first ten years at 147 Birr per person per year (approximately £5 or €6): this is the average cost for the running of the Nazareth programme, which has been running for 11 years (actual cost plus 15 per cent mark-up for head office overheads). It is assumed that the SHG 'graduates' and can continue accruing benefits for the subsequent ten years without further investment (again based on evidence from Nazareth). The return on one SHG provides a baseline analysis of the level of benefits that can be realised, which can be multiplied over a larger population.
- 2) Market penetration: The second CBA takes the full programme data, and models the costs and benefits until the programme reaches market penetration. Based on average actual growth in Nazareth over ten years, a 20 per cent growth rate in SHGs year on year is used to expand the population of SHGs in the model. It is assumed that market penetration has been reached when the SHG members and their families represent 60 per cent of the total population of the area. (This is based on evidence from the India programme.) The model is run until all members have graduated, typically 26–27 years depending on the programme. The intention is to look at the returns on a full-scale programme over time, though this evidence on benefits should be viewed with caution as it is taken from a relatively small subset of focus group discussions.

Further to this, the SHG programme is ultimately self-sustaining after ten years. Hence the market penetration analysis was re-run to demonstrate the returns to external or donor funding:

- 3) Donor-funded: The two cases above assume full costs to achieve benefits – which is the approach that should be taken with CBA, regardless of where the funds come from. However, once the first group of SHGs reaches 'graduation', they are capable of sustaining the growth of new SHGs internally (as evidenced in Nazareth, where each member of the CLAs are establishing a new SHG each, paid for internally, doubling the number of SHGs). Therefore, the model is run again for the whole programme, but accounting only for external funding in the first ten years. At this point, funding ceases as it is assumed that all new growth thenceforth is generated from within SHG clusters.

3.2 Limitations

The study's scope was limited to two regions of the country, namely Southern Nations, Nationalities and Peoples' Region (SNNPR) and Oromiya region. The SHG programme is much more widespread, with SHGs in other regions such as Amhara region, Addis Ababa City and Dire Dawa. Thus, the results of the study represent a subset of the SHG population.

The study has focused on quantifiable attributes with a view to comparing benefits and costs of the investment that has gone into SHGs. Although great effort has been made to capture the non-quantifiable impact of SHGs, the CBA tool was not comprehensive enough to highlight fully the non-quantifiable benefits of SHGs (loving relationships, self-confidence, trust, acceptance, empowerment, sense of self-worth, etc) that are foundational to SHGs and key to transforming people's lives.

The methodology has limitations in terms of its reliance solely on focus group discussions including semi-structured interview with key informants; nor was the resulting data amenable to quantitative analysis. Hence, the benefit cost ratios only reflect the quantifiable benefits of the transformation brought about through SHGs.

4 Cost benefit analysis

4.1 Impact assessment

4.1.2 Overview of impacts

'Self Help Groups come together to do what they cannot do individually.'

Tearfund, Horn of Africa Regional Office, *Annual Report 2011/12*

The SHGs have had far-reaching impacts on their members. Relationships are at the core of this model and critical to the programme's success. Perhaps the most significant outcome of the SHGs is a social one: SHG members talk consistently about increased confidence and skills, the ability to relate better to one another, the sense of support that they feel from one another, empowerment, dignity etc.

At the same time, SHG members start to save small amounts each week. As their savings grow, they are able to start to make loans. Initially, loans are taken out, partly to pay for schooling expenses and health costs and also for income-generating initiatives. Later on, they are used predominantly for income generation. As their income-generating activities grow, SHG members are able to increase their expenditure: enrolment in school increases, use of private doctors and clinics increases, the amount spent on food (both quality and quantity) and clothing increases, and more families are able to buy their own houses. At the same time, the SHG members are learning about issues facing their community, and taking action. As such the SHGs act very much as an agent for social change. Women become more empowered in their relationship with their husbands and the wider community, and have begun to speak out on practices such as female genital cutting. Environmental issues become more prominent, as people take action to reverse degradation and clean up polluted areas; awareness of family planning increases, leading to increased uptake of contraceptives and issues related to HIV & AIDS are addressed.

Each of the individual assessments contained in the annexes describes in detail the specific changes as a result of SHGs. The following provides a brief snapshot of life 'without SHGs' and life 'with SHGs'.

Zenaga, member of SHG in Nazareth town: 'I was one of the first 100 ladies to start an SHG in 2002. I had a mini shop with capital of 300 Birr [£11 / €13] and I was not initially interested in the approach as it did not offer me the capital I was looking for. I went home but my neighbours convinced me to join so I did and started saving 2 Birr a week. When I understood the approach, I started saving 5 Birr a week. I took a loan for 150 Birr, then 500 Birr, and now 20,000 Birr [£713 / €837]. With the loan, I bought a refrigerator and sell cold drinks. I used one of my early loans to buy and sell charcoal, and then used the profit from that to manufacture and sell smokeless stoves. The training from the project helps us to utilise our resources efficiently and effectively.'

Without SHGs – ‘asset depletion’:

- Families from the poorest groups have little in the way of access to basic services such as water supply and healthcare – either because those services don’t exist or because they can’t afford to pay for them.
- Basic needs are not met – families eat one to two cereal-based meals a day, and have little income for clothing and other household goods.
- There is limited diversification of income and, as a result, when hard times come (whether that is drought, illness perhaps associated with HIV, or inflation), families are forced to sell assets at depressed prices to meet their basic needs.
- When they need additional cash, they rely heavily on money-lenders who charge high interest rates.
- There is very limited awareness of environmental protection.
- Social issues such as community conflicts are prevalent: gender imbalances are pronounced, and women have little voice.
- Families are in a downward spiral, as assets of all kinds – social, financial, human – are eroded, contributing to further decline.

With SHGs – ‘asset accumulation’:

- Families from the poorest groups show significant levels of asset accumulation. Social capital, including healthy and supportive relationships, is the driver of change and leads on to increasing capability, voice and motivation for change.
- As a result, SHG households are diversifying incomes, pooling resources to help those in need, and initiating and implementing practical change in their communities.
- Food intake is more frequent and diets more nutritious.
- SHG households are now paying for private education and healthcare.
- Their asset base is increasing and gives them the flexibility to cope with bad times without having to sell assets at depressed prices.
- Both women and men are empowered to engage on issues that are important to them, and they are drivers for change.
- Environmental awareness is high, driving initiatives such as tree-planting, more widespread composting and sustainable agricultural practices, as well as sanitation projects.

Mekuria, a member of the Hope for Tomorrow Self Help Group in Fincha town: ‘We started in June 2009 from a group of street boys and beggars. We started to save 25 Ethiopian cents, 1 Birr, 5 Birr & now 10 Birr [£0.35 / €0.41] per week. We trade peppers, sugar and salt and make *gabis* [traditional clothing]. We have now 5,000 Birr [£178 / €209] and are giving loans to neighbours at ten per cent interest. I want to thank the project workers who have worked with us day and night to reach this level. Initially, we were cursed but now we are people with vision. Initially, we were beggars: now we give money to other beggars and they are now working.’

Further to this, the SHGs are self-sustaining and self-replicating, and delivering value for money on inputs, outputs and outcomes.

- The cost of input for delivering the activities of the SHG programme is reduced. While initial training and capacity building are required, as well as some ongoing support, the model works on the basis of generating funds internally. Hence costs are very low and are community, not donor, driven.
- Further to this, the SHG model replicates itself easily. Once a core of SHGs has been formed, they continue to train new SHGs, at little cost. The Nazareth programme has been a prime example of the growth and development that can be achieved, having reached the status of a Federal Level Association now recognised by the government.
- The outcomes are iterative. As incomes and assets grow, households are able to invest in better healthcare and education, which have their own set of benefits over the longer term. While not all of these could be quantified, it is clear that there is an upward spiral of community growth and development.

4.2 Valuation of quantifiable impacts

4.2.1 Overview of impacts

Clearly, there are a myriad of benefits associated with the SHGs that cannot be quantified. The social impacts are significant, but cannot be described in monetary terms (other than in terms of being a key factor in realising the gains below).

Furthermore, benefits such as sending children to private school instead of public school, or paying for higher-quality doctors, are very hard to quantify. Intuitively, we know that people pay more for these services because they value these services more highly, but estimating the additional benefits of a high-quality education or high-quality medical treatment is very complicated.

However, there are also some significant benefits that can be quantified and, importantly, these demonstrate a cycling out of poverty: as incomes increase, assets and expenditures increase, and there are external benefits such as increased school enrolment and improved nutrition (which has been shown to have direct links to education and income gains).

Member of Fincha's SHG, Hope for Tomorrow: 'Before I was a beggar with my children and lived under a tree. I was sick and we just took what we could get. We heard about the project from the facilitators. Now we are able to work, feed our children and send them to school. We have capital. We started saving 25 cents [£0.01] per week and today I sell hot pepper and oil. Before, we were called 'garbage' but now we have names that show respect. Before we were lost and valueless but now those same people who insulted us respect us. We are able to afford clothes, keep clean, work alongside others and send our children to school. I used to eat only when I got food but today I can eat *shiro* [a lentil stew] with chopped onion and oil.'

The analysis below is divided into three components:

- The first section documents the **valuation of quantifiable benefits** that have accrued as a result of the SHGs, specifically increases in income, increased school attendance, access to low interest loans, and decreased stress sales. The ongoing benefits cannot be given a monetary value; indeed, their value is

incalculable: better healthcare, improved 'safety nets' for poor people and better quality of life.

- The second section documents the **valuation of capital formation** – in other words, the change in the asset base that has occurred as a result of improved income and a stronger culture of saving. This accumulation results in tangible gains: people are eating more and better food (which has linkages with better educational attainment and higher incomes later in life). They also have an internal 'safety net' to fall back on in hard times, and they can help others around them. They are spending more on higher-quality healthcare and private school.
- Finally, this is followed by a discussion around the costs required to achieve these gains.

4.2.2. Valuation of quantifiable benefits

The following impacts were quantifiable for the purposes of the analysis:

Income generation: The most immediate and obvious impact of the SHGs is a reported increase in incomes as a result of increased investment in income-generating activities (IGAs). It can be very difficult to get a clear picture on income, without bias. A common technique used in survey tools is to ask about expenditures as a proxy for income. Therefore, data on expenditures (see next section on valuation of capital formation for greater detail) is reported as a proxy for income.

Education: SHG households consistently report an increase in school enrolment, at all levels. First-level primary (grades 1 to 4) is mandatory (by the government), and hence both SHG and non-SHG households have 100 per cent enrolment at this level. However, this policy is only a few years old, and it is likely that longer-running SHGs resulted in an increase in 1st primary enrolment before this policy came into effect (though this is not quantified here). SHG rates of enrolment for each subsequent level of schooling were compared with national-level statistics for the relevant district, to estimate increases in enrolment. Each school year was estimated at 200 days and valued using half the daily wage rate (65 Birr per day, urban [£2.3 / €2.7]; 30 Birr per day, rural [£1 / €1.2] – both are estimated rates for unskilled labour and so are conservative). This analysis is done for Grades 5–10; the level of enrolment in grades 11 and 12 was not clear, and therefore is not included. It is, however, very likely that SHG children will continue to further education, given evidence from the field. The figures listed below are a weighted average for all years of schooling, whereas the model averages these on a yearly basis.

Low interest rates: A key impact of the programme has been the availability of loans at low interest rates through the SHG. Access to low-interest loans has enabled SHG members to engage in small business activities, and/or to borrow for exceptional events such as healthcare, funeral costs, etc. Traditional moneylenders charge significantly higher interest than the SHG. (See the specific case study annexes for more detail, as the rates varied by area.) Furthermore, the interest payments are ploughed back into the SHG fund, so ultimately benefit the community. While this could not be quantified, it is an important benefit, as the interest paid simply facilitates more lending at low rates through the SHG. To ensure a fair comparison, the average loan size for the control group is held constant for the SHG

group as well, with the change in loan rate representing the difference in loan costs. It should be noted, however, that in most cases loan amounts have increased significantly in the SHG communities, as a result of greater access to loans through the SHGs, as well as decreased loan rates enabling greater borrowing.

Maintaining assets: Households reported that, thanks to the SHG, they were no longer forced to have to sell assets at stress times for decreased prices. A key benefit of the SHG is that households are much more financially secure and therefore are much less exposed to stress sale of assets, maintaining assets at a higher value. Stress sale of assets are assumed to occur only in drought times, which are assumed to take place once every five years.

Composting: Training has brought a wide range of benefits to communities, and some of these have brought additional savings. Not all of these could be quantified. (For example, training resulted in increased use of fuel-saving stoves, which has led to fuel savings, decreases in deforestation and health benefits – but data was not available to quantify these with any rigour.) However, composting techniques were cited in several programmes as bringing benefits, including decreased spend on fertilisers. This was quantified for the Wolaita and Fincha & Shambu programmes.

The impacts of the SHGs extend far beyond these four benefits: many SHG groups have implemented activities such as WASH projects, improved agricultural practices, building schools, etc, that could not be quantified here. Furthermore, the benefits that are quantified here have many knock-on benefits that could not be quantified with available data. For instance, expenditure on food has increased significantly, on both quantity and quality, which will result in greater food security and nutritional outcomes. These have benefits such as improved health, improved attendance at school, and improved lifetime earnings, which were not included in the CBA. There have also been significant gains for girls and women – both in terms of self-confidence as well as outcomes such as greater attendance at school. **There is no doubt that the benefits quantified here are a significant understatement of the transformational impact that has occurred in these communities.**

Tables 2, 3 and 4 present the quantitative analysis of impacts in each of these categories of benefit, for each of the six programmes. All figures are presented in Ethiopian Birr. (At the time of writing, the exchange rate is approximately 28 Birr to £1, or 25 Birr to €1.) Note that these figures cannot be added together: all benefits accrue every year over a person's lifetime, whereas education is modelled only for those years that a child is in school.

Increased income is the largest area of impact (on a yearly basis). As an example, incomes without the project range from £390 to £1,000 per household per year (€458 to €1,174), most being at the lower end of the scale. As a result of the SHGs, reported incomes have increased to between £685 and £1,444 per household per year (€804 to €1,344).

Table 2: Data analysis: Integrated Urban Development, Nazareth and Hawassa

	Nazareth			Hawassa		
Ethiopian Birr	without	with	change	without	with	change
OUTCOMES:						
Income (exp)	15,637	35,236	19,599	28,301	40,753	12,452
Education	21,034	39,000	17,966	23,790	39,000	15,210
Interest on loans	36	7	29	5	2	3
Sale of assets	30	50	20	32	54	22
Compost	n/a	n/a	n/a	n/a	n/a	n/a

Table 3: Data analysis: Food Security Programme Wolaita, and Church Mobilisation Gilgal

	Wolaita			Gilgal		
Ethiopian Birr	without	with	change	without	with	change
OUTCOMES:						
Income (exp)	11,918	19,320	7,402	11,080	23,017	11,937
Education	10,980	18,000	7,020	10,980	18,000	7,020
Interest on loans	563	9	554	660	28	632
Sale of assets	46	78	32	685	1,165	480
Compost	1,120	560	560	n/a	n/a	n/a

Table 4: Data analysis: HIV/AIDS Programmes: Leku and Fincha/Shambu

	Leku			Fincha & Shambu		
Ethiopian Birr	without	with	change	without	with	change
OUTCOMES:						
Income (exp)	11,680	28,339	16,659	11,126	28,054	16,928
Education	10,980	18,000	7,020	9,708	18,000	8,292
Interest on loans	2,735	64	2,671	1,332	25	1,307
Sale of assets	755	1,284	529	75	128	53
Compost	n/a	n/a	n/a	75	37.5	37.5

4.2.3 Valuation of capital formation

Evidence was gathered on the capital formation that has occurred in SHG households. This was evident both in terms of asset accumulation, as well as expenditures. All data is compared against control group data for similar communities.

Capital formation is not incorporated into the CBA model *per se* (as that would double-count with income). Rather, it is evidence of how people use their increased income over time, and helps to show the transformational change that has been occurring.

Assets

SHG members reported increases in their asset base. Savings are the monies put into the SHG by its members on a weekly basis, as recorded in their passbook (the records that they keep on monies saved through the SHGs). 'Capital' refers to the overall value of the SHG fund, and comprises savings, fines (imposed for people coming late to meetings or not attending without permission, late loan repayments etc), interest earned from loans provided, interest earned from deposits in banks and funds generated through group IGA/business. The figure for capital is recorded in the table below because, if the SHG were dissolved, this is the sum that would go to the SHG members, and therefore represents the full value of their savings.

SHG members also reported increases in household assets (both quantity and type), as well as housing. (Many families reported that they had been able to extend their house.)

Expenditures

As described above, expenditures are used as a proxy for income, and the increases reported above are taken from the evidence presented below.

There is strong evidence that SHG households are using their income to pay for private school and high-quality healthcare. The government of Ethiopia's current policy requires all children to attend first-cycle primary school at government-run schools. SHG members are increasingly choosing to send their children to private school, because they now have the income to do so and appreciate that their children will get a better education. In Fincha and Shambu, while enrolment in private school had not increased, SHG households that had previously relied on external sources to support school costs such as books and uniforms are increasingly relying on their own funds to do so. This increased expenditure is in addition to the rise in enrolment quantified above.

While it was not possible to quantify the changes in health status, there was a clear indication in the data collected that SHG households are also increasingly spending money on private clinics in order to get better healthcare.

Table 5: Data analysis: Integrated Urban Development, Nazareth and Hawassa

Ethiopian Birr	Nazareth			Hawassa		
	without	with	change	without	with	change
ASSETS:						
Capital	0	1,512	1,512	0	509	509
Household assets	47,640	77,179	25,539	2,275	22,122	19,847
Housing	13,200	27,200	14,000	42,918	104,625	61,707
EXPENDITURES:						
Food	15,512	31,938	16,426	27,010	35,040	8,030
Education	0	2,415	2,415	526	972	446
Clothing	125	883	758	765	4,741	3,976

Table 6: Data analysis: Food Security Programme Wolaita, and Church Mobilisation Gilgal

Ethiopian Birr	Wolaita			Gilgal		
	without	with	change	without	with	change
ASSETS:						
Capital	0	150	150	0	169	169
Household assets	1,687	1,956	269	1,100	4,092	2,992
Housing	2,105	13,950	11,845	13,573	20,930	7,357
EXPENDITURES:						
Food	11,680	18,180	6,500	10,950	22,777	11,827
Education	n/a	n/a	n/a	n/a	n/a	n/a
Clothing	238	1,140	902	130	240	110

Table 7: Data analysis: HIV/AIDS Programmes, Leku and Fincha/Shambu

Ethiopian Birr	Leku			Fincha & Shambu		
	without	with	Change	without	with	change
ASSETS:						
Capital	0	222	222	0	209	209
Household assets	2,800	3,244	444	n/a	n/a	n/a
Housing	n/a	n/a	n/a	6,880	9,920	3,040
EXPENDITURES:						
Food	11,539	27,959	16,420	10,950	27,375	16,425
Education	n/a	n/a	n/a	50	394	344
Clothing	141	380	239	126	285	159

4.3 Identification of risk reduction measures and costs

Actual costs are taken for each programme – between four and ten years depending on how long the programme has been operating. Further to this, actual costs are inflated by 15 per cent to account for head office overheads. Actual costs are provided for each programme in each of the programme annexes, and a summary table is included below.

The model runs over a minimum of 20 years, and hence future costs were estimated using evidence from Nazareth. The costs to implement the Nazareth programme are likely to be an overstatement, as this was the first experience of running an SHG programme. The programme also shows clear evidence that SHGs start to ‘graduate’ about year ten; at this point, in Nazareth, the first FLA was officially recognised, and SHG growth has been taken on by the CLAs and FLAs directly.

The average cost per SHG member in Nazareth is 147 Birr (£5 / €6) per member per year for ten years (equivalent to less than £1 / €1.2 per beneficiary considering the entire household benefits). This figure is applied to years in the model for which actual budget figures are not available.

Table 8: Actual programme costs

Total programme costs	Nazareth	Hawassa	Gilgal	Wolaita	Fincha/ Shambu	Leku
Ethiopian Birr	6.1m	4.1m	0.9m	1.7m	1.8m	2.2m
GBP	£211k	£144k	£33k	£57k	£64k	£75k
Euro	€250k	€171k	€39k	€68k	€76k	€89k

SHG expansion happens organically and can quickly go to scale. As described in the methodology section, growth is assumed to accrue at 20 per cent per year,

until market saturation is reached at 60 per cent of the total population. Costs are assumed to be in line with growth and graduation.

Further to this, **costs for the programme are low**. As an example, training costs were evaluated for each programme. Typically, once trained, SHG groups will pass that training on to other members, at a reduced cost. Trainings cover a range of topics, including composting, sustainable agricultural techniques, sewing, the use of fuel-saving stoves, to name but a few. As a result, each of these trainings contributes directly to SHG member's livelihood activities and income generation. To demonstrate some of the cost efficiencies that can be realised in the SHG model, an estimate of training costs was made for both control groups and SHG groups.

Depending on the programme, **training implemented via conventional means would have inflated programme costs by as much as 50 per cent**, demonstrating the significant potential for cost savings via this model.

4.4 Cost benefit and sensitivity analyses

4.4.1. Overview

The cost benefit analysis uses three models, as described in the methodology:

- The individual SHG model looks at a typical SHG, modelled over 20 years, assuming graduation in year ten.
- The market penetration model applies costs and benefits until market penetration of 60 per cent of the population is reached, and then continues until graduation of the final group, ten years later. This model assumes that the benefits realised in the focus group discussions are applicable to the whole population of SHGs.
- The donor-funded model simply adapts the market penetration model to include costs for the first ten years only. Clearly, the SHGs incur ongoing costs as they expand; however, these costs are internal, and this model is designed to show the returns to only those dollars invested by external agencies.

Benefits are delayed in the model until year two. While benefits have been shown to accrue in year one, benefits have not yet reached their full potential. It was difficult to estimate the proportion of benefits accruing in year one, and therefore a conservative stance was taken, with benefits delayed until year two.

Education is averaged over 20 years, assuming three school-age children per SHG household (based on national statistics and SHG statistics). This is to account for the fact that SHG families are likely to have children at different ages, attending school at different times, and hence the benefits are spread over a longer timeframe (rather than assuming a full six years of schooling benefit up front).

In the case of Nazareth and Hawassa, the two longest-running programmes, SHG members interviewed were from long-standing SHGs. Hence the data on benefits represents households that have been in the programme for eight to ten years. In order to account for this in the model, total benefits were estimated to accrue at a rate of ten per cent each year, using straight-line appreciation, reaching total estimated benefits in year ten. The other programmes have not been running for as long, and therefore this bias is not prevalent.

4.4.2 Baseline findings

Table 9 below summarises the benefit-to-cost ratios (BCRs) for each programme, and for each of the three scenarios described above.

Table 9: Baseline BCRs – with appreciation in longer-running programmes

BCRs	Nazareth	Hawassa	Gilgal	Wolaita	Fincha/ Shambu	Leku
Scenario 1: Individual SHG	115:1	76:1	116:1	58:1	165:1	173:1
Scenario 2: Market penetration	140:1	97:1	112:1	70:1	130:1	124:1
Scenario 3: Donor-funded	320:1	210:1	400:1	238:1	285:1	222:1

Clearly, the SHG programme is delivering substantial returns on investment. These figures are some of the highest that have come out of recent literature using cost benefit analysis to assess impact.¹⁰ The individual model gives a sense of the return on one SHG; this can then be scaled up, and is likely to result in economies of scale as it is expanded. The full programme model shows just this – the kinds of returns that can be expected at scale. However, this also assumes that the same level of benefit described in the focus groups will be realised across the whole SHG population. This is not an unreasonable assumption, but equally is not statistically significant, so must be viewed with some caution. The donor-funded model indicates that there is a significant gain for every donor dollar spent, as the donor funds build the programme allowing replication for years to come.

It is interesting to note that there is some differentiation between the programmes. These ratios really have to be compared in light of the data presented in the preceding sections. Some observations:

- The three longest-running programmes, Nazareth, Hawassa and Wolaita, have benefits scaled using straight-line appreciation¹¹ in the model, to account for the fact that the evidence presented is from SHG members who have been in SHGs since the start of the programme; newer SHG members may not have realised a similar level of benefit. This reduced the benefits fairly significantly in the first years of the model. However, the data that is inputted into the model – changes to income, education, loans and stress sales – is actually broadly similar across all programmes. In other words, **SHG members in the youngest programmes are reporting similar increases in income to those who have been in the longest-running programmes.** (Wolaita is the one exception to this, where incomes are lower. This is attributed to the fact that most respondents in Wolaita have large families, small land holdings, limited off-farm income-generating opportunities, and little or no livestock. They are mainly dependent on incomes generated from farming and, as a result, their monthly income is comparatively low.)

¹⁰ See for example: C Cabot Venton and S Selby (2013) *Applying cost benefit analysis at a community level: a review of its use for community based climate and disaster risk management*, Tearfund and Oxfam GB, UK.

¹¹ I.e. the value appreciates evenly each year until it reaches its maximum.

- Rather, the difference in recorded impact is in asset accumulation – which does not enter into the model because it is an asset base not a cash flow. In other words, as your income increases, you have more disposable income that allows you to buy assets for your households. **The data for the longer-running programmes shows significant evidence of asset accumulation** – demonstrating that income has consistently been converted into a greater asset base, at least in terms of household assets and housing. Asset accumulation can be an important sign of improving resilience.
- If the straight-line appreciation of benefits is removed from the longer-running programmes, their ratios would look similar to those of the newer programmes, and this in fact may be a more accurate representation of the SHG progression. Table 10 adjusts Nazareth, Hawassa and Wolaita, removing the straight-line appreciation.

Table 10: Baseline BCRs – without appreciation in longer-running programmes

BCRs	Nazareth	Hawassa	Gilgal	Wolaita	Fincha/ Shambu	Leku
Scenario 1: Individual SHG	188:1	124:1	116:1	81:1	165:1	173:1
Scenario 2: Market penetration	151:1	112:1	112:1	73:1	130:1	124:1
Scenario 3: Donor-funded	345:1	244:1	400:1	248:1	285:1	222:1

4.4.3 Sensitivity analyses

Sensitivity analysis was used to test key assumptions, using the individual SHG scenario as the most conservative model.

- The discount rate was tested at three per cent and 15 per cent (as compared with ten per cent in the baseline). The discount rate is used in such analysis to reflect the time value of money – ie one would rather have a dollar today than a dollar tomorrow. Discount rates for development projects are often about ten per cent, though the high rates of inflation in the country suggest that the discount rate could be higher. Counteracting this, many argue for lower discount rates for development and environment projects, with the argument that these projects are specifically designed to improve life for the next generation as much as this generation, and therefore should not be discounted.
- The project lifetime was altered to ten and 30 years (from 20) assuming benefits accrue for a shorter/longer timeframe.

The results of the sensitivity tests are reported in Table 11 below.

Table 11: Sensitivity analyses – individual SHG model

BCRs	Nazareth	Hawassa	Gilgal	Wolaita	Fincha/Shambu	Leku
Baseline	115:1	76:1	116:1	58:1	165:1	173:1
Project lifetime: 10 years	57:1	37:1	80:1	32:1	113:1	119:1
Project lifetime: 30 years	138:1	91:1	129:1	67:1	185:1	193:1
Discount rate: 3%	178:1	117:1	152:1	85:1	217:1	227:1
Discount rate: 15%	89:1	59:1	100:1	46:1	143:1	150:1

5 Conclusions and recommendations

5.1 Conclusions

The SHG model delivers very high returns, as much as £173 for every £1 spent, and is demonstrating transformational change. In fact they are some of the highest returns in the development and risk reduction literature on CBA. And it is clear that there are many benefits of the SHGs, such as improved health and better nutritional status. These were not quantified for this analysis and would only strengthen findings. Transformational change is evident: SHG members and their families are targeted from among the poorest of the poor, and are now reporting a step up in wealth group, as they are increasingly able to access good-quality education and healthcare.

Further to this, returns to donor funding are very high. Because the SHG grows organically, the initial donor investment delivers exponential returns as the first SHGs develop and replicate new SHGs.

Cost effectiveness is driven by high impact and low costs. The model is based on a number of factors that seem to be driving returns.

- First of all, it works by mobilising communities to invest in their priorities, and hence has high levels of buy-in and commitment. The very basis of the model is **community empowerment**, which fosters community-led development.
- The model fosters **long-term commitment**. A key factor in realising gains is ensuring that gains subsist beyond a two- or three-year investment, and SHGs have seen ten years of support.
- **The costs of realising SHG benefits are low and internal**. Investment is required to start the SHG formation, and provide ongoing support, but once growth has started, market penetration is rapid, as a result of organic growth (eg existing SHGs build the capacity of new SHGs).
- It provides an **internal safety net**. Rather than relying on outsiders – donors, NGOs or moneylenders – for ‘safety net’ support in times of crisis, the model fosters support within the SHG by using special savings accounts. It also builds relationships of trust between SHG members, so that they can support each other in hard times.

SHG expansion happens organically and can quickly go to scale. The growth rate is high among all of the SHG programmes, even in early years, averaging approximately 20% each year in the Nazareth programme. The Nazareth Cluster Level Associations are aiming this year for each SHG to foster the creation of a new SHG, which will lead to a potential doubling of SHGs. The Gilgal church mobilization programme has used a model of capacity building through the churches, which has resulted in very rapid market penetration across large parts of the country. ***In fact, mobilization via the church network has been a critical factor in taking the programme to scale, by facilitating penetration via a strong network of community based faith groups.*** Because the programme is self-sustaining, growth results in higher returns to the initial investment.

The SHG model has the potential to significantly contribute to government of Ethiopia plans for development and transformation.

In particular, the SHG approach could support the realisation of the Government Growth and Transformation Plan (GTP) and the enforcement of policies in favour of poor people through the formation of the Federal Level Association (FLA) structure. Because it has government recognition, the FLA can now provide legal protection to all SHGs that are registered under it. Furthermore, it can own property and build up assets as a group and raise both local and international funding to support SHGs. It has access to different forums, has the right to establish networks and has the right to set up and run its own micro-finance initiative (MFI) or insurance scheme. It can also gain access to MFI or act as guarantor to members to access MFI loans, access services from government institutions and sign cooperation agreements representing member SHGs.

The SHG model has substantial benefits for women and girls. It is clear from the evidence that the SHGs are having a significant impact on women. FGDs consistently report that women have increased confidence and voice, both at home and within the community. They have greater decision-making power in their households. Several of the programmes have raised awareness of certain issues, leading to a reduction in the incidence of female genital cutting (FGC), for example. Girls are being sent to school for the first time. WASH interventions are cutting the time it takes to collect water, as well as creating better sanitation facilities, both of which can have a significant impact on girls.

The SHG model reduces religious and ethnic tensions. SHG members are selected from among the poorest people in a community, regardless of their religious beliefs or ethnicity. As a result of the strong, trusting and loving relationships they develop together, pre-existing tensions between religious and ethnic groups ease, giving way to supportive relationships. This results in communities working more effectively together to address common needs, and this was a common and prominent theme coming out of the FGDs.

The SHG model could complement other programmes, such as the PSNP. The SHG programme costs an average of £10 (€12) per beneficiary over ten years, or £1 (€1.2) per year. It is difficult to make a direct comparison with the cost of the PSNP, because the PSNP beneficiaries can be in the programme for a varying numbers of years. Nonetheless, based on the data available, the cost of the SHG programme for ten years is half the cost of one year of PSNP support. The PSNP provides an alternative model to late humanitarian response, achieving significant cost savings and an earlier response. The SHG model could play a key role in taking the PSNP beyond its current impact in helping beneficiaries to 'graduate'. For example, the PSNP Plus programme, launched by USAID and implemented by CARE International and a consortium of NGOs, aims to move households towards graduation from PSNP through market-driven approaches to diversify their livelihoods, build assets and link to financial services and markets. The SHG model could offer a complementary approach that can be taken to scale.

The SHG model delivers both humanitarian and development gains. The SHG programme was initially conceived as and remains very much a development programme. However, it is working with the poorest of the poor, in a country that suffers from protracted crises as a result of drought and the variety of factors that exacerbate it. As a result, the SHG is not only providing long-term transformational

change, but it is also providing evidence that communities can cope better with droughts and other shocks as a result of their internal 'safety nets', even within the first few years of SHGs being set up.

However, in order to deliver these gains, the SHG model requires a shift in mindsets. As highlighted above, the success of the SHG approach depends on a long-term commitment. (Typically, development projects tend to last three to five years.) The approach is also very dependent on community empowerment. It requires a shift from a resource-driven approach to development to an approach that is focused on long-term transformation.

5.2 Recommendations

A variety of recommendations can be drawn from the analysis, and apply to donors, NGOs and the government of Ethiopia:

- Expand and scale up the SHG programme within Ethiopia. The findings from the analysis are exceptional, and demonstrate transformational change in the communities where the SHG programme exists. The results further suggest that significant value for money can be achieved by expanding this programme, with substantial opportunities to take it to scale.
- Conduct further qualitative evaluation to complement the quantitative analysis and to identify the key success factors associated with this model. In particular, SHG models have been tried in other contexts, not necessarily with the same success. It is therefore necessary to identify what it is about this model and the model in India that makes the approach particularly successful, and the types of contexts/conditions in which this works. It is also necessary to translate these findings into good practice. For example, similar initiatives have started by providing money first; it has been found with the Tearfund programme that this approach can create tension and competition, which undermines the model.
- The SHGs assessed in this CBA follow an approach that does not provide external start-up capital to the groups, and this was identified as a critical success factor. This approach is not common across all similar programmes. There is a need for greater harmonisation of the approach at the levels of both implementing organisation and donors (a principle embraced by the Paris Declaration). One potential model that could be investigated for such harmonisation is the Indian Self-help Promoting Institutional Networks (SPINs) group, which supports harmonisation across actors. A similar network could be developed for Ethiopia (and more widely).
- Consider other countries where this model would be suitable for replication. Facilitate learning between the Tearfund Horn of Africa Regional team and other country teams and NGOs.
- Institutional and other donors should look at the applicability and replicability of this model and potential areas to expand the programme. The initial donor

investment delivers returns at an exponential rate, and as such can deliver very high value for money. However, it is critical that donors also understand that this model requires longer-term support than current standards of practice and funding cycles. The model needs to empower people to do things for themselves, rather than having things done for them. As such, it requires a shift in mindsets. Having said this, the results speak for themselves, and should help to justify and prompt a shift in the way in which funds are provided to such programmes.

- Expand monitoring and evaluation (M&E) for the SHG programme to collect more systematic data on impacts, especially those that we could not quantify here, such as health impacts, HIV & AIDS impacts and WASH impacts. There was substantial evidence of other gains that could not be included in the model. Systematic collection of data, at regular intervals, will help to augment this process. In particular, it is really important to ensure that the data collected is translated into Excel spreadsheets that can be analysed so that best use can be made of the data.
- Government policy needs to support the expansion of the SHG programme through, for example, local church-based initiatives. Policy and practice also need to support the healthy development of SHGs, Cluster Level Associations and Federal Level Associations so that they can access appropriate services and opportunities at the right time.
- Identify ways to expand on the SHG programme: For example:
 - The SHG programme could be a useful mechanism for increasing graduation from the PSNP programme.
 - Access to external loans from micro-finance initiatives or banks could help to increase SHG programme impacts, by expanding the sources of funding available (and size of loans) for household productive use. (It is, however, critical that this is **only** when they have reached a sufficient level of maturity to manage these well to develop their businesses.)

Annexes

The Annexes are structured as follows:

- Section 1.1 gives an overview of the programme activities
- Section 1.2 describes the overall impact of the programme, in terms of both qualitative and quantitative benefits.
- Section 1.3 describes those benefits that were quantified for this study.
- Section 1.4 describes the SHG programme costs.
- Section 1.5 presents the findings from the CBA model.

Annex A: Nazareth

1.1 Brief overview

1.1 Programme activities

In 2002, the then Urban Ministries Coordinator of Ethiopian Kale Heywet Church (EKHC) established the first five SHGs in Nazareth town, after learning about the establishment and development of SHGs from India. Nazareth is a major town about 55 miles east of Addis Ababa in the Oromiya region. It is a town of approximately 220,000 people and is situated on the Djibouti to Addis Ababa arterial road, which Ethiopia depends on for the majority of imported and exported goods.

After 100 of the poorest women in Nazareth formed the first five SHGs, interest started to grow. By the end of the first year, 34 SHGs were established and at the end of 2012 this had increased to 411. Growth is projected to continue in the future so that potentially SHGs could impact 60 per cent of the population. By the end of 2003, a second tier of what are known as Cluster Level Associations (CLAs) was starting to form. The CLAs are formed from 8 to 12 SHGs who elect two members each to serve on the CLAs. As with the SHG process, the overall membership, particularly those participating in the CLAs, discuss and agree on issues, thus establishing their by-laws. This includes determining criteria by which to assess whether a SHG is ready to become part of a CLA, how members should be elected and re-elected, what term they should serve, the overall functioning of the CLA and what support it provides to SHGs. The CLA is empowered to take over the support that was previously being provided by facilitators. In 2012, there were 24 CLAs operating effectively, supporting both the development of member SHGs and starting new SHGs.

In 2008 the project supported the community of SHG members in Nazareth to develop a Federal Level Association (FLA). The role this level of the institution plays and how members should be elected and serve was discussed extensively with the SHG members who then elected seven members to serve on the FLA. A process to become registered and formally recognised with the government in Nazareth was then facilitated and in 2011 the FLA was able to sign an agreement of registration with the government.

Over the years, Kale Heywet Church and Tearfund have worked together with others to strengthen the capacity of individual SHG members and the overall SHG institution. There has been direct support for learning on various issues, such as HIV, literacy, hygiene and sanitation, business development etc. Where others can provide support more effectively, the focus has been on networking; most recently this has included linking SHGs to Micro Finance Institutions (MFIs) in Ethiopia to support access to external loans. The support has continually focused on empowering the SHG members and the overall institution so that people can do things for themselves with the resources they have.

Like all SHG work in Ethiopia that Tearfund supports, the success of SHGs has been dependent on the relationships the members have with one another at all levels. The approach has proved successful at supporting SHG members to transform their own and their household members' lives. This has required both relational and financial support through the establishment of saving and loans schemes at SHG level and practical support through training and capacity building. As the structure of the CLAs and FLA has matured, the members themselves have progressively taken on the responsibility of nurturing both the development and replication of the approach in Nazareth town; this programme is now reaching out into surrounding communities. The main Nazareth town project is now largely self-supporting but Kale Heywet Church and Tearfund will continue to nurture a relationship with the members to support further refinement and improvement to the SHG process and institutional capacity.

1.2 Impact assessment

1.2.1 Overview of impacts

The impacts of the Nazareth SHG programme are extensive and, because the programme has been running for so long, it demonstrates the kind of transformational change that can occur.

Table A1 below details the observed impacts, documented according to each of the five Sustainable Livelihood Framework (SLF) categories.

Table A1: Impacts of SHG programme

Elements at risk	Description of elements at risk without SHGs	Description of elements at risk with SHGs	Quantifiable for inclusion in CBA?
Physical	<ul style="list-style-type: none"> • Inability to access basic services in the town due to lack of money for transport and medical expenses • Limited access to housing facilities 	<ul style="list-style-type: none"> • Access to services increased due to improvement in income • Increased access to better housing through rentals or buying own house due to increased income 	<p>No</p> <p>Yes</p>
Financial	<ul style="list-style-type: none"> • Low income not sufficient enough to meet basic needs such as food, shelter, medication etc • Limited diversification of income with major focus on traditional income-generating activities (IGA) such as beer making, <i>Injera</i> baking, daily labour, grain retailing, dependence on husband's income • Limited income opportunities to build assets. Assets owned consisted of straw mattress, straw table, kitchen utensils, radio, wooden chair and table • Assets liquidated to cope with inflation ie consumption needs of households, medication for sick child (coat, gold, sheep, and bed). Traded household furniture for food • Low food intake: 2 meals a day, mainly cereal-based (no milk, meat and vegetable in the diet) • Families only able to buy second-hand clothes 	<ul style="list-style-type: none"> • Highly diversified income from sheep rearing, cattle/sheep fattening, poultry, dairy farm, retail shop, pottery, weaving, milk, milk products, fruit, vegetable selling etc, due to new IGA skills and loan from SHGs. Sufficient for meeting basic needs • Asset build-up and quality changed due to rising income. Assets constituted bed, TV, sofa set, fridge, stove, sideboard, tape, three-wheelers, mobile phone, donkey, cupboard, residential house, computer, sewing machine • Improved ability to cope with stress situation by accessing loans from SHGs. Asset build-up and increased resilience • Better food intake in terms of quality and quantity (3 meals and above, milk, meat and vegetable) 	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>

	<p>once a year for family members</p> <ul style="list-style-type: none"> • Rely heavily on local money leaders to access loan at 120% interest rate in majority of cases • Limited knowledge about the importance of savings and saving culture 	<ul style="list-style-type: none"> • Increased ability to buy new clothes 3 times a year for family members • Increased access to loans with an affordable rate of 24% as and when they need it • Developed savings culture away from undue expenditure on consumables during festivities 	<p>Yes</p> <p>No</p>
Human	<ul style="list-style-type: none"> • Limited opportunity to access skills from other people due to a combination of low income, high service charges and low social status • Families unable to send their children to private school due to shortage of money for fees and uniforms • Limited awareness of family planning and HIV • Members do not know what the status of HIV has been 	<ul style="list-style-type: none"> • Increased opportunity for accessing skills from members of SHG (basic business skills, sewing clothes, IGAs) • Increased capacity to send their children to private school • Increased awareness of family planning with increased uptake of contraceptives and better awareness of HIV, due to SHG ability to access these services • Members know their HIV status by testing voluntarily 	<p>No</p> <p>Yes</p> <p>No</p> <p>No</p>
Natural	<ul style="list-style-type: none"> • Limited awareness of environmental protection • Widespread use of charcoal for preparing food • Small number of trees and fruit tree planted 	<ul style="list-style-type: none"> • More awareness of the environment through SHGs' training on urban agriculture and environmental sanitation • Improved stoves or smokeless stoves introduced through SHGs • More trees were planted per person due to increased commitment for credit plus (community development) activities. Fruit trees (avocado, mango) planted as a result of awareness of the environment through SHGs 	<p>No</p> <p>No</p> <p>No</p>
Social	<ul style="list-style-type: none"> • Limited social relationship and networks • Gender inequality both in the home and outside 	<ul style="list-style-type: none"> • Social relationship and networks increased due to SHGs 	<p>No</p> <p>No</p>

	<p>environment. Male chauvinism prevailed at home. Isolation of women and lack of self-confidence with a great sense of hopelessness</p> <ul style="list-style-type: none"> • No support for the hurting and the most vulnerable people • Women unable to challenge or speak out against unhealthy cultural malpractices such as female genital mutilation (FGM) 	<ul style="list-style-type: none"> • Women are economically empowered, resulting in their acceptance in decision-making at home and in the community (social acceptance). Women are given responsibility at government/community-based organisations and other communities due to increased self-confidence and personal development nurtured in SHGs • Social security funds established to support the poor and the most vulnerable due to SHGs. Attitude to help others has generally increased • Women fight against cultural malpractices such as FGM 	<p>No</p> <p>No</p>
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1.3 Valuation of quantifiable impacts

Clearly, the SHG programme has had a positive impact on the beneficiary communities. Many of the benefits cannot be quantified *per se*. For example, it is not possible to monetise an increase in self-confidence. However, all of these impacts feed in to a greater self-sufficiency that can be reflected to some degree in monetary terms.

Further to this, because the SHG programme in Nazareth has been running for more than ten years, it demonstrates the kind of organic growth that takes place. Table A2 below documents the evolution of the SHG programme in Nazareth in terms of the number of SHGs and the number of SHG members.

The Nazareth town programme currently has 411 SHGs, with 6,620 SHG members. Total savings for the SHGs are 8,312,206 Birr, and total capital is 10,007,915 Birr.¹²

The Nazareth programme started with communities in Nazareth town and then an outreach project called CCMD was initiated in 2009 to reach out to communities on the outskirts of Nazareth and beyond. The Adama programme (which incorporates Nazareth town and surrounding Adama) has a total of 625 SHGs, with 10,665 SHG members. Nazareth town is the subject of this analysis here.

Table A2: Evolution of Nazareth SHG formation

Year	Number of SHGs	Number of SHG members (cumulative)
2002	5	100
2003	34	680
2004	83	1660
2005	98	1862
2006	122	2196
2007	146	2482
2008	162	2900
2009	289	4,967
2010	324	5,548
2011	333	5,679
2012	411	6,620

The analysis below is divided into three components:

- The first section documents the **valuation of quantifiable benefits** that have accrued as a result of the SHGs

¹² Savings are the monies put into the SHG by SHG members on a weekly basis, as recorded in their passbook. Capital refers to the overall value of the SHG fund, and comprises savings, fines (for people coming late to meetings or not attending without permission, late loan repayments etc), interest earned from loans provided, interest earned from deposits in banks and funds generated through group IGA/business.

- The second section documents the **valuation of capital formation** – in other words, the change in the asset base that has occurred as a result of improved income and a stronger culture of saving.
- Finally, this is followed by a discussion around the **costs** required to achieve these gains.

1.3.1 Valuation of impacts

The creation of SHGs has resulted in a variety of benefits at the community level, including:

- Increased income;
- Increased enrolment in education;
- Decreased interest rates; and
- Decreased stress sale of assets

The Table below quantifies these impacts. It uses data collected from 80 SHG members in the Nazareth area, and compares this with control group data collected from approximately 40 people in similar communities but who have not had SHG formation. The control group data is particularly important because it provides a proxy for what life might look like without the SHGs. Over ten years of SHG formation, a lot of factors have changed, and inflation has been high; hence a comparison of change within the SHGs would present a false picture of the impact of the SHGs.

The data is estimated per person, and is a weighted average per person so as to account for the fact that not everyone benefits from each category of benefit.

Assumptions

Income: It can be very difficult to get a clear picture on income, without bias. A common technique used in survey tools is to ask about expenditures as a proxy for income. Therefore, data on expenditures (see next section on valuation of capital formation for greater detail) is reported as a proxy for income.

Education: It should be noted that the increase in education is reported twice:

- It is likely, in the case of Nazareth, that the SHGs were resulting in increased enrolment in first-level primary (grades 1–4) before the government mandate for universal enrolment was initiated three to four years ago. However, it was not possible to quantify this due to lack of data, and hence it is mentioned only as a qualitative benefit.
- However, SHG members reported higher enrolment in private schools for first-level primary, as a result of an increase in disposable income. This is reported as an increase in expenditures in the section on capital formation.
- Further to this, focus group findings indicate that SHG members are sending all school-age children to school. For the analysis presented here, we compare regional gross enrolment rates by level with 100 per cent enrolment in SHG families to estimate the value of increased education days. This analysis is done through to grade 10; the level of enrolment in grades 11 and 12 was not clear, and therefore is not included, though it is very likely that SHG children will continue to further education, given evidence from the field.

Interest rates: It is important to note that the data on loans is calculated using the size of loan and number of people taking loans for the control group; the only factor that changes is the interest rate charged. This is essential to ensure comparability – the amount saved on a given loan amount. In actual fact, the proportion of people taking loans in the SHG group is significantly higher, as is the loan size (probably because the interest rate is so much lower, and loans are more readily available).

Table A3: Valuation of SHG benefits

Intervention	Magnitude of impact 'without'	Magnitude of impact 'with'	Values/assumptions	Calculation of losses/benefit without SHG	Calculation of losses/benefit with SHG	Total benefit (per person, weighted avg)
Diversified income sources	Undiversified source of income and assets	Increase in income as a result of access to loans, training, etc	<p><u>Without:</u> Average expenditure in control community is 15,637 Birr per year</p> <p><u>With:</u> Average expenditure in SHG is 35,236 Birr per year</p>	Total annual expenditure = 15,637 Birr	Total annual expenditure = 35,236 Birr	19,599 Birr
Education gains	1 st primary, grades 1–4, is mandatory for all. 2 nd primary is not mandatory and has limited enrolment	Increased enrolment in grades 5–10	<p><u>Without:</u> Gross enrolment rate in Oromiya region is 61.7% for grades 5–8; 38.4% for grades 9–10</p> <p><u>With:</u> 100% enrolment through to grade 10</p> <ul style="list-style-type: none"> • 4 years, 200 days per school year • Average daily wage rate (urban): 65 Birr/day (school 	Value of school days per person: (61.7% x 800 days x 32.5 Birr/day) + (38.4% x 400 x 32.5 Birr/day) = 21,034 Birr	Value of school days per person: (100% x 800 days x 32.5 Birr/day) + (100% x 400 x 32.5 Birr/day) = 39,000 Birr	17,966 Birr per child for additional enrolment in grades 5–10¹³

¹³ This benefit only accrues for the years that a child is in school, whereas the economic model runs over 20 years. To simplify inclusion in the model, this figure is amortised over the lifetime of the model. Given an average family size of 6–7, it is assumed that there are three school-age children per SHG family.

Intervention	Magnitude of impact 'without'	Magnitude of impact 'with'	Values/assumptions	Calculation of losses/benefit without SHG	Calculation of losses/benefit with SHG	Total benefit (per person, weighted avg)
			valued at half daily wage rate)			
Access to loans	High-interest rates on loans	Reduction in cost of borrowing through SHGs	<p><u>Without:</u> Money lender's interest rate is 120% per year. Average loan size 1000 Birr per year; average number of people who took loan per SHG is 2, or 3%</p> <p><u>With:</u> SHG interest rate is 24% (maximum). Average loan size 25,000 Birr per year/SHG member. 80 respondents or 100% of SHG members took loan</p>	Cost of borrowing is $3\% \times 1000 \times 120\% = 36$ Birr	Cost of borrowing is $3\% \times 1000 \times 24\% = 7$ Birr	29 Birr
Decreased stress sales	Households (HHs) are forced to sell assets at depressed prices to cover the cost of household essentials	HHs are no longer forced to sell at low prices and can preserve the value of their assets	<u>Without:</u> 9 out of 40 respondents (22%) liquidated their assets, average value of 135 Birr per person, affecting 22% of the control group population	$22\% \times 135 \text{ Birr} = 30$ Birr	50 Birr	20 Birr

Intervention	Magnitude of impact 'without'	Magnitude of impact 'with'	Values/assumptions	Calculation of losses/benefit without SHG	Calculation of losses/benefit with SHG	Total benefit (per person, weighted avg)
			<u>With:</u> Sales at normal times will be 70% more than the stress price.			

1.3.2 Valuation of capital formation

Evidence was gathered on the capital formation that has occurred in SHG households. This was evident both in terms of asset accumulation, as well as expenditures. All data is compared with control group data for similar communities.

The Table below lists the change in asset and expenditures over a ten-year period. The data is listed as a weighted average per person (SHG member). These figures apply to members that have been in the SHGs for eight years or more. (These groups were targeted during focus group discussions.)

Table A4: Valuation of capital formation

Category of asset/expenditure	Value without SHG	Value with SHG	Accumulation as a result of SHG
ASSETS			
Savings	No savings	Cumulative capital ¹⁴ = 10,007,915 Birr Average capital in each year for all SHGs = 1,000,791 Birr	Total increase over ten years: 10,007,915 Birr Average per person (6,620 SHG members): 1,512 Birr
Value of household assets	Items listed included bed, straw mattress, wicker table, clay pot, kitchen utensils, radio, chair, table, shelf, bench, sideboard, tape recorder, barrel The 40 control group members surveyed listed a total value of 1,905,606 Birr, or 47,640 Birr per member	Items listed included sofa set, DVD, cupboard, colour TV, fridge, three-wheeled motor, bed, donkey, grinder, mobile phone, dining table, satellite dish, spring mattress, goat, sheep, cattle, sewing machine, tape recorder, sideboard, chairs, kitchen utensils, video, electric stove, electric oven. The 80 SHG members surveyed listed a total value of 6,174,355 Birr, or 77,179 Birr per member	The total increase in asset value per person over an 8–10 year period is 25,539 Birr (or 2,554 per year), a 50% increase
Housing	Housing (control group): rented 14; private 13; dependent 8; govt. 5. 33% (13/40) live in private houses House value: 40,000 Birr Weighted average per person =	Housing: rented 22; private 54; dependent 1; govt. 3. 68% (54/80) live in private houses House value 40,000 Birr Weighted average per person = 68%	The number of people living in private houses has more than doubled over an 8–10 year period, with a weighted average increase of 14,000 Birr per person (or 1,400 per year)

¹⁴ The figure for capital is used here because, if the SHG were dissolved, this is the sum that would go to the SHG members, and therefore represents the full value of their savings.

	33% x 40,000 = 13,200 Birr	x 40,000 = 27,200 Birr	
EXPENDITURES			
Meals	HHs in the control group have an average of 2–3 (average 2.5) meals a day (cereal-based) @17 Birr/meal x 365 days = 15,512 Birr/year	HHs have an average of 3–4 meals (average 3.5) per day (more nutritious) @ 25 Birr/meal x 365 days = 31,938 Birr/year	SHG households are spending an additional 16,426 Birr per year on food, more than double control group HHs.
Education – 1 st level primary	No children go to private school	<ul style="list-style-type: none"> Total number of children going to private school: 41 out of 113 (or 36%) Average cost of private school – 6,708 Birr per child per year <p>Weighted average per person = 36% x 6708 = 2,415 Birr</p>	36% of SHG families are paying for private school, at a cost of 6,700 Birr per child per year, weighted average 2,415 Birr
Clothing	Control HHs buy on average 1 cloth/year valued at 125 Birr.	SHG HHs average 883 Birr/year	SHG households are spending an additional 758 Birr per year on clothing, more than 7 times that of control groups
TOTAL	15,637	35,236	19,599

1.4 SHG programme costs

Costs over the 11 years of programme operation in Nazareth are documented below. There are several categories of cost, namely:

- Tearfund and partner costs to establish the programme and provide ongoing support;
- Costs for CLA and FLA formation and activities;
- Training costs; and
- Monitoring and evaluation.

Table A5: Summary of total programme costs by budget item

Budget item	Total cost (Birr)
Personnel	1,048,281
Recurring & admin costs	772,072
Capital expenses	789,749
Direct programme costs	1,972,650
Microcredit scheme and loan revolving fund	615,829
Research, monitoring & evaluation	87,946
Total	5,286,527

Table A6: Summary of programme costs by year

Year	Total cost (Birr)
2002 (Jun–Dec)	72,500
2003	292,400
2004	257,141
2005	1,404,625 ¹⁵
2006	379,773
2007	885,130
2008	522,260
2009	470,034
2010	456,286
2011	331,554
2012	214,824
Total	5,286,527
Total + 15%	6,079,506

Costs are inflated in the model by 15 per cent to reflect head office overheads.

¹⁵ Note that a vehicle was purchased in this year, hence the elevated budget relating to this capital expense.

The model assumes that SHG members who have been in the programme for ten years ‘graduate’ – in other words, no longer require external investment. It took approximately ten years for Nazareth to reach the point where the FLA was established and recognised by the government of Ethiopia. This is taken as an indication that those SHGs are now largely self-sustaining (so, for example, in Nazareth each member of the CLAs is establishing a new SHG each, paid for internally, doubling the number of SHGs).

It is expected that SHG formation will continue to grow at a rate of 20 per cent (the average growth rate in the first ten years). However, it is assumed that SHG growth will stop when concentration has reached 60 per cent of the total population (based on evidence from the India programme on which this one is modelled). In Nazareth, with a total urban population of 222,035, SHG growth is capped at 22,000 SHG members (or 113,000 people based on six members per household), in year 17.

Clearly, new SHGs will require an initial ten years of support, and therefore costs required to sustain the SHG programme are estimated. The average cost per SHG member, per year, in Nazareth, is 147 Birr (or £5), and this is applied to all new SHG members in the growth model. However, as noted above, these costs will be borne internally by the SHGs for new growth formation once the ten-year mark is passed.

In addition, Nazareth is the first SHG programme, and hence has required some trial and error. Therefore, the model adds in an additional cost for three years of operation beyond year ten (estimated at 200k Birr, 150k and 100k respectively). This is specific to Nazareth, and it is not believed that this extra cost would be required on other programmes.

Training costs

The SHG model is very much focused on organic growth. Skills and training are passed on to SHG members, and these are passed on in turn through the SHG, and through the formation of new SHGs. As a result, benefits multiply, while costs shrink.

Training provides one good example of this. The analysis below estimates the external training cost, and compares it with the SHG training cost, as SHG members pass on skills to new SHG members. The analysis shows how internal training, at a lower cost, results in a cost saving of 177 Birr per person trained (weighted average). For the 6,620 members of the SHG in Nazareth town, this is equivalent to a total cost saving of 1.1m Birr, equivalent to approximately 18 per cent of the total programme budget, demonstrating significant cost efficiencies.

Table A7: Training costs

External training cost per person	SHG training cost per person	Cost saving (weighted average)
▪ Sewing: 2 members (3% of SHG) x 800 Birr/	▪ Sewing machine: 3% x 400 Birr/ month/	177 Birr

month/ member x 6 month = 144 Birr ▪ Fuel-saving stove: 20 members (25% of SHG) x 530 Birr/ member = 133 Birr ▪ <i>Injera</i> baking: 20 members (25% of SHG) x 250 Birr/member = 63 Total = 340	member x 6 month = 72 Birr ▪ Fuel-saving stove: 25% x 265 Birr/ member = 66 ▪ <i>Injera</i> baking: 25% x 100 Birr = 25 Total = 163 Birr	
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1.5 Cost benefit and sensitivity analyses

1.5.1 Baseline analysis

The cost benefit analysis (CBA) compares the costs with the benefits, using three approaches:

- 1) Individual case: The first CBA looks at an individual SHG with 17 members (average size), and estimates the costs and benefits over a 20-year lifetime. Costs are incurred for the first ten years at 147 Birr per person per year, and then it is assumed that the SHG 'graduates' and can continue accruing benefits for the subsequent ten years without further investment.
- 2) Market penetration: The second CBA takes the full programme data, and models the costs and benefits until the programme reaches saturation (using a 20 per cent growth rate, with saturation at 60 per cent of the population). The model is run until all members have graduated, in this case for 28 years. This model is therefore assuming that observed benefits can be extrapolated to the full programme.
- 3) Donor-funded: The two cases above assume full costs to achieve benefits – which is the approach that should be taken with CBA, regardless of where the funds come from. However, once the first group of SHGs reaches 'graduation', they are capable of sustaining growth of new SHGs internally. Therefore the model is run again for the whole programme, but accounting only for external funding in the first ten years (plus estimated funding for three more years specific to Nazareth, as described above). At this point, funding ceases as it is assumed that all new growth thenceforth is generated from within SHG clusters.

In all three models, benefits are weighted using straight-line appreciation over the first ten years. In other words, the total benefit that can be achieved was weighted by ten per cent in the first year, 20 per cent in the second year, and so on until 100 per cent is reached in year ten. This is because the SHG groups interviewed for this study had all been in the programme for eight to ten years, and therefore it would be unfair to assume the same level of benefit at the start of SHG formation.

Benefits are delayed in the model until year two. While benefits have been shown to accrue in year one, benefits have not yet reached their full potential. It was difficult to estimate the proportion of benefits accruing in year one, and therefore a conservative stance was taken, with benefits delayed until year two.

Education is averaged over 20 years, assuming three school-age children per SHG household (per national statistics and SHG statistics). This is to account for the fact that SHG families are likely to have children at different ages, attending school at different times, and hence the benefits are spread over a longer timeframe (rather than assuming a full six years of schooling benefit up front).

The benefit-to-cost ratio (BCR) is break-even if the ratio is 1:1. In other words, for every dollar invested, you get a dollar return. Anything over 1 indicates a positive return.

Table A8: Nazareth benefit-to-cost ratios

	BCR
Scenario 1: Individual SHG	115:1
Scenario 2: Market penetration¹⁶	140:1
Scenario 3: Donor-funded	320:1

1.5.2 Sensitivity analysis

Sensitivity testing is used to test certain assumptions in the model, to see how sensitive the findings are to these assumptions. In this case, the individual SHG model is adjusted as follows:

- Benefits are accrued for ten and 30 years (as compared with 20 in the baseline)
- The discount rate is adjusted to three per cent and 15 per cent (as compared with ten per cent in the baseline).

Table A9: Sensitivity analysis

	BCR
Baseline – individual SHG	115:1
10-year benefit stream	57:1
30-year benefit stream	138:1
Discount rate 3%	178:1
Discount rate 15%	89:1

¹⁶ In the case of Nazareth, actual costs are very lumpy, with significant jumps in costs. Given that the actual cost figures are used to estimate average yearly costs of 128 Birr per year over ten years, the same model was run but using this figure to smooth costs, resulting in a similar BCR of 189:1.

2.1 Brief overview

Introduction to the programme

In 2003, after first introducing the SHG programme in Nazareth in 2002 with EKHC, Tearfund supported an expansion of the programme to three other major towns in Ethiopia: Addis Ababa, Hawassa and Jimma. This was introduced using a new model, which first envisions and mobilises local churches to engage with developmental needs in their communities, known as the Church and Community Mobilisation for Development (CCMD) process. The church has taken full responsibility in identifying the urban poor, assessing the depth of poverty, forming SHGs and building the capacity of the poor to support their own development. In the past, the church has engaged with community needs using a welfare type approach that had minimal impact. The CCMD/SHG approach supports local churches to support holistic development much more effectively, efficiently and sustainably.

Hawassa sits on Lake Hawassa in the Great Rift Valley, located 167 miles south of Addis Ababa. It is a regional hub, a major commercial centre and the capital for the SNNP region. The population of Hawassa is about 140,000 people. The major economy of the area is based on coffee trading; the city is adjacent to major coffee-producing areas. As such, it attracts many migrant labourers. During the start of the CCMD/SHG programme, Hawassa was characterised by youth unemployment, poverty, child truancy etc. The Hawassa programme was intended to improve the livelihoods of the urban poor through the SHG approach where the direct beneficiaries are the poor and very poor women of the Hawassa town. The beneficiaries came from low- and very low-income groups, mostly unskilled, illiterate and with chronically poor health.

The first 44 SHGs were formed in 2003. The programme aimed at helping members believe in their own abilities, first by creating an environment of sharing and learning. Training is provided on communication skills, leadership, simple bookkeeping, savings and credit management, market assessment etc. The overall SHG institutions are founded on democratic principles, which enables members to participate effectively in the overall process. As with the other SHG projects, poor women are liberated from their oppressive relationship with money lenders through the establishment of saving and affordable loan schemes. The project supported, and continues to support, members to develop skills and knowledge to run and develop their businesses. Currently, there are 192 SHGs serving 3,040 of the poorest households.

In addition, the SHG members have established 15 CLAs to coordinate, develop and replicate the SHG approach.

2.2 Impact assessment

2.2.1 Overview of impacts

Table B1 below details the observed impacts, documented according to each of the five SLF categories.

Table B1: Impacts of SHG programme

Elements at risk	Description of elements at risk without SHGs	Description of elements at risk with SHGs	Quantifiable for inclusion in CBA/asset change?
Physical	<p>Loss of income due to inflation led to inability to construct sanitation facilities. Limited or no access to pit latrine led to open defecation, causing high incidence of diarrhoea and typhoid</p> <p>Living in dilapidated houses and shacks along and behind streets. Foot, donkey and horse cart used as a means of transportation</p>	<p>More access to sanitation facilities as a result of improved housing or ability to rent better housing. Occurrence of diarrhoea and typhoid dropped due to increased awareness among members in SHGs and sharing of information. SHG formed linkages with government health extension workers to access training resources</p> <p>Increased access to better housing. In addition to the old transportation system, tricycles are used</p>	<p>No</p> <p>Yes</p>
Financial	<p>General price rise on consumer goods and services (food, clothes, house rent, school fees, medication etc) and loss of income resulted in deterioration of living conditions of the poor and the most vulnerable</p> <p>High indebtedness due to high cost of borrowing including physical labour contribution</p> <p>Frequent liquidation of assets to meet basic needs of the household (food, shelter, clothing, medication etc). No social safety funds to protect assets from being sold to meet basic needs</p> <p>Declining frequency and quality of meal/ malnutrition</p>	<p>Increased income due to IGAs of women and men through SHGs</p> <p>Low cost of borrowing for SHG members</p> <p>Asset accumulation of SHG members and increased resiliency due to more opportunities to increase income. Set up social funds as an insurance mechanism to minimise risks of defaulting and support members in times of dire need</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>

	<p>Inability to buy clothing for spouses and children</p> <p>Limited knowledge about the concept and use of time, poor savings and money management</p>	<p>Frequency and quality of meals greatly improved to include meat, milk, fruits and vegetables</p> <p>Appropriateness and quality of clothing significantly improved for family members</p> <p>Improved time management. Awareness of the importance of saving turned in to behavioural change and practice</p>	<p>Yes</p> <p>No</p>
Human	<p>Frequent absence from work due to high morbidity. Children unable to attend school regularly due to illnesses (water-borne diseases)</p> <p>Limited number of children going to school</p> <p>No sharing of skills due to limited social interaction and exchange of talents</p>	<p>Increased capacity of members to access basic health services due to better income. Children are given priority for health services in the family</p> <p>Increased number of children going to school; more attending private schools</p> <p>Members have multiple skills because of regular sharing of talents and new skills among members (entrepreneurship, animal fattening, handicraft, painting, cooking, dairy farming, handicrafts)</p>	<p>No</p> <p>Yes</p> <p>No</p>
Natural	<p>Environmental pollution due to lack of sanitary facilities. Absence of waste disposal methods coupled with limited awareness of hygiene and sanitation</p> <p>Poor knowledge/awareness of environmental protection</p>	<p>Awareness of sanitation and use of facilities has reduced pollution and associated disease</p> <p>More trees are planted now than before due to training on environmental protection via SHGs. Awareness about environment increased through education in SHGs and CLAs</p>	<p>No</p> <p>No</p>

Social	Eviction of children from home into the streets of Hawassa as a result of family not being able to meet basic needs of households	Family fabric maintained, with children being raised in home environment	No
	Limited social relationship and social networks for the poor and vulnerable	Members became more visible in building loving relationships amongst themselves	No
	Poor relationship between husbands and wives. Heavy dependence of women on husbands. No power at home to decide on issues that concern the well-being of women	Relationship of women with their spouses improved. Wives financially support husbands and the household economy leading to better relationships	No
	Role of women: <ul style="list-style-type: none"> Limited acceptance of women in the community Women timid and unable to express themselves in public Isolation and lack of social networks 	Improved role of women: <ul style="list-style-type: none"> Acceptance of women in communities and government institutions increased significantly as they became vocal and self-confident on community development Women showed behavioural change in terms of self-confidence Ability of women demonstrated in leadership and establishing linkages with social networks in society 	No
	Poverty regarded as a curse from God that can never be tackled	Complete change of perception on personal identity, poverty, religious division, conflict, saving	No
	Poor religious and ethnic tolerance	High ethnic and religious tolerance	No
	Low self-esteem to unlock talents and skills people have	High self-confidence to use talents and run businesses of own choice due to a process of personal development in SHGs	No

2.3 Valuation of quantifiable impacts

Clearly, the SHG programme has had a transformational impact on the communities where it has been working. Many of the benefits cannot be quantified *per se*. For example, it is not possible to monetise a change in self-confidence. However, all of these impacts feed in to a greater self-sufficiency that can be reflected to some degree in monetary terms.

The Hawassa programme has been running for nine years, and has a total of 192 SHGs and 3,040 SHG members. The total savings of the SHG members are 1.2m Birr, and the SHG has total capital of 1.6m Birr.¹⁷ In 2008/09 the total number of SHG members was 3,700, and since that time the SHGs have seen a fluctuation in numbers. This is because the government has been engaged in a town rehabilitation programme in Hawassa, which resulted in many SHG members being displaced. Further to this, redevelopment of Hawassa pushed house rental prices up, and as a result many SHG members decided to move to the periphery of the town. Consequently, SHG formation has not continued with those households.

Table B2: Evolution of Hawassa SHG formation

Year	Number of SHGs	Number of SHG members (cumulative)	Savings (Birr)	Capital (Birr)
2004/05	44	707	40,062	56,055
2005/06	91	1502	111,499	154,826
2006/07	112	2100	230,605	323,772
2007/08	131	2480	378,929	597,901
2008/09	205	3700	642,347	990,753
2009/10	182	3226	630,334	911,021
2010/11	186	2934	836,424	1,058,262
2011/12	190	2300	1,109,519	1,454,763
Dec 2012	192	3040	1,196,683	1,547,707

The analysis below is divided into three components:

- The first section documents the **valuation of quantifiable benefits** that have accrued as a result of the SHGs
- The second section documents the **valuation of capital formation** – in other words, the change in the asset base that has occurred as a result of improved income and a stronger culture of saving.
- Finally, this is followed by a discussion around the **costs** required to achieve these gains.

¹⁷ Savings are the monies put into the SHG by SHG members on a weekly basis, as recorded in their passbook. Capital refers to the overall value of the SHG fund, and comprises savings, fines (for people coming late to meetings or not attending without permission, late loan repayments etc), interest earned from loans provided, interest earned from deposits in banks and funds generated through group IGA/business.

2.3.1 Valuation of impacts

The creation of SHGs has resulted in a variety of benefits at the community level, including:

- Increased income;
- Increased enrolment in education;
- Decreased interest rates; and
- Decreased stress sale of assets.

The Table below quantifies these impacts. It uses data collected from 58 SHG members, and compares this with control group data collected from approximately 30 people in similar communities who have not had SHG formation.

The data is estimated per person, and is a weighted average so as to account for the fact that not everyone benefits from each category of benefit.

Assumptions

Income: It can be very difficult to get a clear picture on income, without bias. A common technique used in survey tools is to ask about expenditures as a proxy for income. Therefore, data on expenditures (see next section on valuation of capital formation for greater detail) is reported as a proxy for income.

Education: It should be noted that the increase in education is reported twice:

- As with Nazareth, it is likely that the SHGs were resulting in increased enrolment in first-level primary (grades 1–4) before the government mandate for universal enrolment was initiated three to four years ago. However, it was not possible to quantify this due to lack of data, and hence it is mentioned only as a qualitative benefit.
- SHG members reported increased attendance at private school, and hence increased expenditures. This is reported as an increase in expenditures in the section on capital formation.
- Further to this, focus group findings indicate that SHG members are sending all school-age children to school. For the analysis presented here, we compare regional gross enrolment rates by level with 100 per cent enrolment in SHG families to estimate the value of increased education days. This analysis is done through to grade 10: the level of enrolment in grades 11 and 12 was not clear, and therefore is not included, though it is very likely that SHG children will continue to further education given evidence from the field.

Interest rates: It is important to note that the data on loans is calculated using the size of loan and number of people taking loans for the control group; the only factor that changes is the interest rate charged. This is essential to ensure comparability – the amount saved on a given loan amount. In actual fact, the proportion of people taking loans in the SHG group is lower, but the loan amount is more (probably because the interest rate is so much lower).

Table B3: Valuation of SHG benefits

Hazard magnitude: inflation						
Intervention	Magnitude of impact 'without'	Magnitude of impact 'with'	Values/assumptions	a. Calculation of losses without SHG	b. Calculation of losses with SHG	Total benefit (a-b)
Diversified income sources	Undiversified source of income and assets	Increase in income as a result of access to loans, training, etc	<p><u>Without</u>: Average expenditure in control community is 28,301 Birr per year</p> <p><u>With</u>: Average expenditure of each SHG member is 40,753 Birr per year</p>	Total annual expenditure = 28,301 Birr	Total annual expenditure = 40,753 Birr	12,452 Birr
Education gains	1 st primary, grades 1–5, is mandatory for all. 2 nd primary is not mandatory and has limited enrolment	Increased enrolment in grades 5–10	<p><u>Without</u>: Gross enrolment rate in SNNPR region is 73.8% for grades 5–8; 35.4% for grades 9–10</p> <p><u>With</u>: 100% enrolment through to grade 10</p> <ul style="list-style-type: none"> • 4 years, 200 days per school year • Average daily wage rate (urban): 65 Birr/day (school 	Value of school days per person: (73.8% x 800 days x 32.5 Birr/day) + (35.4% x 400 x 32.5 Birr/day) = 23,790 Birr	Value of school days per person: (100% x 800 days x 32.5 Birr/day) + (100% x 400 x 32.5 Birr/day) = 39,000 Birr	15,210 Birr per child for additional enrolment in grades 5–10¹⁸

¹⁸ This benefit only accrues for the years that a child is in school, whereas the economic model runs over 20 years. To simplify inclusion in the model, this figure is amortised over the lifetime of the model. Given an average family size of 6–7, it is assumed that there are three school-age children per SHG family.

Hazard magnitude: inflation						
Intervention	Magnitude of impact 'without'	Magnitude of impact 'with'	Values/assumptions	a. Calculation of losses without SHG	b. Calculation of losses with SHG	Total benefit (a-b)
			valued at half daily wage rate)			
Access to loans	High interest rates on loans	Reduction in cost of borrowing through SHGs	<u>Without:</u> Money lender's interest rate is 25% per year; average loan size in control group is 200 Birr per year. 3 control group respondents out of 30, or 10% took loans. <u>With:</u> SHG interest rate is 10%. Average loan size with SHG is 2100 Birr per year, 43 respondents or 75% took loans	The cost of borrowing is $25\% \times 200 \text{ Birr} \times 10\% =$ 5 Birr	Cost of borrowing is $10\% \times 200 \times 10\% =$ 2 Birr	3 Birr
Decreased stress sales	HHs are forced to sell assets at depressed prices to cover the cost of household essentials	HHs are no longer forced to sell at low prices and can preserve the value of their assets	<u>Without:</u> 7 out of 30 respondents (23%) liquidated their assets, for an average of 141 Birr per person <u>With:</u> Sales at normal times will be 70% more than the stress price	Asset liquidated: 23% of members $\times 141 \text{ Birr} =$ 32 Birr	54 Birr	22 Birr

2.3.2 Valuation of capital formation

Evidence was gathered on the capital formation that has occurred in SHG households. This was evident both in terms of asset accumulation, as well as expenditures. All data is compared against control group data for similar communities.

The Table below lists the change in asset and expenditures over a four-year period, weighted average per person.

Table B4: Valuation of capital formation

Category of asset/expenditure	Value without SHG	Value with SHG	Accumulation as a result of SHG
ASSETS			
Savings	No savings	Cumulative capital ¹⁹ = 1,547,707 Birr	Total increase over 9 years: 1,547,707 Birr Average per SHG member (3,040 members): 509 Birr
Value of household assets	Items listed included colour TV, tape recorder, DVD, bed and mattress, sideboard, mobile phone, and other household items The 30 control group members surveyed listed a total value of 68,250 Birr, or 2,275 Birr per member	Items listed included colour TV, fridge, three-wheeled motor, motor bike, bicycle, bed and mattress, mobile phone, chairs and table, chest of drawers, satellite dish, goat, sheep, cows, tape recorder, sideboard, bed side commode, sofa set, DVD, electric stove, gold, household items The 58 SHG members surveyed listed a total value of 1,283,092 Birr, or 22,122 Birr per member	The total increase in asset value per person over a 9-year period is 19,847 Birr, an almost tenfold increase
Housing	Housing (control group): rented & dependent 7; Private 6. 46% (6/13) live in private house. House value: 93,300 Birr 46% x 93,300 Birr = 42,918 Birr	Housing: rented & dependent 32; private 26. 45% (26/58) live in private houses. House value: 232,500 Birr 45% x 232,500 = 104,625 Birr	While the percentage of people in private houses is roughly the same, the value of the housing (through additions and renovations) has more than doubled. As a result, the

¹⁹ The figure for capital is used here, because if the SHG were dissolved, this is the sum that would go to the SHG members, and therefore represents the full value of their savings.

			weighted average increase in value is 61,707 Birr per person
EXPENDITURES			
Meals	Within control group HHs, 76% had an average of 3 meals per day; 20% an average of 2 meals per day; 4% an average of 1 meal per day. Expenditure on food averages 74 Birr/day. $74 \times 365 = 27,010$ Birr per year	Within SHG HHs, 83% eat 4 times a day, 17% eat 3 times a day. Average expenditure on food is 96 Birr per day $96 \text{ Birr} \times 365 \text{ days} = 35,040$ Birr per year	Average expenditure on food has increased by 30%, with an increase of 8,030 Birr per person
Education	19 out of 28 (68%) children go to public/ government school. The average family contribution is 90 Birr per child per year 9 (32%) children go to private school, the average family contribution per month is 137 Birr, or 1,644 per year Weighted average per SHG member: $32\% \times 1644 = 526$ Birr	51 out of 103 (50%) children go to public/ government school. The average family contribution is 90 Birr per child per year 52 (50%) children go to private school, 162 Birr/month or 1,944 per year Weighted average per SHG member: $50\% \times 1944 = 972$ Birr	The percentage of children going to private school has increased from 32% to 50%, at an average cost of 1944 Birr per year over the cost of public school at 90 Birr per year Average increase per SHG member is 446 Birr
Clothing	Control HHs buy on average 1 cloth/year valued at 765 Birr	SHG HHs average 4,741 Birr/year for clothes	Expenditure on clothing has more than quadrupled in SHG HHs, with SHG HHs spending an additional 3,976 Birr per year
TOTAL	28,301	40,753	12,452

2.4 Identification of risk reduction measures and costs

Costs over the nine years of programme operation in Hawassa are documented below.

Table B5: Summary of programme costs by year

Year	Total cost (Birr)
2004	82,500
2005	213,670
2006	236,400
2007	256,250
2008	327,091
2009	433,044
2010	546,170
2011	727,620
2012	778,406
Total	3,601,151
Total + 15%	4,141,324

Costs are inflated in the model by 15 per cent to reflect head office overheads.

It is expected that SHG formation will continue to grow at a rate of 20 per cent (the average growth rate in the first ten years in the Nazareth programme, the longest-running programme). The displacement mentioned above that has affected SHG numbers should have now stabilised, and hence this level of growth can be expected going forward. However, it is assumed that SHG growth will stop when concentration has reached 60 per cent of the total population (based on evidence from the programme in India on which this programme is modelled). In Hawassa, with a total urban population of 139,891, SHG growth is capped at 14,000 SHG members (or 84,000 people based on six members per household), in year 17.

Clearly, new SHGs will require an initial ten years of support, and therefore costs required to sustain the SHG programme are estimated. The average cost per SHG member, per year, in Nazareth, is 147 Birr (or £5), and this is applied to all new SHG members in the growth model. However, as noted above, these costs will be borne internally by the SHGs for new growth formation once the ten-year mark is passed.

Training costs

The SHG model is very much focused on organic growth. Skills and training are passed on to SHG members, and these are in turn passed on through the SHG, and through the formation of new SHGs. As a result, benefits multiply, while costs shrink.

Training provides one good example of this. The analysis below estimates the external training cost, and compares it with the SHG training cost as SHG members pass on skills to new SHG members. The analysis shows how internal training, at a lower cost, results in a cost saving of 373 Birr per person trained (weighted average). For the 3,040

SHG members in Hawassa, this is equivalent to a total cost saving of 1.1m Birr, equivalent to approximately 27 per cent of the total programme budget, demonstrating significant cost efficiencies.

Table B6: Training costs

External training cost per person	SHG training cost per person	Cost saving (weighted average)
<ul style="list-style-type: none"> ▪ 27 (46.5%) SHG members trained in income-generating skills (making fish soup, baking <i>Injera</i>, handicraft and painting) at an average cost of 1500 Birr/ person <p>Weighted average: 46.5% x 1500 Birr= 698 Birr</p>	<ul style="list-style-type: none"> ▪ 27 (46.5%) SHG members trained in income-generating skills at an average cost of 600 Birr/ person <p>Weighted average: 46.5% x 1500 Birr= 325 Birr</p>	<p>373 Birr</p>

2.5 Cost benefit and sensitivity analyses

2.5.1 Baseline analysis

The cost benefit analysis (CBA) compares the costs with the benefits, using three approaches:

- 4) Individual case: The first CBA looks at an individual SHG with 17 members (average size), and estimates the costs and benefits over a 20-year lifetime. Costs are incurred for the first ten years at 147 Birr per person per year, and then it is assumed that the SHG ‘graduates’ and can continue accruing benefits for the subsequent ten years without further investment.
- 5) Market penetration: The second CBA takes the full programme data, and models the costs and benefits until the programme reaches saturation (using a 20 per cent growth rate, with saturation at 60 per cent of the population). The model is run until all members have graduated, in this case for 27 years. This model is therefore assuming that observed benefits can be extrapolated to the full programme.
- 6) Donor-funded: The two cases above assume full costs to achieve benefits – which is the approach that should be taken with CBA, regardless of where the funds come from. However, once the first group of SHGs reaches ‘graduation’, they are capable of sustaining growth of new SHGs internally. Therefore the model is run again for the whole programme, but accounting only for external funding in the first ten years. At this point, funding ceases as it is assumed that all new growth thenceforth is generated from within SHG clusters.

In all three, benefits are weighted using straight-line appreciation over the first ten years. In other words, the total benefit that can be achieved was weighted by ten per cent in the first year, 20 per cent in the second year, and so on until 100 per cent is reached in year ten. This is because the SHG groups interviewed for this study had all been in the programme for eight to nine years, and therefore it would be unfair to assume the same level of benefit at the start of SHG formation.

Benefits are delayed in the model until year two. While benefits have been shown to accrue in year one, benefits have not yet reached their full potential. It was difficult to estimate the proportion of benefits accruing in year one, and therefore a conservative stance was taken, with benefits delayed until year two.

Education is averaged over 20 years, assuming three school-age children per SHG household (per national statistics and SHG statistics). This is to account for the fact that SHG families are likely to have children at different ages, attending school at different times, and hence the benefits are spread over a longer timeframe (rather than assuming a full six years of schooling benefit up front).

The benefit-to-cost ratio (BCR) is break-even if the ratio is 1:1. In other words for every dollar invested, you get a dollar return. Anything over 1 indicates a positive return.

Table B7: Hawassa benefit-to-cost ratios

	BCR
Scenario 1: Individual SHG	76:1
Scenario 2: Market penetration	97:1
Scenario 3: Donor-funded	210:1

2.5.2 Sensitivity analysis

Sensitivity testing is used to test certain assumptions in the model, to see how sensitive the findings are to these assumptions. In this case, the individual SHG model is adjusted as follows:

- Benefits are accrued for ten and 30 years (as compared with 20 in the baseline)
- The discount rate is adjusted to three per cent and 15 per cent (as compared with ten per cent in the baseline).

Table B8: Sensitivity analysis

	BCR
Baseline – individual SHG	76:1
10-year benefit stream	37:1
30-year benefit stream	91:1
Discount rate 3%	117:1
Discount rate 15%	59:1

3.1 Brief overview

Introduction to the programme

Tearfund has supported its partner, the Wolaita Kale Heywet Church Terepeza Development Association (WKHC–TDA), to respond to emergency needs in Kindo Koyisha district, Wolaita Zone, SNNP Region, since 2003. The district has a population of 109,176. A high population density means that most of the land in Kindo Koyisha is cultivated, leaving little natural forest and very limited communal grazing land. The population suffers from chronic poverty and food insecurity, the severity of which varies from year to year. Farmers face acute land shortage and declining land fertility. These problems are exacerbated in years of drought that lead to poor harvests and outbreak of crop pests and diseases. Malaria is endemic, but control measures and increased use of mosquito nets have reduced incidences significantly. Increasing levels of out-migration to urban areas is a widespread coping mechanism for low-income households.

The first phase of the Offa and Kindo Koyisha Food and Nutrition Security (FNS) project was implemented from 2007 to 2009. The current project is designed to run from January 2012 to December 2014. The beneficiaries are 79,732 people from Kindo Koyisha district and 31,893 from Offa district. The beneficiaries are poor farmers, landless and female-headed households, as well as people with disabilities who are living within 16 Kebeles²⁰ of Kindo Koyisha and Offa districts. The project's purpose is to bring about increased food and nutrition security and livelihood improvement. The major components are:

- organising and building the capacity of SHGs;
- empowering local community-based organisations;
- agricultural input provision;
- training on conservation farming and sustainable organic agriculture; and,
- environmental rehabilitation.

The first SHGs were established alongside a cash-for-work (CFW) project but did not follow the normal SHG approach; when the CFW project finished, the SHG members stopped participating. This resulted in WKHC–TDA taking time to learn further about the approach and re-introducing it as an independent strategy in 2007. There are now 220 SHGs in the Kindo Koyisha and Offa districts. As yet, CLAs and FLAs have yet to become established. WKHC–TDA has sought to integrate learning-based approaches into the SHGs to enhance food security through the use of conservation farming and organic agricultural practices. This pioneering work is now being scaled up across the wider SHG network in rural areas. Future work will focus on the overall institutional building as well developing other appropriate learning-based approaches to address member and community needs.

²⁰ A Kebele is the government structure under the district 'woreda' level.

3.2 Impact assessment

3.2.1 Overview of impacts

Table C1 below details the observed impacts, documented according to each of the five SLF categories.

Table C1: Impacts of SHG programme

Elements at risk	Description of elements at risk without SHGs	Description of elements at risk with SHGs	Quantifiable for inclusion in CBA/asset change?
Physical	<p>Poor access to all basic infrastructure, including water supply, sanitation, education, health services, transportation (limited to horse or donkey carts), communication, and housing (mud and wood hut with thatched roof)</p> <p>Water supply sources were half-an-hour walk from the homesteads</p>	<p>Improved access to potable water supply, health clinic and school:</p> <ul style="list-style-type: none"> • One SHG member has a mobile phone • SHG members contributed money to bring piped water to their locality (Boddit town) • SHG members contributed to the excavation of a hand-dug well • Half of the SHG members own improved houses with corrugated iron sheet roofs) <p>The community has access to potable water supply close to the village that was built by joint government and local community initiatives</p>	<p>No</p> <p>No</p>
Financial	<p><u>Income and expenditure:</u> Household income insufficient to meet basic needs, poor saving culture:</p> <ul style="list-style-type: none"> • Have low-quality meal once or twice a day • Could only afford second-hand clothing every two to three years <p><u>Assets:</u> Households own very few domestic animals (sheep, goats, chicken); limited number and low value of household assets (pots, beds, chair, farm tools)</p>	<p><u>Income and expenditure:</u> Increased diversification of sources of household income (retail trade, poultry raising, fattening of goat and sheep), developed culture of saving money; innovative and diversified saving skills developed:</p> <ul style="list-style-type: none"> • Households have three meals a day of improved quality • Households are able to purchase new clothing every year • However, high rate of inflation remains a challenge <p><u>Assets:</u> Increased livestock ownership (sheep, goats, calf,</p>	<p>Yes</p> <p>Yes</p>

	<p>In hard times, <u>coping strategies</u> include:</p> <ul style="list-style-type: none"> • selling household assets and selling livestock • engaging in poorly paid manual labour for survival • stress migration of the men and the youth to other areas in search of employment • dependent on relief food for six months of the year during drought years <p><u>Borrowing:</u> High level of dependence on money lenders as access to small loans was difficult to get; forced to borrow money to buy grain during the hungry season (June to September)</p> <p><u>Agriculture:</u> Low input / low output agriculture is the primary source of household income:</p> <ul style="list-style-type: none"> • diminishing average land holdings because of fragmentation and distribution among family members • poor soil fertility of the land leading to poor crop yields • increased dependence on chemical fertilisers; higher degree of indebtedness • prevalence of the use of low-quality crop seeds • very few households have cash crops (eg ginger) 	<p>cows, oxen); household asset ownership increased in quantity, values and type (TV sets, sofa, arm chair, tables, beds, plates)</p> <p>In hard times, <u>coping strategies</u> include:</p> <ul style="list-style-type: none"> • increased ability to borrow money from their savings to purchase food in times of drought • reduced incidence of stress migration • reduced dependency on food aid <p><u>Borrowing:</u> Increased access to loans from their own savings; reduced (or no) dependence on local money lenders; increased access to social fund to support SHG members who face economic or social stress</p> <p><u>Agriculture:</u> Crop yields increased:</p> <ul style="list-style-type: none"> • increased adoption of compost making and use of improved seeds • increased number of households grow cash crops (eg ginger), fruit trees and vegetable 	<p>Yes</p> <p>Yes</p> <p>No</p>
Human	<p><u>Education:</u></p> <ul style="list-style-type: none"> • No access to kindergartens • Children frequently drop out of school for lack of money 	<p><u>Education:</u></p> <ul style="list-style-type: none"> • Parents are able to send their pre-school children to kindergartens • Both girls and boys are able to enrol in the nearby 	<p>Yes</p>

	<p><u>Health:</u></p> <ul style="list-style-type: none"> • People resort to traditional healers for treatment • Inadequate awareness about harmful traditional practices (HTP) and HIV & AIDS • Frequent illness from water-borne diseases resulting in high medical expenses • Malaria leads to morbidity in adults and children <p><u>Skills:</u> Very little opportunity to access new skills or knowledge, skill sharing not common. Rely on traditional skills such as spinning cotton and locally-made shawls</p>	<p>government school</p> <ul style="list-style-type: none"> • Significant decrease in absenteeism from school <p><u>Health:</u></p> <ul style="list-style-type: none"> • Adult morbidity has decreased because of improved access to health services • Increased awareness and adoption of family planning practices and HIV/AIDS; reduced prevalence of harmful traditional practices (HTP) • Reduced incidence of water-borne diseases and reduced medical expenditure as a result of increased access to pit latrines and adoption of hand washing practices, and increased use of water sterilising tablets (Wuha-agar) as they can afford to buy it • Significant decrease in the incidence of malaria because of increased access to preventive measures <p><u>Skills:</u> High degree of self-esteem established among SHG members, developed culture of sharing skills and knowledge: business skills (soap making); vegetable production for home consumption and the market; adoption of 'sustainable organic agriculture' (SOA) methods that integrate compost-making, livestock and vegetable production</p>	<p>No</p> <p>Yes</p>
Natural	Sources of domestic water supply were streams and unprotected springs	Through a joint community and SHG effort, the local spring was protected and made safe for use by humans and animals	No

	<p>Land use practices were very traditional, with little adoption of conservation or soil fertility enhancement methods</p> <p>Heavy reliance on fuel wood and charcoal that contributed to deforestation; species diversity decreased as a result of deforestation</p>	<p>The introduction of sustainable organic agriculture methods and the use of compost has improved land quality</p> <p>Increased diversity of plant species as people planted trees; fuel saving stoves adopted by SHG members</p>	<p>No</p> <p>No</p>
Social	<p>The poor had low economic and social status before joining SHGs. Low self-confidence prevented them from voicing their concerns; they were stereotyped as being less important</p> <p>Poor motivation to engage in church activities or support each other as individuals in the body of Christ. Low level of spiritual transformation</p> <p>They lacked the capacity to respond to the needs of destitute people</p> <p>Husbands generally dominate household decision-making Male children tend to be favoured or given preference as compared to female children in terms of access to education. Strict gender division of labour and high degree of inequality between men and women. Poor relationship between husbands and wives and among community members – conflict and strife common among neighbours, divorce and family disintegration common</p>	<p>SHG members have gained respect in the community over the last 3–5 years (they actively participate in community meetings at the local government level)</p> <p>They are now increasingly taking an active part in serving in the church</p> <p>They are very much concerned to help others and have special saving of 50 cents/week for this purpose</p> <p>Husbands and wives have equal roles in decision-making in every to be addressed. More girls attend school and the family members equitably make use of the resources they have at hand. Relatively improved relationship between husbands and wives. Good relationship within the household and within the community. Domestic conflict significantly reduced. Increased skill in resolving conflict and bringing about reconciliation; SHG members have developed love for one another.</p>	<p>No</p> <p>No</p> <p>No</p> <p>No</p> <p>No</p>

	Prevalence of dependency syndrome on the government and NGOs	Reduced sense of dependency on government or NGOs.	
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3.3 Valuation of quantifiable impacts

Clearly, the SHG programme has had a positive impact on the communities where it has been working. Many of the benefits cannot be quantified *per se*. For example, it is not possible to monetise a change in self-confidence. However, all of these impacts feed in to a greater self-sufficiency that can be reflected to some degree in monetary terms.

The Wolaita programme has been running for seven years, has a total of 163 SHGs, 2,388 SHG members and capital of 358,844 Birr.²¹

Table C2 below documents the evolution of the SHG programme in Wolaita in terms of the number of SHGs, number of SHG members, and savings and capital, each year.

Table C2: Evolution of Fincha SHG formation

Year	Number of SHGs	Number of SHG members (cumulative)	Savings	Capital
2006	20	351	17,116	21,284
2007	48	742	32,080	38,918
2008	69	990	53,672	64,677
2009	98	1,246	113,262	171,429
2010	126	1,810	168,001	241,989
2011	158	2,362	201,652	297,917
2012	163	2,388	260,912	358,844

The analysis below is divided into three components:

- The first section documents the **valuation of quantifiable benefits** that have accrued as a result of the SHGs.
- The second section documents the **valuation of capital formation** – in other words, the change in the asset base that has occurred as a result of improved income and a stronger culture of saving.
- Finally, this is followed by a discussion around the **costs** required to achieve these gains.

3.3.1 Valuation of impacts

The creation of SHGs has resulted in a variety of benefits at the community level, including:

- Increased income;
- Increased enrolment in education;
- Decreased interest rates; and
- Decreased stress sale of assets.

²¹ Savings are the monies put into the SHG by SHG members on a weekly basis, as recorded in their passbook. Capital refers to the overall value of the SHG fund, and comprises savings, fines (for people coming late to meetings or not attending without permission, late loan repayments etc), interest earned from loans provided, interest earned from deposits in banks and funds generated through group IGA/business.

The Table below quantifies these impacts. It uses data collected from 72 SHG members, and compares this with control group data collected from approximately 75 people in similar communities who have not had SHG formation.

The data is estimated per person, and is a weighted average so as to account for the fact that not everyone benefits from each category of benefit.

Assumptions

Income: It can be very difficult to get a clear picture on income, without bias. A common technique used in survey tools is to ask about expenditures as a proxy for income. Therefore, data on expenditures (see next section on valuation of capital formation for greater detail) is reported as a proxy for income.

Education:

- Focus group findings indicate that SHG members are sending all school-age children to school. For the analysis presented here, we compare regional gross enrolment rates by level with 100 per cent enrolment in SHG families to estimate the value of increased education days. This analysis is done through to grade 10. The level of enrolment in grades 11 and 12 was not clear, and therefore is not included, though it is very likely that SHG children will continue to further education given evidence from the field.
- Whereas other studies found an increase in expenditures on education (for example, as a result of sending more children to private school), this change was not noted in Wolaita.

Interest rates: It is important to note that the data on loans is calculated using the size of loan and number of people taking loans for the control group; the only factor that changes is the interest rate charged. This is essential to ensure comparability – the amount saved on a given loan amount. In actual fact, the proportion of people taking loans in the SHG group is less, but the loan amount is more (probably because the interest rate is so much lower).

Numerous benefits could not be included due to data limitations. For example, travel time for fetching water has been decreased, and this typically results in substantial quantifiable benefits. Training has resulted in increased use of fuel savings stoves, which results in health benefits, decreased time spent collecting fuel wood, and environmental benefits. Agriculture yields are also believed to have increased due to training in alternative agricultural techniques.

Table C3: Valuation of SHG benefits

Intervention	Magnitude of impact 'without'	Magnitude of impact 'with'	Values/assumptions	a. Calculation of losses/benefit without SHG	b. Calculation of losses/benefit with SHG	Total benefit
Diversified income sources	Undiversified source of income and assets	Increase in income as a result of access to loans, training, etc	<p><u>Without:</u> Weighted average expenditure in control community is 11,918 Birr per year</p> <p><u>With:</u> Weighted average expenditure of each SHG member is 19,320 Birr per year</p>	Total annual expenditure = 11,918 Birr per person	Total annual expenditure = 19,320 Birr per person	7,402 Birr
Education gains	1 st primary, grades 1–5, is mandatory for all. 2 nd primary is not mandatory and has limited enrolment	Increased enrolment in grades 5–10	<p><u>Without:</u> Gross enrolment rate in SNNP region is 73.8% for grades 5–8; 35.4% for grades 9–10</p> <p><u>With:</u> 100% enrolment through to grade 10</p> <ul style="list-style-type: none"> • 4 years, 200 days per school year • Average daily wage rate (rural): 30 Birr/day (school 	Value of school days per person: (73.8% x 800 days x 15 Birr/day) + (35.4% x 400 x 15 Birr/day) = 10,980 Birr	Value of school days per person: (100% x 800 days x 15 Birr/day) + (100% x 400 x 15 Birr/day) = 18,000 Birr	7,020 Birr per child for additional enrolment in grades 5–10²²

²² This benefit only accrues for the years that a child is in school, whereas the economic model runs over 20 years. To simplify inclusion in the model, this figure is amortised over the lifetime of the model. Given an average family size of 6–7, it is assumed that there are three school-age children per SHG family.

Intervention	Magnitude of impact 'without'	Magnitude of impact 'with'	Values/assumptions	a. Calculation of losses/benefit without SHG	b. Calculation of losses/benefit with SHG	Total benefit
			valued at half daily wage rate)			
Access to loans	High interest rates on loans	Reduction in cost of borrowing through SHGs	<p><u>Without:</u> Money lender's interest rate is 300% per year; average loan size in control group is 280 Birr per year, 67% took loans</p> <p><u>With:</u> SHG interest rate is 5%; average loan size with SHG is 1,768 Birr, 44 respondents or 61% took loans</p>	The cost of borrowing is $67\% \times 280 \times 300\% =$ 563 Birr	Cost of borrowing is $67\% \times 280 \times 5\% =$ 9 Birr	554 Birr
Decreased stress sales	HHs are forced to sell assets at depressed prices to cover the cost of household essentials	HHs are no longer forced to sell at low prices and can preserve the value of their assets	<p><u>Without:</u> 35 out of 75 respondents (47%) liquidated their assets, at an average of 97 Birr per person</p> <p><u>With:</u> Sales at normal times will be 70% more than the stress price</p>	47% of members x 97 Birr = 46 Birr per person	78 Birr per person	32 Birr

Intervention	Magnitude of impact 'without'	Magnitude of impact 'with'	Values/assumptions	a. Calculation of losses/benefit without SHG	b. Calculation of losses/benefit with SHG	Total benefit
Compost	Reliance on applying only chemical fertilisers	Increased use of organic farming /compost	<p><u>Without:</u> 80% use chemical fertilisers only. Chemical fertiliser costs each HH 1400 Birr per year (average landholding 0.5 hectares of farming land)</p> <p><u>With:</u> 75% of SHG members trained on compost- making. Compost costs 50% of the chemical fertiliser</p>	80% x 1400 Birr = 1,120 Birr	75% x 1400 x 50% = 560 Birr	560 Birr

3.3.2 Valuation of capital formation

Evidence was gathered on the capital formation that has occurred in SHG households. This was evident both in terms of asset accumulation, as well as expenditures. All data is compared against control group data for similar communities.

The Table below lists the change in asset and expenditures over a seven-year period, weighted average per person.

Unlike the other studies, education did not show a significant change. SHG groups were broadly similar to control groups, both in terms of the number of children going to school and the average expenditure per child.

Table C4: Valuation of capital formation

Category of Asset/Expenditure	Value without SHG	Value with SHG	Accumulation as a result of SHG
ASSETS			
Savings	No savings	Cumulative capital ²³ = 358,844 Birr Average capital in each year for all SHGs = 51k Birr	Total increase over 7 years: 358,844 Birr Average per SHG member (2,388 SHG members): 150 Birr
Value of household assets	Item listed included furniture, utensils, chairs, tables, cows, oxen, heifer and sheep The 75 control group members surveyed listed a total value of 126,500 Birr, or 1,687 Birr per member	Items listed included furniture and farming tools, bed and mattress, goat, sheep, cattle, cash crops, cell phone, tape recorder, TV, and DVD player The 72 SHG members surveyed listed a total value of 140,855 Birr, or 1,956 Birr per member	Increase in asset value per person over 7 years is 269 Birr, equivalent to an increase of 16%
Housing	Housing (control group): rented 27; private 48. 64% (48/75) live in private houses. Value: 3,289 Birr Weighted average: 64% x 3,289 Birr = 2,105 Birr	Housing: rented 5; private 67. 93% (67/72) live in private houses. House value 15,000 Birr (Respondents said before SHG, their house was worth 2000 Birr.	The number of people living in private homes has increased by more than 50%, and the value of those houses has also increased substantially The weighted average increase in value per person is

²³ The figure for capital is used here, because if the SHG were dissolved, this is the sum that would go to the SHG members, and therefore represents the full value of their savings.

		After SHG, some members have renovated their houses and others have bought or built new houses worth 15,000 Birr, hence the significant increase over the control group) 93% x 15,000 = 13,950 Birr	11,845 Birr
EXPENDITURES			
Meals	HHs in the control group had an average of 2 meals per day and the food price per day is 32 Birr x 365 days = 11,680 per household	HHs spend an average of 18,180 per year on food	Average additional expenditure per person per year: 6,500 Birr
Clothing	Control HHs buy on average 1 cloth/year valued at 238 Birr	SHG HHs average 1,140 Birr/year for clothes	Average additional expenditure per year: 902 Birr
TOTAL	11,918	19,320	7,402

3.4 Identification of risk reduction measures and costs

Costs over the seven years of programme operation in Wolaita are documented below.

Table C5: Summary of total programme costs by budget item

Budget item	Total cost (Birr)
Personnel	300,542
Recurring & admin costs	146,038
Capital expenses	169,784
Direct programme costs	821,721
Total	1,438,085

Table C6: Summary of programme costs by year

Year	Total cost (Birr)
2006	258,500
2007	212,900
2008	205,417
2009	245,503
2010	200,030
2011	127,860
2012	187,875
Total	1,438,085
Total + 15%	1,653,798

Costs are inflated in the model by 15 per cent to reflect head office overheads.

The model assumes that SHG members who have been in the programme for ten years 'graduate' – in other words no longer require external investment. It took approximately ten years for Nazareth to reach the point where the FLA was established and recognised by government, and this is taken as an indication that those SHGs are now largely self-sustaining. (For example, in Nazareth each member of the CLAs are establishing a new SHG each, paid for internally, doubling the number of SHGs.)

It is expected that SHG formation will continue to grow at a rate of 20 per cent (the average growth rate in the first ten years in the Nazareth programme, the longest-running programme). However, it is assumed that SHG growth will stop when concentration has reached 60 per cent of the total population (based on evidence from the India programme on which this programme is modelled). In Wolaita, with a total rural population of 201,013, SHG growth is capped at 20,000 SHG members (or 121,000 people based on six members per household), in year 19.

Clearly, new SHGs will require an initial ten years of support, and therefore costs required to sustain the SHG programme are estimated. The average cost per SHG member, per year, in Nazareth, is 147 Birr (or £5), and this is applied to all new SHG

members in the growth model. However, as noted above, these costs will be borne internally by the SHGs for new growth formation once the ten-year mark is passed.

Training costs

The SHG model is very much focused on organic growth: skills and training are passed on to SHG members, and these are in turn passed on through the SHG, and through the formation of new SHGs. As a result, benefits multiply, while costs shrink.

Training provides one good example of this. The analysis below estimates the external training cost, and compares it with the SHG training cost as SHG members pass on skills to new SHG members. The analysis shows how internal training, at a lower cost, results in a cost saving of 355 Birr per person trained (weighted average). For the 2,388 members of the SHGs in Wolaita, this is equivalent to a total cost saving of 301k Birr, equivalent to approximately 18 per cent of the total programme budget, demonstrating significant cost efficiencies.

Table C7: Training costs

External training cost per person	SHG training cost per person	Cost saving (weighted average)
<ul style="list-style-type: none"> ▪ Soap making: 24 members (33% of SHG) x 300 Birr / member = 99 Birr ▪ Compost making: 75% of members @ 100 Birr per person = 75 Birr <p>Total = 174 Birr</p>	<ul style="list-style-type: none"> ▪ Soap making: 33% of SHG x 100 Birr / member = 33 Birr. ▪ Compost making: 75% @ 20 Birr per person = 15 Birr <p>Total = 48 Birr</p>	<p>126 Birr</p>

3.5 Cost benefit and sensitivity analyses

3.5.1 Baseline Analysis

The cost benefit analysis (CBA) compares the costs with the benefits, using three approaches:

- 7) Individual case: The first CBA looks at an individual SHG with 17 members (average size), and estimates the costs and benefits over a 20-year lifetime. Costs are incurred for the first ten years at 147 Birr per person per year, and then it is assumed that the SHG 'graduates' and can continue accruing benefits for the subsequent ten years without further investment.
- 8) Market penetration: The second CBA takes the full programme data, and models the costs and benefits until the programme reaches saturation (using a 20 per cent growth rate, with saturation at 60 per cent of the population). The model is run until all members have graduated, in this case for 29 years. This model is therefore assuming that observed benefits can be extrapolated to the full programme.

9) Donor-funded: The two cases above assume full costs to achieve benefits – which is the approach that should be taken with CBA, regardless of where the funds come from. However, once the first group of SHGs reaches ‘graduation’, they are capable of sustaining growth of new SHGs. Therefore, the model is run again for the whole programme, but accounting only for external funding in the first ten years. At this point, it is assumed that all new growth thenceforth is generated from within SHG clusters.

In all three models, benefits are weighted using straight-line appreciation over the first seven years. In other words, the total benefit that can be achieved was weighted by 14 per cent in the first year, 28 per cent in the second year, and so on until 100 per cent is reached in year seven. This is because the SHG groups interviewed for this study had primarily been in the programme from the start, and therefore it would be unfair to assume the same level of benefit for new SHGs.

Benefits are delayed in the model until year two. While benefits have been shown to accrue in year one, benefits have not yet reached their full potential. It was difficult to estimate the proportion of benefits accruing in year one, and therefore a conservative stance was taken, with benefits delayed until year two.

Education is averaged over 20 years, assuming three school-age children per SHG household (per national statistics and SHG statistics). This is to account for the fact that SHG families are likely to have children at different ages, attending school at different times, and hence the benefits are spread over a longer timeframe (rather than assuming a full six years of schooling benefit up front).

The benefit-to-cost ratio (BCR) is break-even if the ratio is 1:1. In other words, for every dollar invested, you get a dollar return. Anything over 1 indicates a positive return.

Table C8: Wolaita benefit-to-cost ratios

	BCR
Scenario 1: Individual SHG	58:1
Scenario 2: Market penetration	70:1
Scenario 3: Donor-funded	238:1

3.5.2 Sensitivity analysis

Sensitivity testing is used to test certain assumptions in the model, to see how sensitive the findings are to these assumptions. In this case, the individual SHG model is adjusted as follows:

- Benefits are accrued for ten and 30 years (as compared with 20 in the baseline)
- The discount rate is adjusted to three per cent and 15 per cent (as compared with ten per cent in the baseline).

Table C9: Sensitivity analysis

	BCR
Baseline – individual SHG	58:1
10-year benefit stream	32:1
30-year benefit stream	67:1
Discount rate 3%	85:1
Discount rate 15%	46:1

4.1 Brief overview

Introduction to the programme

Tearfund originally supported the Ethiopian Kale Heywet Church (EKHC) to establish Project Gilgal in 1999 to address a number of issues EKHC was struggling with. It was established as part of an overall organisational change programme. This sought to unite the whole church and empower all its local churches to engage effectively in holistic ministry with the communities being served. EKHC is the largest of the Protestant churches in Ethiopia with more than 7 million members and 7,000 local church congregations.

To begin with, Project Gilgal focused on training EKHC leadership at all levels on strategic planning, gender issues and integral mission. The approach was focused on cascading training programmes down and across the church structure. Whilst this brought a beneficial impact, the workload of providing for the increasing demand for training was unsustainable and there was concern that it was not bringing about the change desired at community level. In 2005, a change process in the project was supported, firstly by undertaking an evaluation of its work and achievements. The SHG work being undertaken by the Urban Ministry Department was also reviewed and learnt from, alongside a visit to see SHG work in India. It was agreed with the leadership that Project Gilgal would, in the future, support the introduction of the local church mobilisation and SHG approaches to rural locations, which had proved successful in the urban context.

Project Gilgal started to envision and mobilise local churches in rural locations from April 2009 and the first SHGs were formed during that year. This led to the recognition that the local church mobilisation and SHG approaches work equally effectively in rural areas as in the urban context. Today, four years later, there are more than 1,300 EKHC local churches supporting more than 3,800 SHGs across the Gilgal area.

The dispersed nature of local church engagement with SHGs has created some differences in the way the urban and rural projects are able to develop and these are a focus for current attention. It takes longer before there are sufficient SHGs established in a viable proximity to form a CLA and this will naturally relate to the formation of the FLA too. Whether a different structure would work better is currently being researched. The remoteness of EKHC churches has also caused many logistical challenges to supporting effective facilitation and the development of facilitators. Nevertheless, considerable progress and transformation have been realised through the efforts so far; many SHG members are now able to provide effectively for the needs of their families.

Project Gilgal has complemented the establishment of the SHGs with the basic training required by the members. It has also supported specific training on particular issues and networking with others to support other learning needs of SHG members. In moving

forward, the project is concerned about focusing more effectively on learning-based methodologies to help members take greater responsibility for their own learning. One major focus is improving agricultural production, which most households in rural areas rely on for their livelihood. At the same time, the project intends to support both the ongoing expansion and development of the SHGs.

4.2 Impact assessment

4.2.1 Overview of impacts

Table D1 below details the observed impacts, documented according to each of the five SLF categories.

Table D1: Impacts of SHG programme

Elements at risk	Description of elements at risk without SHGs	Description of elements at risk with SHGs	Quantifiable for inclusion in CBA/asset change?
Physical	Frequent drought and erratic rainfall led to crop failure and damaged perennial crops	No change	N/A
	Flood destroyed infrastructure such as roads, water sources/streams, water ponds, crops, water pipelines and hand pumps	No change	N/A
	Poor soil fertility leading to low crop production and productivity	SHG members carried out soil and water conservation activities after receiving training	No
Financial	Low income and assets, coupled with high price volatility and inflation in the community. Loss of income from livestock in drought years as their productivity sharply declines (milk, eggs) or experience loss of weight and body condition	Increased income and assets – SHG members able to maintain animals, buy more basic goods, farm inputs such as fertilisers and improved seeds. High price volatility and inflation in the community, but SHG members have access to loan from their group saving to mitigate some of the effects	Yes
	High prevalence of exploitation by local money lenders that charge high interest rates and create sense of insecurity	SHG members no longer reliant on money lenders and experience increased sense of security as they begin to adopt the culture of savings and loan	Yes
	High rate of unemployment and migration in search of jobs	Increased capacity to create self-employment and reduce stress migration as a result of involvement in SHG income-generation activities	No No

Elements at risk	Description of elements at risk without SHGs	Description of elements at risk with SHGs	Quantifiable for inclusion in CBA/asset change?
	High dependency on food aid and humanitarian assistance	Reduced dependency on food aid and humanitarian assistance	
Human	<p>Increased incidence of water-borne diseases (such as diarrhoea) as a result of limited access to potable water supplies. Limited access to health services leads people to resort to consulting traditional healers</p> <p>Limited access to sources of information about weather, markets or price</p> <p>Shortage of income to send children to school</p>	<p>Improved health:</p> <ul style="list-style-type: none"> • A government-run health centre has been constructed within walking distance of the community • SHG members are able to afford to pay for potable water • People have increased awareness and knowledge about the importance of personal hygiene and sanitation • Increased sensitisation about the use of mosquito nets has led to more people using them in their homes <p>SHG members have increased access to information on various issues, for example early warning and risk reduction measures</p> <p>There is increased capacity of SHG members to send their children to school, provide them with three meals per day; and buy them clothing</p>	<p>No</p> <p>No</p> <p>Yes</p>

Elements at risk	Description of elements at risk without SHGs	Description of elements at risk with SHGs	Quantifiable for inclusion in CBA/asset change?
Natural	<p>Water supply sources were primarily streams and rivers. These get contaminated by human excrement, animal dung and urine as well as run-off in the rainy season that brings silt, soil and other contaminants into the streams</p> <p>Forests and shrubs were cut down and used for fuel wood and construction</p>	<p>Water sources and ponds are protected from flash flood and animals so that they are less contaminated and the incidence of water-borne diseases reduced due to improved water quality</p> <p>Training provided by government extension workers on soil and water conservation (SWC) has led to increased awareness about protecting the environment. SHG members have started making and applying compost, planting trees and practising terracing to improve soil fertility and reduce soil erosion; increased adoption of fuel-saving stoves and alternative fuel sources</p>	<p>No</p> <p>Yes</p>
Social	<p>Male dominance is prevalent in decision-making and ownership of household assets</p> <p>The voices of the poor and women were not heard in the community</p> <p>Very little cooperation and sharing of skills among community because of poor relationships. High level of hopelessness, sense of insecurity and vulnerability at</p>	<p>Improved role of women in decision-making and property ownership in the family due to increased awareness about gender equality and equity through SHG initiative</p> <p>Women SHG members are able to express themselves without fear in any public gatherings or in government offices. Their place in the church service also improved</p> <p>Stronger relationships within the SHG setting has led to increased sharing of skills and knowledge</p>	<p>No</p> <p>No</p> <p>No</p>

Elements at risk	Description of elements at risk without SHGs	Description of elements at risk with SHGs	Quantifiable for inclusion in CBA/asset change?
	<p>times of ill health and bereavement of family members or close relatives, this demands a lot of money from families for medical treatments and to meet the expenses during the time of mourning</p> <p>Weak spiritual interaction among people of different faith</p>	<p>among the members. They use their savings from the social fund to support the family facing bereavement, etc</p> <p>Increased interaction and acceptance of people of other faith</p>	No

4.3 Valuation of quantifiable impacts

Clearly, the SHG programme has had a positive impact on the communities where it has been working. Many of the benefits cannot be quantified *per se*. For example, it is not possible to monetise a change in self-confidence. However, all of these impacts feed in to a greater self-sufficiency that can be reflected to some degree in monetary terms.

The Gilgal programme has been running for 4.5 years, and has a total of 3,886 SHGs and 62,726 SHG members. The total savings of the SHG members are 7,875,000 Birr, and the SHG has total capital of 10,584,844 Birr.²⁴ The programme is very large because it has been implemented nationwide via the church network. The focus group work was conducted in two districts – Shebedeno and Soddo Zurea, with a total of 145 SHGs, and this is the focus of the analysis. Clearly, however, the benefits described here could be relevant for a much larger population.

Table D2 below documents the evolution of the SHG programme in Gilgal in terms of the number of SHGs, number of SHG members and savings and capital, each year. This data is only available for the entire programme.

Table D2: Evolution of Gilgal SHG formation

Year (Apr–Mar)	Number of SHGs	Number of SHGs – 2 districts only	Number of SHG members (cumulative)	Capital (Birr)
2008/09	698	55	12,564	208,474
2009/10	1,632	69	27,774	1,550,629
2010/11	2,551	120	42,311	4,025,684
2011/12	3,411	135	55,365	7,813,806
2012 (Apr–Dec)	3,886	145	62,726	10,584,844

The analysis below is divided into three components:

- The first section documents the **valuation of quantifiable benefits** that have accrued as a result of the SHGs.
- The second section documents the **valuation of capital formation** – in other words, the change in the asset base that has occurred as a result of improved income and a stronger culture of saving.
- Finally, this is followed by a discussion around the **costs** required to achieve these gains.

²⁴ Savings are the monies put into the SHG by SHG members on a weekly basis, as recorded in their passbook. Capital refers to the overall value of the SHG fund, and comprises savings, fines (for people coming late to meetings or not attending without permission, late loan repayments etc), interest earned from loans provided, interest earned from deposits in banks and funds generated through group IGA/business.

4.3.1 Valuation of impacts

The creation of SHGs has resulted in a variety of benefits at the community level, including:

- Increased income;
- Increased enrolment in education;
- Decreased interest rates; and
- Decreased stress sale of assets.

The Table below quantifies these impacts. It uses data collected from 116 SHG members, and compares this with control group data collected from 46 people in similar communities who have not had SHG formation. The control group data is particularly important because it provides a proxy for what life might look like without the SHGs.

Assumptions

Income: It can be very difficult to get a clear picture on income, without bias. A common technique used in survey tools is to ask about expenditures as a proxy for income. Therefore, data on expenditures (see next section on valuation of capital formation for greater detail) is reported as a proxy for income.

Education: It should be noted that the increase in education is reported twice:

- SHG members reported increased contributions to public school costs, whereas previously these costs had been largely covered by local NGOs. This is reported as an increase in expenditures in the section on capital formation.
- Further to this, focus group findings indicate that SHG members are sending all school-age children to school. For the analysis presented here, we compare regional gross enrolment rates by level with 100 per cent enrolment in SHG families to estimate the value of increased education days. This analysis is done through to grade 10. The level of enrolment in grades 11 and 12 was not clear, and therefore is not included, though it is very likely that SHG children will continue to further education given evidence from the field.

Interest rates: It is important to note that the data on loans is calculated using the size of loan and number of people taking loans for the control group; the only factor that changes is the interest rate charged. This is essential to ensure comparability – the amount saved on a given loan amount. In actual fact, the proportion of people taking loans in the SHG group is less, but the loan amount is more (probably because the interest rate is so much lower).

Table D3: Data analysis record

Intervention	Magnitude of impact 'without'	Magnitude of impact 'with'	Values/assumptions	Calculation of losses/benefit without SHG	Calculation of losses/benefit with SHG	Total benefit
Diversified income sources	Undiversified source of income and assets	Increase in income as a result of access to loans, training, etc	<p><u>Without:</u> Average expenditure in control community is 11,080 Birr per year</p> <p><u>With:</u> Average expenditure for SHG members is 23,017 Birr per year</p>	Total annual expenditure = 11,080 Birr	Total annual expenditure = 23,017 Birr	11,937 Birr
Education gains	1 st primary, grades 1–5, is mandatory for all. 2 nd primary is not mandatory and has limited enrolment	Increased enrolment in grades 5–10	<p><u>Without:</u> Gross enrolment rate in SNNP region is 73.8% for grades 5–8; 35.4% for grades 9–10</p> <p><u>With:</u> 100% enrolment through to grade 10</p> <ul style="list-style-type: none"> • 4 years, 200 days per school year • Average daily wage rate (rural): 30 	Value of school days per person: (73.8% x 800 days x 15 Birr/day) + (35.4% x 400 x 15 Birr/day) = 10,980 Birr	Value of school days per person: (100% x 800 days x 15 Birr/day) + (100% x 400 x 15 Birr/day) = 18,000 Birr	7,020 Birr per child for additional enrolment in grades 5–10²⁵

²⁵ This benefit only accrues for the years that a child is in school, whereas the economic model runs over 20 years. To simplify inclusion in the model, this figure is amortised over the lifetime of the model. Given an average family size of 6–7, it is assumed that there are three school-age children per SHG family.

Intervention	Magnitude of impact 'without'	Magnitude of impact 'with'	Values/assumptions	Calculation of losses/benefit without SHG	Calculation of losses/benefit with SHG	Total benefit
			Birr/day (school valued at half daily wage rate)			
Access to loans	High interest rates on loans	Reduction in cost of borrowing through SHGs	<p><u>Without:</u> Money lender's interest rate is 120% per year</p> <p><u>With:</u> SHG interest rate is 5%</p> <p>Average loan size 2500 Birr per year; average number of people who took loan in the control group is 10, or 22%</p>	Cost of borrowing is $22\% \times 2500 \times 120\% = 660$ Birr	Cost of borrowing is $22\% \times 2500 \times 5\% = 28$ Birr	632 Birr
Decreased stress sales	HHs are forced to sell assets at depressed prices to cover the cost of household essentials	HHs are no longer forced to sell at low prices and can preserve the value of their assets	<p><u>Without:</u> All 46 respondents liquidated their assets: livestock, heifer, goat, eucalyptus tree worth Birr 31,510 and 75% of the respondents leased out their farming land, and relied on food-for-work programme</p>	100% of members x 685 Birr = 685 Birr	1165 Birr	480 Birr

Intervention	Magnitude of impact 'without'	Magnitude of impact 'with'	Values/assumptions	Calculation of losses/benefit without SHG	Calculation of losses/benefit with SHG	Total benefit
			<p>Average value of 685 Birr per person, affecting 100 per cent of the control group population</p> <p><u>With</u>: Sales at normal times will be 70 per cent more than the stress price</p>			

4.3.2 Valuation of capital formation

Evidence was gathered on the capital formation that has occurred in SHG households. This was evident both in terms of asset accumulation, as well as expenditures. All data is compared against control group data for similar communities.

The Table below lists the change in assets and expenditures over a 4.5-year period.

Table D4: Valuation of capital formation

Category of asset/expenditure	Value without SHG	Value with SHG	Accumulation as a result of SHG
ASSETS			
Savings	No savings	Capital ²⁶ = 10,584,844 Birr	Total capital over 4.5 years = 10,584,844 Birr Average per person (62,726 SHG members) = 169 Birr. Note this figure is for the whole programme, not the subset analysed here
Value of household assets	Items listed included second-hand and old goods, furniture, kitchen utensils, bed, straw mattress, clay pot, chair and tables The 46 control group members surveyed listed a total value of 50,599 Birr or 1,100 Birr per member	Items listed included house furniture, kitchen utensils, donkey, cattle, heifer shoat, dining table, chairs, benches, shelf, wooden cupboard, bed, donkey carts The 116 SHG members surveyed listed a total value of 474,672 Birr, or 4,092 Birr per member	The total increase in asset value per person over a 4.5 year period is 2,992 Birr, more than a threefold increase
Housing	Housing (control group): all 46 people live in private houses Total house value: 624,358 Birr Average per person = 13,573 Birr	Housing: All 116 live in private houses (most houses are new and renovated) with a total value of 2,427,880 Birr. Average per person = 20,930 Birr	House values have increased by a total of 1,803,522 Birr over a 4.5 year period, with an average increase of 7,357 Birr per person
EXPENDITURES			

²⁶ The figure for capital is used here, because if the SHG were dissolved, this is the sum that would go to the SHG members, and therefore represents the full value of their savings.

Meals	HHs in the control group have an average of 2 meals a day (cereal-based) @15 Birr/meal per day x 365 days = 10,950 Birr/ year	HHs have an average of 3 or more nutritious meals per day and average yearly spend is 22,777 Birr/year	SHG households are spending an additional 11,827 Birr per year on food, three times that of control group HHs
Clothing	Control HHs buy on average 130 Birr worth of second-hand cloth/year	SHG HHs average 240 Birr/year	SHG households are spending an additional 110 Birr per year on clothing, nearly double that of control groups
TOTAL	11,080	23,017	11,937

4.4 Identification of risk reduction measures and costs

Costs over the 4.5 years of programme operation in Gilgal are documented below, specifically for the two districts that are the focus of this analysis.

Table D5: Summary of programme costs by year

Year	Total cost (Birr)
2008/09	157,415
2009/10	99,089
2010/11	171,259
2011/12	228,128
2012/13 (9 mths)	165,219*
Total	821,110
Total + 15%	944,277

*This cost is for only nine months, and is inflated to reflect a full year in the model.

Costs are inflated in the model by 15 per cent to reflect head office overheads.

It is expected that SHG formation will continue to grow at a rate of 20 per cent (the average growth rate in the first ten years in the Nazareth programme, the longest-running programme). However, it is assumed that SHG growth will stop when concentration has reached 60 per cent of the total population (based on evidence from the programme in India on which this programme is modelled). In Gilgal, with a total rural population of 254,892 in the two districts studied,²⁷ SHG growth is capped at 25,000 SHG members (or 153,000 people based on six members per household), in year 17.

Clearly, new SHGs will require an initial ten years of support, and therefore costs required to sustain the SHG programme are estimated. The average cost per SHG member, per year, in Nazareth, is 147 Birr (or £5), and this is applied to all new SHG members in the growth model. However, as noted above, these costs will be borne internally by the SHGs for new growth formation once the ten-year mark is passed.

Data on training costs was not reported for Gilgal.

4.5 Cost benefit and sensitivity analyses

4.5.1 Baseline analysis

The cost benefit analysis (CBA) compares the costs with the benefits, using three approaches:

- 10) Individual case: The first CBA looks at an individual SHG with 17 members (average size), and estimates the costs and benefits over a 20-year lifetime. Costs are incurred for the first ten years at 147 Birr per person per year, and

²⁷ Note that this figure is adjusted from the total population figure for Shebedino district so that it does not overlap with the Leku programme that also has activities in Shebedino.

then it is assumed that the SHG 'graduates' and can continue accruing benefits for the subsequent ten years without further investment.

11) Market penetration: The second CBA takes the full programme data, and models the costs and benefits until the programme reaches saturation (using a 20 per cent growth rate, with saturation at 60 per cent of the population).

The model is run until all members have graduated, in this case for 26 years.

12) Donor-funded: The two cases above assume full costs to achieve benefits – which is the approach that should be taken with CBA, regardless of where the funds come from. However, once the first group of SHGs reaches 'graduation', they are capable of sustaining growth of new SHGs internally (as evidenced in Nazareth, where each member of the CLAs are establishing a new SHG each, paid for internally, doubling the number of SHGs).

Therefore the model is run again for the whole programme, but accounting only for external funding in the first ten years. At this point, funding ceases as it is assumed that all new growth thenceforth is generated from within SHG clusters.

Benefits are delayed in the model until year two, as the first year is solely focused on group formation, and in the second year loans and other activities that help to realise gains are launched. Education is amortised over 20 years, assuming three school-age children per SHG household (per national statistics and SHG statistics). This is to account for the fact that SHG families are likely to have children at different ages, attending school at different times, and hence the benefits are spread over a longer timeframe (rather than assuming a full six years of schooling benefit up front).

The benefit-to-cost ratio (BCR) is break-even if the ratio is 1:1. In other words, for every dollar invested, you get a dollar return. Anything over 1 indicates a positive return.

Table D6: Gilgal benefit-to-cost ratios

	BCR
Scenario 1: Individual SHG	116:1
Scenario 2: Market penetration	112:1
Scenario 3: Donor-funded	400:1

4.5.2 Sensitivity analysis

Sensitivity testing is used to test certain assumptions in the model, to see how sensitive the findings are to these assumptions. In this case, the individual SHG model is adjusted as follows:

- Benefits are accrued for ten and 30 years (as compared with 20 in the baseline).
- The discount rate is adjusted to three per cent and 15 per cent (as compared with ten per cent in the baseline).

Table D7: Sensitivity analysis

	BCR
Baseline – individual SHG	116:1

10-year benefit stream	80:1
30-year benefit stream	129:1
Discount rate 3%	152:1
Discount rate 15%	100:1

5.1 Brief overview

Introduction to HIV & AIDS projects

Tearfund and its four partners, initially funded by Irish Aid, implemented HIV & AIDS projects from July 2008 to December 2011 in eight districts of three regional states of Ethiopia: Amhara, Oromiya and SNNPR. Since the Irish Aid support ceased, the projects have been sustained and developed with the support of others, particularly the local church mobilisation and SHG aspects.

The HIV projects were aimed at contributing to the national HIV and AIDS efforts by enhancing both church and community-based responses across the country. They sought to reduce vulnerability for 85,000 people and improve the quality of life for 27,500 people impacted by HIV and AIDS. The HIV programme had two purposes:

- To build the capacity of churches in Ethiopia to respond more effectively, sustainably and holistically to HIV and AIDS, focusing on underserved areas.
- To improve the quality and process of shared learning between churches, Tearfund and other partners, to improve the overall quality of responses to HIV and AIDS in Ethiopia.

Of the four partners organisations involved, two (Ethiopian Guenet Church Development and Welfare Organisation (EGC/DWO) and Meserete Kristos Church Relief and Development Association (MKC/RDA)) implemented their projects in the districts of Shebedino (EGC/DWO) and Horo Guduru (MKC/RDA). The cost benefit analysis has focused on these two districts. This Annex focuses on the activities that were undertaken in Leku (EGC/DWO); MKC/RDA is covered in the Annex on Fincha/Shambu.

EGC/DWO Integrated HIV Project

The EGC/DWO project was entitled ‘Stop AIDS in Shebedino’ and was located in Shebedino district, Sidama zone, SNNP Region. The project targeted 10,866 beneficiaries over three years to reduce vulnerability and improve the quality of life of HIV-infected and AIDS-affected people.

The project focused on envisioning and equipping local churches in the response to HIV and AIDS, and establishing Self Help Groups to address poverty and HIV issues in a sustainable and holistic way. More than 80 local churches of different denominations were envisioned and 78 SHGs established. In addition to the normal SHG approach, which includes saving and loans, they have engaged in providing physical and spiritual support for more than 450 HIV-infected and AIDS-affected people.

SHG members disseminated HIV and health information to more than 2,000 community members throughout the district, and mobilised more than 50 local churches and community members for voluntary HIV counselling and testing. They have supported the reduction of HIV-related stigma and harmful traditional practices including gender

inequalities. SHG members have also worked with People Living with HIV (PLHIV) Associations to reduce HIV prevalence. As a result of their work, the livelihoods of 1,560 SHG members have improved; in addition, 50 people living with HIV were referred to service-providing institutions and are now accessing antiretroviral treatment (ART) and other support. About 300 couples were referred to health institutions and 83 per cent of these received antenatal care (ANC) services. This contributed to a 57 per cent increase in uptake of prevention of mother-to-child transmission (PMTCT) therapy and the result was a 35 per cent reduction in HIV prevalence.

The Shebedino SHGs also supported learning and sharing of experiences between churches, Tearfund and other partners to improve the overall quality of responses to HIV and AIDS. In addition to the SHGs, five CLAs have now been formed and are taking over the work of nurturing the development and replication of the SHGs in the district. Further work and time is required to establish the FLA level. This will be a focus of the project moving forward.

To support the initiation of SHGs in another country where Tearfund's HIV programme was running, SHG groups in Leku were volunteered and shared their livelihood experience with an HIV project team in Malawi. The SHG groups also integrated sectoral activities into their work. They adopted learning-based approaches to address literacy issues among members, address hygiene and sanitation issues and improve business processes.

5.2 Impact assessment

5.2.1 Overview of impacts

Table E1 below details the observed impacts, documented according to each of the five SLF categories.

Table E1: Impacts of SHG programme

Elements at risk	Description of elements at risk without SHGs	Description of elements at risk with SHGs	Quantifiable for inclusion in CBA/asset change?
Physical	Less than half the population lives in private houses	The number of SHG members living in private houses has almost doubled	Yes
Financial	Low income and inability to absorb the impact of inflation and sickness due to HIV/AIDS. Unable to meet basic needs	Increased income due to income-generating activities (IGAs) of women and men through SHGs	Yes
	High cost of borrowing due to reliance on local money lenders	Low cost of borrowing for SHG members	Yes
	Assets liquidated (livestock, sheep, household utensils, tables, chairs, etc) and relied on external aid and food for work programmes to cope with high living costs	No longer forced to sell assets – evidence of asset base increasing creating safety net	Yes
	Most eat twice a day, cereal-based meals	Most eat 3 times a day and the quality of food is greatly improved to include meat, milk, fruits and vegetables	Yes
	Basic clothing bought as needed, typically once a year	Clothing bought twice a year and the quality of clothing significantly improved for family members	No
	No saving culture. Money spent unwisely during feasts and holidays	Improved time management. Awareness of the importance of saving turned in to behavioural change and practice	
Human	Poor health, and inability to pay for health services.	Improved health of SHG members and their families.	No

	<p>Adults were vulnerable to HIV/AIDS and children to diarrhoea:</p> <ul style="list-style-type: none"> ▪ Because of open defecation, the incidence of diarrhoea is high. Children are more affected by the incidence of diseases. They are mostly not sent for medical treatment due to cash shortages ▪ Adult morbidity is high due to HIV/AIDS-related diseases, and lack of medication and treatment <p>Parents were sending their children to school as long as they received support such as school fees, stationery and uniforms, etc from NGOs and/or government</p> <p>Individuals have limited skills (farming, construction of mud-house, etc) but nothing more than what they know traditionally. Relationships are not strong enough to share skills and knowledge</p>	<p>Members get more access to HIV/AIDS information, WASH training. As the result of an increase in income, access to loan from SHGs, information, knowledge and awareness, health has improved</p> <ul style="list-style-type: none"> ▪ Occurrence of diarrhoea, typhoid and other water-borne diseases dropped due to increased awareness of members in SHGs, sharing of information on preventing communicable diseases, construction and use of pit latrines, and access to child vaccination ▪ HIV and AIDS-related sickness and death among adults decreased due to adherence to ART regimen and better nutrition <p>Parents send their children to both private and public schools. The number of children going to private schools has increased due to an increase in income</p> <p>SHG members have multiple skills and have gained new skills because of regular sharing of talents/skills among SHG members, learning, training events and experience sharing visits (eg literacy, numeracy skills, customer handling, home management, conflict handling, saving, food preparation, vegetable growing, compost making, child caring, communication and negotiation skills). For example, they sell their coffee beans to wholesalers instead of to middle men who pocketed the profit</p> <p>Increased access to specific knowledge (ART counselling</p>	<p>Yes</p> <p>No</p> <p>No</p>
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<p>Social</p>	<p>No attitude of helping others due to lack of community institutions to build relationships and lack of social funds to turn to during times of dire need.</p> <p>Wives are mainly dependent on the income of their spouses and do not know their potential. They are mostly confined in the home environment and are shy. They do not express their needs freely. Women feel inferior because of their income and little acceptance in the family. Limited opportunity for personal change</p> <p>Poor linkage/networks with local and government institutions. Limited or no community institutions to foster relationship among people</p>	<p>Set up social funds as insurance to minimise risks of defaulting. Regularly save additional money to support widows, orphaned children and other vulnerable groups in times of dire need. Members are more visible in building loving relationships among themselves and others who would like to join the SHG groups.</p> <p>Wives financially support husbands and the household economy leading to better relationships. Women SHG members have showed behavioural change in terms of self-confidence and perception on personal identity, poverty, religious division, conflict management, and saving. Ability of women demonstrated in leadership and establishing linkage with social networks in society. High self-confidence to use talents and run businesses of own choice due to a process of personal change/ personal development in SHGs. Women's acceptance in communities and government institutions increased significantly as they became vocal and self-confident on community development</p> <p>Built a relationship/network/ with local churches, district offices, <i>Kebeles</i>, education bureau, district health bureau and health extension workers, and other local NGOs</p>	<p>No</p> <p>No</p> <p>No</p>
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5.3 Valuation of quantifiable impacts

Clearly, the SHG programme has had a positive impact on the communities where it has been working. Many of the benefits cannot be quantified *per se*. For example, it is not possible to monetise a change in self-confidence. However, all of these impacts feed in to a greater self-sufficiency that can be reflected to some degree in monetary terms.

The Leku programme has been running for 4.5 years, and has a total of 78 SHGs and 1,560 SHG members. The total savings of the SHG members are 328,046 Birr, and the SHG has total capital of 347,629 Birr.²⁸

Table E2: Evolution of Leku SHG formation

Year	Number of SHGs	Number of SHG members (cumulative)	Savings (Birr)	Capital (Birr)
2008/09	12	228	128,677	134,397
2009/10	41	815	186,790	205,469
2010/11	73	1461	297,656	330,060
2011/12 ²⁹	78	1560	328,046	347,629

The analysis below is divided into three components:

- The first section documents the **valuation of quantifiable benefits** that have accrued as a result of the SHGs.
- The second section documents the **valuation of capital formation** – in other words, the change in the asset base that has occurred as a result of improved income and a stronger culture of saving.
- Finally, this is followed by a discussion around the **costs** required to achieve these gains.

5.3.1 Valuation of impacts

The creation of SHGs has resulted in a variety of benefits at the community level, including:

- Increased income;
- Increased enrolment in education;
- Decreased interest rates; and
- Decreased stress sale of assets.

The Table below quantifies these impacts. It uses data collected from 136 SHG members, and compares this with control group data collected from 59 people in

²⁸ Savings are the monies put into the SHG by SHG members on a weekly basis, as recorded in their passbook. Capital refers to the overall value of the SHG fund, and comprises savings, fines (for people coming late to meetings or not attending without permission, late loan repayments etc), interest earned from loans provided, interest earned from deposits in banks and funds generated through group IGA/business.

²⁹ The reporting year ends in June. Reporting for this year runs to December 2012 and hence is only half a year.

similar communities who have not had SHG formation. The control group data is particularly important because it provides a proxy for what life might look like without the SHGs.

The data is estimated per person, and is a weighted average so as to account for the fact that not everyone benefits from each category of benefit.

Assumptions

Income: It can be very difficult to get a clear picture on income, without bias. A common technique used in survey tools is to ask about expenditures as a proxy for income. Therefore, data on expenditures (see next section on valuation of capital formation for greater detail) is reported as a proxy for income.

Education: Focus group findings indicate that SHG members are sending all school-age children to school. For the analysis presented here, we compare regional gross enrolment rates by level with 100 per cent enrolment in SHG families to estimate the value of increased education days. This analysis is done through to grade 10. The level of enrolment in grades 11 and 12 was not clear, and therefore is not included, though it is very likely that SHG children will continue to further education given evidence from the field. Whereas other programmes also noted an increase in expenditures on school (for example through increased private school enrolment), this was not the case here and hence is not reported on.

Interest rates: It is important to note that the data on loans is calculated using the size of loan and number of people taking loans for the control group; the only factor that changes is the interest rate charged. This is essential to ensure comparability – the amount saved on a given loan amount. In actual fact, the loan amount is much more with SHG members (probably because the interest rate is so much lower).

Table E3: Valuation of SHG benefits

Hazard magnitude: HIV and AIDS:						
Intervention	Magnitude of impact 'without'	Magnitude of impact 'with'	Values assumptions	Calculation of losses/benefit without SHG	Calculation of losses/benefit with SHG	Total benefit (Birr per year per person)
Diversified income sources	Undiversified source of income and assets	Increase in income as a result of access to loans, training, etc	<p><u>Without:</u> Average expenditure (control group) is 12,054 Birr per year</p> <p><u>With:</u> Average expenditure is 38,066 Birr per year</p>	Total annual expenditure = 11,680 Birr/year	Total annual expenditure = 28,339 Birr/year	16,659 Birr
Education gains	1 st primary, grades 1–5, is mandatory for all. 2 nd primary is not mandatory and has limited enrolment	Increased enrolment in grades 5–10	<p><u>Without:</u> Gross enrolment rate in SNNPR region is 73.8% for grades 5–8; 35.4% for grades 9–10</p> <p><u>With:</u> 100% enrolment through to grade 10</p> <ul style="list-style-type: none"> 4 years, 200 days per school year <p>Average daily wage rate</p>	Value of school days per person: (73.8% x 800 days x 15 Birr/day) + (35.4% x 400 x 15 Birr/day) = 10,980 Birr	Value of school days per person: (100% x 800 days x 15 Birr/day) + (100% x 400 x 15 Birr/day) = 18,000 Birr	7,020 Birr per child for additional enrolment in grades 5–10³⁰

³⁰ This benefit only accrues for the years that a child is in school, whereas the economic model runs over 20 years. To simplify inclusion in the model, this figure is amortised over the lifetime of the model. Given an average family size of 6–7, it is assumed that there are three school-age children per SHG family.

Hazard magnitude: HIV and AIDS:						
Intervention	Magnitude of impact 'without'	Magnitude of impact 'with'	Values assumptions	Calculation of losses/benefit without SHG	Calculation of losses/benefit with SHG	Total benefit (Birr per year per person)
			(rural): 30 Birr/day (school valued at half daily wage rate)			
Access to loans	High interest rates on loans	Reduction in cost of borrowing through SHGs	<p><u>Without:</u> Money lender's interest rate is 100%; average loan size 1,571 Birr per year, 24/59 respondents, or 41%, took loans</p> <p>Over and above the cost of borrowing, the indirect cost of borrowing includes free labour, food/drink for guarantee, worth 5100 Birr per loan</p> <p><u>With:</u> SHG interest rate is 10%; average loan size is 6,334 Birr, 31% took loans</p>	Cost of borrowing is $(41\% \times 1,571 \times 100\%) + (41\% \times 5100) = \mathbf{2,735}$ Birr	Cost of borrowing is $41\% \times 1,571 \times 10\% = \mathbf{64}$ Birr	2,671 Birr

Hazard magnitude: HIV and AIDS:						
Intervention	Magnitude of impact 'without'	Magnitude of impact 'with'	Values assumptions	Calculation of losses/benefit without SHG	Calculation of losses/benefit with SHG	Total benefit (Birr per year per person)
Decreased stress sales	Assets liquidated at a poor price to cope with high living costs	Decreased stress sales of assets	<u>Without:</u> Control group members sold a weighted average of 755 Birr per person <u>With:</u> Sales at normal times will be 70% more than the stress price	755 Birr	755*1.7 = 1,284 Birr	529 Birr

5.3.2 Valuation of capital formation

Evidence was gathered on the capital formation that has occurred in SHG households. This was evident both in terms of asset accumulation, as well as expenditures. All data is compared with control group data for similar communities.

The Table below lists the change in assets and expenditures over a 4.5-year period.

Table E4: Valuation of capital formation

Category of asset/expenditure	Value without SHG	Value with SHG	Accumulation
ASSETS			
Savings	No savings	Total capital ³¹ = 347,629 Birr	Total increase over 4.5 years: 347,629 Birr Average per person = 222 Birr
Value of household assets	Items listed included household goods and utensils, and cash crops (coffee & <i>Khat</i> ³²) The 59 control group members surveyed listed a total value of 165,158 Birr, or 2,800 Birr per member	Items listed included TV, tape recorder, cash crops and livestock The 136 SHG members surveyed listed a total value of 441,128 Birr, or 3,244 Birr per member	Accumulated asset value over 4.4 years is 444 Birr per person
EXPENDITURES			
Meals	Control HHs spend an average of 11,539 per year on food	SHG HHs spend an average of 27,959 per year on food	SHG households are spending an additional 16,420 Birr per year on food
Clothing	Control HHs spend on average 141 Birr on clothing per person	SHG HHs spend on average 380 Birr on clothing	Average increase per person: 239 Birr
TOTAL	11,680	28,339	16,659

³¹ The figure for capital is used here, because if the SHG were dissolved, this is the sum that would go to the SHG members, and therefore represents the full value of their savings.

³² A leaf which when chewed acts as a stimulant

5.4 SHG programme costs

Costs over the 4.5 years of programme operation in Leku are documented below.

Table E5: Summary of total programme costs by budget item

Budget item	Total cost (Birr)
Personnel	294,263
Recurring & admin costs	273,747
Capital expenses	111,250
Direct programme costs	1,199,365
Total	1,878,625

Table E6: Summary of programme costs by year

Year	Total cost (Birr)
2008/09	87,153
2009/10	286,503
2010/11	612,556
2011/12	403,752
2012/13 (Jul – Dec)	488,661
Total	1,878,625
Total + 15%	2,160,419

Costs are inflated in the model by 15 per cent to reflect head office overheads. Actual costs in 2012/13 are for only six months. The model doubles this figure to estimate the total costs for the whole 2012/2013 financial year. Costs in 2012/13 were higher than other years due to an increased focus on SHG formation.

The model assumes that SHG members who have been in the programme for ten years ‘graduate’ – in other words no longer require external investment. It took approximately ten years for Nazareth to reach the point where the FLA was established and recognised by government, and this is taken as an indication that those SHGs are now largely self-sustaining. (For example, in Nazareth each member of the CLAs are establishing a new SHG each, paid for internally, doubling the number of SHGs.)

It is expected that SHG formation will continue to grow at a rate of 20 per cent (the average growth rate in the first ten years in the Nazareth programme, the longest-running programme). However, it is assumed that SHG growth will stop when concentration has reached 60 per cent of the total population (based on evidence from the programme in India on which this programme is modelled). In Leku, with a total rural

population of 98,714,³³ SHG growth is capped at 9,800 SHG members (or 59,000 people based on six members per household), in year 13.

Clearly, new SHGs will require an initial ten years of support, and therefore costs required to sustain the SHG programme are estimated. The average cost per SHG member, per year, in Nazareth, is 147 Birr (or £5), and this is applied to all new SHG members in the growth model. However, as noted above, these costs will be borne internally by the SHGs for new growth formation once the ten-year mark is passed.

Training costs

The SHG model is very much focused on organic growth. Skills and training are passed on to SHG members, and these are in turn passed on through the SHG, and through the formation of new SHGs. As a result, benefits multiply, which costs shrink.

Training provides one good example of this. The analysis below estimates the external training cost, and compares it with the SHG training cost as SHG members pass on skills to new SHG members. The analysis shows how internal training, at a lower cost, results in a cost saving of 493 Birr per person trained (weighted average). For the 1,560 members of the SHG, this is equivalent to a total cost saving of 158k Birr, or seven per cent of the total budget.

Table E7: Training costs

External training cost per person (weighted average)	SHG training cost per person (weighted average)	Cost saving (weighted average)
<ul style="list-style-type: none"> ▪ Adult literacy: 30 members (22% of SHG) at 36 Birr/ month/ member x 6 months = 48 Birr ▪ WASH training: 51 members (37% of SHG) at 325 Birr/member = 120 Birr <p>Total= 168</p>	<ul style="list-style-type: none"> ▪ Adult literacy: 22% x 14 Birr/ month/ member x 6 months = 19 Birr ▪ WASH training: 37% x 130 Birr/member = 48 Birr <p>Total= 67</p>	101 Birr

5.5 Cost benefit and sensitivity analyses

5.5.1 Baseline analysis

The cost benefit analysis (CBA) compares the costs with the benefits, using three approaches:

³³ Note that this figure is adjusted from the total population figure for Shebedino district so that it does not overlap with the Gilgal programme that also has activities in Shebedino.

- Individual case: The first CBA looks at an individual SHG with 17 members (average size), and estimates the costs and benefits over a 20-year lifetime. Costs are incurred for the first ten years at 147 Birr per person per year, and then it is assumed that the SHG 'graduates' and can continue accruing benefits for the subsequent ten years without further investment.
- Market penetration: The second CBA takes the full programme data, and models the costs and benefits until the programme reaches saturation (using a 20 per cent growth rate, with saturation at 60 per cent of the population). The model is run until all members have graduated, in this case for 27 years. This model is therefore assuming that observed benefits can be extrapolated to the full programme.
- Donor-funded: The two cases above assume full costs to achieve benefits – which is the approach that should be taken with CBA, regardless of where the funds come from. However, once the first group of SHGs reaches 'graduation', they are capable of sustaining growth of new SHGs internally. Therefore the model is run again for the whole programme, but accounting only for external funding in the first ten years. At this point, funding ceases as it is assumed that all new growth thenceforth is generated from within SHG clusters.

Benefits are delayed in the model until year two. While benefits have been shown to accrue in year one, benefits have not yet reached their full potential. It was difficult to estimate the proportion of benefits accruing in year one, and therefore a conservative stance was taken, with benefits delayed until year two.

Education is averaged over 20 years, assuming three school-age children per SHG household (per national statistics and SHG statistics). This is to account for the fact that SHG families are likely to have children at different ages, attending school at different times, and hence the benefits are spread over a longer timeframe (rather than assuming a full six years of schooling benefit up front).

The benefit-to-cost ratio (BCR) is break-even if the ratio is 1:1. In other words, for every dollar invested, you get a dollar return. Anything over 1 indicates a positive return.

Table E8: Leku benefit-to-cost ratios

	BCR
Scenario 1: Individual SHG	173:1
Scenario 2: Market penetration	124:1
Scenario 3: Donor-funded	222:1

5.5.2 Sensitivity analysis

Sensitivity testing is used to test certain assumptions in the model, to see how sensitive the findings are to these assumptions. In this case, the individual SHG model is adjusted as follows:

- Benefits are accrued for ten and 30 years (as compared with 20 in the baseline).
- The discount rate is adjusted to three per cent and 15 per cent (as compared with ten per cent in the baseline).

Table E9: Sensitivity analysis

	BCR
Baseline – individual SHG	173:1
10-year benefit stream	119:1
30-year benefit stream	193:1
Discount rate 3%	227:1
Discount rate 15%	150:1

6.1 Brief overview

Introduction to HIV & AIDS projects

Tearfund and its four partners, initially funded by Irish Aid, implemented HIV & AIDS projects from July 2008 to December 2011 in eight districts of three regional states of Ethiopia: Amhara, Oromiya and SNNPR. Since the Irish Aid support ceased, the projects have been sustained and developed with support of others, particularly the local church mobilisation and SHG aspects.

The HIV projects were aimed at contributing to national HIV and AIDS efforts by enhancing both church and community-based responses across the country. They sought to reduce vulnerability for 85,000 people and improve the quality of life for 27,500 people impacted by HIV and AIDS. The HIV programme had two purposes:

- To build the capacity of churches in Ethiopia to respond more effectively, sustainably and holistically to HIV and AIDS, focusing on areas under served.
- To improve the quality and process of shared learning between churches, Tearfund and other partners, to improve the overall quality of responses to HIV and AIDS in Ethiopia.

Of the four partners organisations involved, two (Ethiopian Guenet Church Development and Welfare Organization (EGC/DWO) and Meserete Kristos Church Relief and Development Association (MKC/RDA)) implemented their projects in the districts of Shebedino (EGC/DWO) and Horo Guduru (MKC/RDA). The cost benefit analysis has focused on these two districts. The first is the focus of the Annex on Leku; this Annex focuses on the activities that were undertaken in Fincha and Shambu specifically (MKC/RDA).

MKC–RDA Integrated HIV Project

MKC/RDA has implemented its HIV and AIDS project in Shambu and Fincha rural towns in Horo Guduru district, East Wallaga zone, Oromiya region, since 2008. The project initially targeted 53,934 beneficiaries over three years, aiming to reduce vulnerability to HIV and improve the quality of life of HIV-infected and AIDS-affected people.

During implementation, the project focused on envisioning and equipping local churches and establishing SHGs to respond to HIV and AIDS issues. It established networks with community-based organisations (CBOs), government institutions and faith-based organisations (FBOs). More than 30 FBOs of different denominations were envisioned and 72 SHGs were established. In addition to the normal SHG approach, which includes saving and loan, members engaged in providing support for more than 7,000 HIV-infected and AIDS-affected people. They disseminated HIV and health information to more than 15,000 community members in Shambu, Fincha rural towns and Fincha valley. They mobilised members from five local churches and CBOs for voluntary HIV counselling and testing. They also worked with government institutions and public

schools in combating HIV-related stigma, harmful traditional practices (particularly female genital cutting) and gender inequalities.

As a result of this project, the following results were achieved:

- Livelihoods of 1,493 SHG members improved;
- More than 100 people living with HIV were referred to service-providing institutions for antiretroviral treatment (ART) and other support;
- 834 couples were referred to health institutions with 82.8 per cent of these receiving antenatal care (ANC) services to combat MTCT. This contributed to a 62 per cent increase in uptake of HIV testing, a 57 per cent increase in access to PMTCT and a 35 per cent reduction in HIV prevalence through PMTCT in the target area.

The SHG groups in Shambu/Fincha integrated sectoral activities into their daily routines. In addition, CLAs have been formed in Fincha and Shambu but further work and time is required to establish FLAs. This will be focused on moving forward, alongside developing the capacity of the SHGs to support individual and community needs through learning-based approaches.

Structure of the annex

The Annex is structured as follows:

- Section 1.2 describes the overall impact of the programme, in terms of both qualitative and quantitative benefits.
- Section 1.3 describes those benefits that were quantified for this study.
- Section 1.4 describes the SHG programme costs.
- Section 1.5 presents the findings from the CBA model.

6.2 Impact assessment

6.2.1 Overview of impacts

Table F1 below details the observed impacts, documented according to each of the five SLF categories.

Table F1: Impacts of SHG programme

Elements at risk	Description of elements at risk without SHGs	Description of elements at risk with SHGs	Quantifiable for inclusion in CBA/asset change?
Physical	Less than half the population live in private houses	The number of SHG members living in private houses has almost doubled	Yes
Financial	Low income and inability to absorb the impact of inflation and sickness due to HIV/AIDS. Unable to meet basic needs	Increased income due to income-generating activities (IGAs) of women and men through SHGs	Yes
	High cost of borrowing (270%) due to reliance on local money lenders	Low cost of borrowing (5%) for SHG members	Yes
	Asset liquidated (chicken, sheep, calf, horse, cloth, etc) and relied on external aid to cope with general price rise and to cope with HIV/AIDS-associated costs	No longer forced to sell assets – evidence of asset base increasing, creating safety net	Yes
	Most eat 1–2 times a day, cereal-based meals	Most eat 3 times a day and the quality of food is greatly improved to include meat, milk, fruits and vegetables	Yes
	Basic clothing bought as needed, typically once a year	Clothing bought twice a year and the quality of clothing significantly improved for family members	Yes
	No saving culture. Money spent unwisely during feasts and holidays	Improved time management. Awareness of the importance of saving turned into behavioural change and practice	No
Human	Poor health and inability to pay for health services. Adults were vulnerable to HIV and AIDS and children	Improved health of SHG members and their families. Members get more access to HIV/AIDS information,	No

	<p>to diarrhoea:</p> <ul style="list-style-type: none"> ▪ Because of open defecation, the incidence of diarrhoea is high. Children are more affected by the incidence of diseases. They are mostly not sent for medical treatment due to cash shortages ▪ Adult morbidity is high due to HIV/AIDS-related diseases, and lack of medication and treatment <p>Parents were sending their children to school as long as they received support such as school fees, stationery and uniforms, etc from NGOs and/or government</p> <p>Individuals have skills (spinning cotton, hair dressing, etc) but nothing more than what they know traditionally. Relationships are not strong enough to share skills and knowledge</p>	<p>WASH training. As the result of an increase in income, access to loan from SHGs, information, knowledge and awareness, health has improved</p> <ul style="list-style-type: none"> ▪ Occurrence of diarrhoea, typhoid and other water-borne diseases dropped due to increased awareness of members in SHGs, sharing of information on preventing communicable diseases, construction and use of pit latrines, and access to child vaccination ▪ HIV and AIDS-related sickness and death among adults decreased due to adherence to ART regimen and better nutrition <p>Parents send their children to public schools using their own funds. The number of children going to private schools has increased due to an increase in income</p> <p>Members have multiple and new skills because of regular sharing of talents and new skills among members (spinning cotton, crochet, selling cabbage and grains, home management, conflict handling, child caring, saving, running a business, handling a customer, communication, public speech, compost making, etc)</p> <p>Increased access to specific knowledge (ART counselling and adherence, PMTCT, family planning, hygiene and sanitation, prevention of sexual transmitted infection, livelihood, advocacy against female genital cutting and discriminating and stigmatising of PLHIV, as well as</p>	<p>Yes</p> <p>No</p> <p>No</p>
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		compost making, etc	
Natural	<p>Poor farming practices and natural resource management</p> <ul style="list-style-type: none"> ▪ Exclusive use of chemical fertilisers ▪ Poor soil and water conservation practices ▪ Local breeding <p>Community members were not planting trees and had little awareness/knowledge about environmental protection</p>	<p>Improved farming practices and natural resource management</p> <ul style="list-style-type: none"> ▪ Increased use of improved seeds ▪ Increased use of compost and decreased expenditure on chemical fertilisers ▪ Increased livestock cross-breeding ▪ Increase soil & water conservation practices <p>SHG members planted indigenous trees and increased their awareness of sanitation and use of facilities. Awareness about environment and making terraces to control farm erosion increased through education and training in SHGs</p>	<p>Yes</p> <p>No</p>
Social	<p>No attitude of helping others due to lack of community institutions to build relationships and lack of social funds to turn to during times of dire need</p> <p>Wives are mainly dependent on the income of their spouses. High incidence of conflict between spouses. Limited attention to members of the family</p> <p>Women feel inferior because of their income and little acceptance in the family. Limited opportunity for personal change. Women are shy and do not express their needs freely. Women mostly confined to the</p>	<p>Set up social funds as insurance to minimise risks of defaulting. Regularly save additional 4 Birr/month to support widows, orphaned children and other groups in times of dire need. Members are more visible in building loving relationships among themselves and others who would like to join the SHG groups</p> <p>Wives financially support husbands and the household economy leading to better relationships</p> <p>Women show increased self-confidence, belief in themselves. Ability of women demonstrated in leadership. High self-</p>	<p>No</p> <p>No</p> <p>No</p>

	<p>home environment</p> <p>Fear and low motivation for change. Poor decision-making power</p> <p>Poor linkage/networks with local and government institutions. Limited or no community institutions to foster relationship among people</p>	<p>confidence to use talents and run businesses of own choice due to a process of personal change/ personal development in SHGs. Women's acceptance in communities and government institutions increased significantly as they became vocal and self-confident on community development</p> <p>Strong leadership/ communication skills and decision power over matters that concern members individually and as a group due the democratic nature of SHGs. Empowered to decide what is best for them as individuals and groups</p> <p>Built a relationship/network with women and child affair office, district offices, <i>Kebeles</i>, health extension workers, and NGOs</p>	<p>No</p> <p>No</p>
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6.3 Valuation of quantifiable impacts

Clearly, the SHG programme has had a positive impact on the communities where it has been working. Many of the benefits cannot be quantified *per se*. For example, it is not possible to monetise a change in self-confidence. However, all of these impacts feed into a greater self-sufficiency that can be reflected to some degree in monetary terms.

The Fincha programme has been running for four years, and has a total of 107 SHGs, 1,721 SHG members and capital of 360k Birr.³⁴ Table F2 below documents the evolution of the SHG programme in Fincha in terms of the number of SHGs, number of SHG members and savings, each year.

Table F2: Evolution of Fincha SHG formation

Year	Number of SHGs	Number of SHG members (cumulative)	Capital
2009	18	268	119,321
2010	32	510	206,433
2011	50	805	259,687
2012	107	1,721	359,932

The analysis below is divided into three components:

- The first section documents the **valuation of quantifiable benefits** that have accrued as a result of the SHGs.
- The second section documents the **valuation of capital formation** – in other words, the change in the asset base that has occurred as a result of improved income and a stronger culture of saving.
- Finally, this is followed by a discussion around the **costs** required to achieve these gains.

6.3.1 Valuation of impacts

The creation of SHGs has resulted in a variety of benefits at the community level, including:

- Increased income;
- Increased enrolment in education;
- Decreased interest rates;
- Decreased stress sale of assets; and
- Decreased spend on fertiliser as a result of training in alternative techniques.

³⁴ Savings are the monies put into the SHG by SHG members on a weekly basis, as recorded in their passbook. Capital refers to the overall value of the SHG fund, and comprises savings, fines (for people coming late to meetings or not attending without permission, late loan repayments etc), interest earned from loans provided, interest earned from deposits in banks and funds generated through group IGA/business.

The Table below quantifies these impacts. It uses data collected from 82 SHG members, and compares this with control group data collected from approximately 74 people in similar communities who have not had SHG formation.

The data is estimated per person, and is a weighted average so as to account for the fact that not everyone benefits from each category of benefit.

Assumptions

Income: It can be very difficult to get a clear picture on income, without bias. A common technique used in survey tools is to ask about expenditures as a proxy for income. Therefore, data on expenditures (see next section on valuation of capital formation for greater detail) is reported as a proxy for income.

Education: It should be noted that the increase in education is reported twice:

- SHG members reported increased contributions to public school costs, whereas previously these costs had been largely covered by local NGOs. This is reported as an increase in expenditures in the section on capital formation.
- Further to this, focus group findings indicate that SHG members are sending all school-age children to school. For the analysis presented here, we compare regional gross enrolment rates by level with 100 per cent enrolment in SHG families to estimate the value of increased education days. This analysis is done through to grade 10. The level of enrolment in grades 11 and 12 was not clear, and therefore is not included, though it is very likely that SHG children will continue to further education given evidence from the field.

Interest rates: It is important to note that the data on loans is calculated using the size of loan and number of people taking loans for the control group; the only factor that changes is the interest rate charged. This is essential to ensure comparability – the amount saved on a given loan amount. In actual fact, the proportion of people taking loans in the SHG group is less, but the loan amount is more (probably because the interest rate is so much lower).

Numerous benefits could not be included due to data limitations. For example, training on pit latrine construction has resulted in the construction of more than 30 pit latrines, leading to environmental and health benefits.

Table F3: Valuation of SHG benefits

Intervention	Magnitude of impact 'without'	Magnitude of impact 'with'	Values/assumptions	Calculation of losses/benefit without SHG	Calculation of losses/benefit with SHG	Total benefit (Birr per year per person)
Diversified income sources	Undiversified source of income and assets	Increase in income as a result of access to loans, training, etc	<u>Without:</u> Average expenditure in control community is 11,126 Birr per month <u>With:</u> Average expenditure in SHG is 28,054 Birr per year	Total annual expenditure = 11,126 Birr	Total annual expenditure = 28,054 Birr	16,928
Education gains	1 st primary, grades 1–5, is mandatory for all. 2 nd primary is not mandatory and has limited enrolment	Increased enrolment in grades 5–10	<u>Without:</u> Gross enrolment rate in Oromiya region is 61.7% for grades 5–8; 38.4% for grades 9–10 <u>With:</u> 100% enrolment through to grade 10 <ul style="list-style-type: none"> • 4 years, 200 days per school year • Average daily wage rate (rural): 30 Birr/day (school valued at half daily 	Value of school days per person: (61.7% x 800 days x 15 Birr/day) + (38.4% x 400 x 15 Birr/day) = 9,708 Birr	Value of school days per person: (100% x 800 days x 15 Birr/day) + (100% x 400 x 15 Birr/day) = 18,000 Birr	8,292 Birr per child for additional enrolment in grades 5–10³⁵

³⁵ This benefit only accrues for the years that a child is in school, whereas the economic model runs over 20 years. To simplify inclusion in the model, this figure is amortised over the lifetime of the model. Given an average family size of 6–7, it is assumed that there are three school-age children per SHG family.

Intervention	Magnitude of impact 'without'	Magnitude of impact 'with'	Values/ assumptions	Calculation of losses/benefit without SHG	Calculation of losses/benefit with SHG	Total benefit (Birr per year per person)
			wage rate)			
Access to loans	High interest rates on loans	Reduction in cost of borrowing through SHGs	<p><u>Without:</u> Money lender's interest rate is 270% per year. Average loan size in control group is 1,827 Birr per year, 27% took loans</p> <p><u>With:</u> SHG interest rate is 5%. The average loan size with SHG is 2,600 Birr, 10% took loans</p>	Cost of borrowing (weighted average) is $27\% \times 1,827 \text{ Birr} \times 2.7 = \mathbf{1,332 \text{ Birr}}$	Cost of borrowing is $27\% \times 1827 \times 0.05 = \mathbf{25 \text{ Birr}}$	1,307
Decreased stress sales	HHs are forced to sell assets to cope with HIV/Aids (getting very poor prices, unable to negotiate for a good price)	HHs are no longer forced to sell at low prices and can preserve their assets	<p><u>Without:</u> 46 out of 74 respondents (62%) liquidated their assets, weighted average of 121 Birr per person</p> <p><u>With:</u> Sales at normal times will be 70% more than the stress price = 207 Birr</p>	$62\% \times 121 = \mathbf{75 \text{ Birr}}$	$62\% \times 207 = \mathbf{128 \text{ Birr}}$	53
Decreased spend on fertiliser	HHs were reliant on chemical fertilisers for their land	HHs were trained in compost making and have reduced their use	<u>Without:</u> 25% of SHG members own 0.25 hectare on average. This requires 25kg of DAP &	$25\% \times 300 = \mathbf{75 \text{ Birr}}$	$25\% \times 150 = \mathbf{37.5 \text{ Birr}}$	37.5

Intervention	Magnitude of impact 'without'	Magnitude of impact 'with'	Values/ assumptions	Calculation of losses/benefit without SHG	Calculation of losses/benefit with SHG	Total benefit (Birr per year per person)
		of chemical fertiliser	10 kg of urea. This costs 300 Birr per year <u>With:</u> Compost replaces 50% of the fertiliser use			

6.3.2 Valuation of capital formation

Evidence was gathered on the capital formation that has occurred in SHG households. This was evident both in terms of asset accumulation, as well as expenditures. All data is compared with control group data for similar communities.

The Table below lists the change in asset and expenditures over a 4.5-year period, weighted average per person.

Table F4: Valuation of capital formation

Category of asset/expenditure	Value without SHG	Value with SHG	Accumulation as a result of SHG
ASSETS			
Savings	No savings	Cumulative capital ³⁶ = 359,932 Birr Average capital in each year for all SHGs = 90k Birr	Total increase over 4.5 years: 359,932 Birr Average per SHG member = 209 Birr
Value of household assets	No change observed over 4.5 years		
Housing	Housing (control group): 43% (32/74) live in private houses House value: 16,000 Birr 43% x 16,000 = 6,880 Birr	62% (51/82) live in private houses House value: 16,000 Birr 62% x 16,000 = 9,920 Birr	The number of people living in private houses has almost doubled over a 4.5-year period, with a weighted average increase of 3,040 Birr per person
EXPENDITURES			
Meals	HHs in the control group have an average of 1–2 meals a day @ 20 Birr/ meal (for all meals) * 365 days = 10,950 Birr/ year	HHs have an average of 3 meals per day @ 25 Birr/meal * 365 days = 27,375 Birr/year	SHG households are spending an additional 16,425 Birr per year on food
Education	All children go to public/ government school (mandatory) The majority of the total cost for education is supported by local NGOs, PLHIV	All children go to public school and costs are covered in full by SHG members (from own pocket), approximately 197 Birr per year per child, or 394 Birr per HH	Average additional expenditure per year: 172 Birr per child. Assume average of 2 school-age children per household = total savings of 344 Birr

³⁶ The figure for capital is used here, because if the SHG were dissolved, this is the sum that would go to the SHG members, and therefore represents the full value of their savings.

	associations and <i>Kebele</i> (local government). Families contribute approximately 25 Birr/year/child, or 50 Birr per HH		
Clothing	Control HHs buy on average 1 cloth/year valued at 126 Birr	SHG HHs average 285 Birr/year	SHG households are spending an additional 159 Birr per year on clothing, more than double that of control groups
TOTAL EXPENDITURES	11,126	28,054	16,928

6.4 SHG programme costs

Costs over the 4.5 years of programme operation in Fincha are documented below.

Table F5: Summary of total programme costs by budget item

Budget item	Total cost (Birr)
Personnel	514,491
Recurring & admin costs	275,562
Capital expenses	90,489
Direct programme costs	708,503
Total	1,589,145

Table F6: Summary of programme costs by year

Year	Total cost (Birr)
2008/09	64,152
2009/10	535,656
2010/11	406,210
2011/12	356,397
2012/13 (6 months)	226,730
Total	1,589,145
Total + 15%	1,827,517

Costs are inflated in the model by 15 per cent to reflect head office overheads. Actual costs in 2012/13 are for only six months. The model doubles this figure to estimate the total costs for the whole 2012/2013 financial year.

The model assumes that SHG members who have been in the programme for ten years 'graduate' – in other words, no longer require external investment. It took approximately ten years for Nazareth to reach the point where the FLA was established and recognised by government, and this is taken as an indication that those SHGs are now largely self-sustaining. (For example, in Nazareth each member of the CLAs are establishing a new SHG each, paid for internally, doubling the number of SHGs.)

It is expected that SHG formation will continue to grow at a rate of 20 per cent (the average growth rate in the first ten years in the Nazareth programme, the longest-running programme). However, it is assumed that SHG growth will stop when concentration has reached 60 per cent of the total population (based on evidence from the India programme on which this programme is modelled). In Shambu/Fincha, with a total rural population of 131,365, SHG growth is capped at 13,000 SHG members (or 79,000 people based on six members per household), in year 16.

Clearly, new SHGs will require an initial ten years of support, and therefore costs required to sustain the SHG programme are estimated. The average cost per SHG

member, per year, in Nazareth, is 147 Birr (or £5), and this is applied to all new SHG members in the growth model. However, as noted above, these costs will be borne internally by the SHGs for new growth formation once the ten-year mark is passed.

Training costs

The SHG model is very much focused on organic growth. Skills and training are passed on to SHG members, and these are in turn passed on through the SHG, and through the formation of new SHGs. As a result, benefits multiply, while costs shrink.

Training provides one good example of this. The analysis below estimates the external training cost, and compares it with the SHG training cost as SHG members pass on skills to new SHG members. The analysis shows how internal training, at a lower cost, results in a cost saving of 542 Birr per person trained (weighted average). For the 1,721 members of the SHGs in Fincha/Shambu, this is equivalent to a total cost saving of 933,000 Birr, equivalent to approximately 51 per cent of the total programme budget, demonstrating significant cost efficiencies.

Table F7: Training costs

External training cost per person	SHG training cost per person	Cost saving (weighted average)
Training was undertaken in compost making, pit latrine construction, conflict resolution and cotton spinning, for an average cost of 750 Birr/member .	Note that compost making was passed on to other farmers, and has the potential to be replicated widely at little cost. Approximate cost 208 Birr per member	542 Birr

6.5 Cost benefit and sensitivity analyses

6.5.1 Baseline analysis

The cost benefit analysis (CBA) compares the costs with the benefits, using three approaches:

- 13) Individual case: The first CBA looks at an individual SHG with 17 members (average size), and estimates the costs and benefits over a 20-year lifetime. Costs are incurred for the first ten years at 147 Birr per person per year, and then it is assumed that the SHG 'graduates' and can continue accruing benefits for the subsequent ten years without further investment.
- 14) Market penetration: The second CBA takes the full programme data, and models the costs and benefits until the programme reaches saturation (using a 20 per cent growth rate, with saturation at 60 per cent of the population). The model is run until all members have graduated, in this case for 26 years. This model is therefore assuming that observed benefits can be extrapolated to the full programme.

15) Donor-funded: The two cases above assume full costs to achieve benefits – which is the approach that should be taken with CBA, regardless of where the funds come from. However, once the first group of SHGs reaches ‘graduation’, they are capable of sustaining growth of new SHGs. Therefore the model is run again for the whole programme, but accounting only for external funding in the first ten years. At this point, funding ceases as it is assumed that all new growth thenceforth is generated from within SHG clusters.

Benefits are delayed in the model until year two. While benefits have been shown to accrue in year one, benefits have not yet reached their full potential. It was difficult to estimate the proportion of benefits accruing in year one, and therefore a conservative stance was taken, with benefits delayed until year two.

Education is averaged over 20 years, assuming three school-age children per SHG household (per national statistics and SHG statistics). This is to account for the fact that SHG families are likely to have children at different ages, attending school at different times, and hence the benefits are spread over a longer timeframe (rather than assuming a full six years of schooling benefit up front).

The benefit-to-cost ratio (BCR) is break-even if the ratio is 1:1. In other words, for every dollar invested, you get a dollar return. Anything over 1 indicates a positive return.

Table F8: Fincha/Shambu benefit-to-cost ratios

	BCR
Scenario 1: Individual SHG	165:1
Scenario 2: Market penetration	130:1
Scenario 3: Donor-funded	285:1

6.5.2 Sensitivity analysis

Sensitivity testing is used to test certain assumptions in the model, to see how sensitive the findings are to these assumptions. In this case, the individual SHG model is adjusted as follows:

- Benefits are accrued for ten and 30 years (as compared with 20 in the baseline).
- The discount rate is adjusted to three per cent and 15 per cent (as compared with 10 per cent in the baseline).

Table F9: Sensitivity analysis

	BCR
Baseline – individual SHG	165:1
10-year benefit stream	113:1
30-year benefit stream	185:1
Discount rate 3%	217:1
Discount rate 15%	143:1

Annex G: Sampling framework

Description	Project Gilgal		HIV Project Fincha/Shambu		HIV Project Shebedino-Leku		Food Security Wolaita		NCDP Nazareth		CCMD Hawassa		Total	
	SHG	Control	SHG	Control	SHG	Control	SHG	Control	SHG	Control	SHG	Control	SHG	Control
No of FGDs conducted	14	7	14	7	14	8	8	5	8	4	7	3	65	34
No of people interviewed	116	46	82	74	136	59	72	75	80	40	58	30	544	324
Number of SHGs in study area	145		107		78		163		411		192		968	0
Sampling population	2465	0	1721	0	1560	0	2388	0	6620	0	3040	0	17,794	0
Population size in the study districts	354,892		131,365		98,714		201,013		222,035		139,891			

Locations of field work:

- Gilgal: SNNP Region: Shebedino district (*Dilla Afrara, Taramessa, Alawoanno*); Sodo Zuria district (*Sholla Kodo and Habba Gerera*)
- Fincha/Shambu: Oromiya Region: Horo district (*Didibe Kistana, Gitilo Dale, Sekela; Kombolcha Chancho, Shambu town – K01*); Abeychoman district (*Fincha town – Kebele 01; Fincha Valley – Agamsa village*)
- Leku: SNNP Region: Shebedino district (*Taramessa, Dobenegasha, Leku 01; Alawoanno, Remeda, Morocho Shondolo, and Konsore anno*)
- Wolaita: SNNP Region: Kindokoysha district and Offa district (*Atilacha, Sere Balaka, Sere Atalacha, Fajenamata, Offa Esho*)
- Nazareth: Oromiya Region: Adama Special Zone (*Nazareth town – Kebele 01, Kebele 04 Kebele 13, Kebele 14*)
- Hawassa: SNNP Region: Hawassa Zuria (*Hawassa city – Tulla Sub-city, Datto Odahe, Mehal sub-city: Leku; Haykdar sub-city: Gebeya Dar*)