FairVoice:
Harnessing mobile technology to amplify producer insights

A remote data collection pilot study on adaptation to climate change with coffee farmers in Kenya

FAIRTRADE
AFRICA

FAIRTRADE
FOUNDATION

July 2023

Contents

Executive summary

In 2022-23, the Fairtrade Foundation worked with Fairtrade Africa and three coffee co-operatives in Kenya (Kagaari North Farmers' Co-operative Society, Mutira Coffee Growers' Co-operative Society, New Gikaru Farmers' Co-operative Society) to develop our FairVoice methodology.

FairVoice aims to harness technology to create a more direct connection between producers and other actors in the supply chain, such as commercial partners. It is a unique mixed-methods solution for remote data collection, using digital channels to enable direct producer insights in a way that is convenient and accessible for them.

FairVoice has two approaches: FairVoice Mobile Surveys for quantitative insights and FairVoice Community Researching for qualitative insights.

In August 2022, we implemented the FairVoice Mobile Survey for the first time, contacting farmers in the three coffee co-operatives via their mobile phones to answer questions relating to climate change and climate adaptation.

In February 2023, we worked with farmers in two of the coffee co-operatives for a deeper dive into the findings through our Community Researching model. A total of 29 farmers were trained to share their stories and interview people in their community via mobile phone, providing in-depth qualitative insights on the topic of climate adaptation.

> 'Fairtrade has impacted my life by helping me to utilise my small land well… I learned the dangers, effects of climate change in our region and how/what I can do to adapt to it.'
> *Wilson Mwangi, FairVoice Community Researcher*

Community Researchers come up with a short story on climate adaptation at Kagaari North Farmers' Co-operative. Society.

Through these methods, we were able to build a case study of coffee farmers and climate adaptation. Key findings from the research include:

93 percent of coffee farmers reported experiencing the effects of climate change on their farm.

90 percent reported using climate-friendly agricultural practices.

80 percent feel prepared to face the effects of climate change.

72 percent reported that the price they receive for their Fairtrade coffee allows them to invest in their farms to prepare for climate change.[i]

77 percent feel that their small producer organisation spends Fairtrade Premium on projects that help them prepare for climate change.

Farmers in the three co-operatives reported using the income from Fairtrade sales to invest in climate resilience on their farms, including environmentally friendly water and pest management, planting shade trees, and diversifying their income to improve their economic resilience.

Farmers discussed how their small producer organisations were investing Fairtrade Premium in projects that help them prepare for climate change, including hiring agronomists, buying solar coffee driers, and distributing new climate-resilient varieties of coffee plants.

Despite the challenges posed by climate change, the level of optimism farmers had for the future of coffee farming was generally high and from the analysis of their responses, many farmers showed a high adaptive capacity.

This FairVoice project has provided valuable insights from farmers on the topic of climate change, but it has also enabled us to test and refine our research methods. With each FairVoice project, we trial new ways of working and capture what we learn to continuously improve the tool and maximise the benefits for all Fairtrade stakeholders.

We also continue to promote the use of FairVoice as part of our evidence and insights work at Fairtrade and we are exploring new ways of using the tool in the future.

Background and context

Fairtrade is committed to amplifying the voices of farmers and workers, and we strive to incorporate their insights in all the work we do as a system. FairVoice aims to harness technology to create a more direct connection between producers and other actors in the supply chain.

With the onset of the COVID-19 pandemic, traditional methods of data collection became challenging at a time when understanding the impacts of the global crisis was paramount. To address this, Fairtrade explored new options for direct communication with farmers and workers via mobile technology, while ensuring robust data validation processes through Fairtrade producer networks. The result is our FairVoice tool.

FairVoice is a unique mixed-methods solution for remote data collection, using digital channels to collect insights from producers in a way that is easy and accessible for them. FairVoice has two approaches: FairVoice Community Researching for qualitative insights, and FairVoice Mobile Surveys for quantitative insights.

Our vision for FairVoice is to use technology to support farmers and workers to feel better connected and ensure they have a greater voice and more influence in value chains and the Fairtrade system itself. As a result, commercial partners will have a better understanding of the needs of farmers and workers in their supply chains, and the experience and insights producers share regarding the issues that affect them can play a greater role in sector discussions.

We also hope to address some key challenges experienced by practitioners working in supply chain research, such as enhancing the role of qualitative data, as well as providing opportunities for lean data and more rapid insights.

A key area where it is increasingly crucial to learn directly from farmers is the impact of climate change and the changes in processes and practices they are making to adapt to and reduce the risks it poses (referred to as climate adaptation in this report).

Coffee, specifically Arabica varieties grown for their improved taste compared to the more heat-tolerant Robusta, are particularly sensitive to increases in average temperatures beyond their optimum range of 18-22°C.[ii] Recent analyses suggest that under an RCP4.5[iii] scenario, regions in Kenya will continue to be meteorologically acceptable to grow coffee. Under more extreme climate scenarios however, conditions would become significantly more challenging for coffee farmers in this region.[iv] Meanwhile, some of the most common pests that coffee farmers face, such as the coffee berry borer, are likely to increase in spread and severity in Kenya with increased average temperatures.[v]

Coffee farmers in the three co-operatives are experiencing climate change first-hand. Kagaari North Farmers' Co-operative Society, Mutira Coffee Growers Co-operative Society, New Gikaru Farmers' Co-operative Society are in the eastern and central regions of Kenya, specifically Embu, Nyeri and Kirinyaga counties, respectively. Agriculture is the mainstay of these counties' economy, and they are among the top ten coffee producing counties in Kenya. The co-operatives indicate that there has been undeniable and discernable change in climate in the last five to ten years, making climate change a major threat to coffee production in these co-operatives. This has affected the coffee production trend, with a decline attributed to prolonged dry spells, intermittent rainfall, the drying up of water bodies such as local rivers, and increased cases of pests and diseases on coffee trees. Studies predict that by 2050, Kenya will have less seasonality in its climate with maximum mean temperature predicted to increase to 31.2°C. Rainfall is predicted to increase from 1,405mm to 1,575mm by 2050 with a distribution that is not necessarily favourable for coffee. A shift of optimal coffee producing zones from currently 1,600m above sea level (ASL) to higher altitudes at 1,700m ASL is expected based on these changes. The study further estimates that suitability for coffee production is currently at 50 to 70 percent, but suitability by 2050 is predicted at 30 to 60 percent.[vi][vii]

In response to the increasing challenges for coffee producers, Fairtrade has raised its Minimum Price for coffee in an effort to strengthen protections for coffee farmers around the world amid the intensifying impacts of climate change and the growing global economic volatility.

The new Fairtrade prices, which come into effect for contracts signed as of 1 August 2023, will increase the baseline price by 19 percent and 29 percent respectively for Fairtrade certified Robusta and Arabica coffee. This will provide farmers with a significant financial safety net in times of wild market fluctuation, and as they face inflation in their home countries and substantial additional costs due to climate change adaptation. The findings in this report will help to highlight the practices and challenges farmers are facing to adapt to climate change ahead of this price increase.

Two Community Researchers practice interview skills at New Gikaru Farmers' Co-operative Society.

Methodology

FairVoice Mobile Survey

In August 2022, the Fairtrade Foundation and Fairtrade Africa launched a pilot study using our FairVoice Mobile Survey technology.

Created with financial support from Switzerland's State Secretariat for Economic Affairs and in partnership with Max Havelaar Switzerland, FairVoice Mobile Surveys focus on quantitative data collection and feature a 15-minute SMS text questionnaire. Questions are mostly closed questions with some options to share more information in open-ended text. These short surveys mean that we can gain a range of insights across a topic in a questionnaire that respondents can answer in their own time. Repeat surveys mean that the tool can also be used to track changes over time, as well as asking farmers for real-time feedback on programmes and training.

Developing the FairVoice Mobile Survey tool

Building on an existing technology platform that already collects qualitative data, the Mobile Survey tool was designed to incorporate quantitative data into the same tool, giving breadth and scale to the mobile data collection possibilities.

Fairtrade adopted an Agile approach throughout the design and development process. Agile development is an iterative approach to developing software, engaging input beyond the development team at regular intervals to review, feed back, realign and reprioritise as necessary. This approach ensured that the development of the final product was reflective of what Fairtrade users and stakeholders need.

Core to the design of the tool was participation with potential users, to which Agile development lends itself well. We did this firstly by conducting extensive stakeholder consultations to design a product roadmap for the tool. Then, throughout the process, these stakeholders were given opportunities to consult and share their feedback through user-research methodologies.

The pilot Mobile Survey study

We designed a pilot study to test the FairVoice Mobile Survey's functionality while also collecting data relevant to farmers, co-operatives, the Fairtrade system, and our partners. The Mobile Survey enabled farmers who had consented to be contacted to respond freely in their own time and at their own pace. We documented feedback and learning from using and deploying the survey during the pilot, which was integrated into the final round of development of the FairVoice tool.

In addition to testing the Mobile Survey, the pilot study aimed to gather insights from Fairtrade coffee farmers in three Kenyan co-operatives regarding their experiences of adapting to climate change and the economic, social and environmental impacts.

The key areas of climate perceptions and adaptation actions in the survey (economic, social and environmental) were derived partially from the Committee on Sustainability Assessment Resilience Indicator Library.[viii] However, because of the mobile survey approach, we aimed to use a 'lean' questionnaire to capture key findings in themes that would be the most relevant and approachable for farmers to answer via SMS.

We also limited the questions to those that referred to current perceptions and adaptation practices on climate – instead of asking for responses to past shocks or infrastructure access. It is important to note that because of this design, while the findings in this report centre on farmer voice and experience, they do not fully explore the structural conditions around resilience which are also critical to climate adaptation.

The Mobile Survey contained nine quantitative and 11 qualitative questions organised into automated 'flows'. These questions included Likert questions, which means farmers were asked to what extent they agreed with a statement on a scale of one to five, as well as open-ended questions to probe themes further. The survey questions can be found in Annex 2.

In total, we sent the survey to 351 farmers over a period of one week. There were technical issues, for example around 'blacklisting' of commercial numbers, which prevented the survey from reaching 63 farmers. Blacklists are common in countries where mobile phone numbers receive high volumes of spam messaging. Users opt for their number to be added to a blacklist, which blocks them from receiving commercial messages. At the end of the data collection period, of the surveys that reached farmers, we received 73 completed surveys, a response rate of 20.8 percent. In the most engaged co-operative, the response rate reached 30 percent, which Fairtrade Africa reflected was high compared to other mobile tools that they have used.

Mobile Survey data cleaning and analysis

Following data collection, we cleaned the quantitative data manually and identified unlikely responses. For example, coffee production values that appeared too high or too low to be feasible, ages that appeared to be missing digits (for example, '5' instead of '50'), and Likert responses that did not align with the qualitative follow-up answers.

The Mobile Survey tool allowed us to easily follow up and validate or clarify farmers' responses directly. We sent farmers SMS messages asking to confirm or update any values that appeared unlikely in our review and updated the data accordingly. Those who did not reply or could not confirm were removed from the dataset as outliers. Following data cleaning and clarification with participants, we conducted descriptive analyses using Microsoft Excel.

Participants' survey responses included their reflections on 11 open-ended questions. We coded these responses via NVivo 12 (a qualitative data analysis software tool) using a combination of inductive and deductive strategies, and engaged in memoing throughout the process to identify negative cases in the data. The themes that emerged from inductive coding centred around farmers' experiences of climate change; coffee production and the significance of diversified incomes; their preferred adaptation practices; and the role of co-operatives and Fairtrade in supporting farmers to improve resilience.

In addition to inductive coding, we developed a codebook aimed at understanding the adaptive capacity of farmers to plan, prepare and respond to climate change. The codes we developed were based on components of adaptive capacity outlined by Katrina Brown and Elizabeth Westway's review of the concept,[x] as well as from earlier applied research exploring climate vulnerability with Ghanian women cocoa farmers.[xi] We coded responses for cases of intangible adaptive capacity. For example, instances where farmers referred to knowing about and accessing outside support (through co-operatives, government services, their communities, Fairtrade or other sources); where they showed optimism and flexibility in their view of the future; and where they demonstrated and engaged with multiple forms of knowledge regarding adaptation practices. Negative cases, or examples of low adaptive capacity, were coded into the same themes. Together, these codes and themes were aggregated for the entire sample to provide indicative insights on the areas of stronger and weaker adaptive capacity, as mobile survey data does not provide rich enough data to understand this for individual farmers.

All results were also aggregated for each small producer organisation and validated with Fairtrade Africa and small prouder organisation leadership.

Joshua Ogure leads a feedback session with CommunityResearchers at New Gikaru Farmers' Co-operative Society.

Joshua Ogure reviews Community Researchers' practice stories at Kagaari North Farmers' Co-operative Society with (from right) Abraham Muriithi, Josyline Wambogo Njagi, Esther Gatwiri

Comparing FairVoice Mobile Surveys to in-person surveys

While mobile phone use in Kenya is significantly higher than average in Sub-Saharan Africa,[xii] in the pilot design, we were aware of the potential challenges with mobile surveys when compared to in-person approaches, such as lack of access to women, older people, those with low levels of formal education, and people in rural areas.[xiii]

Beyond working with co-operative leadership to help mitigate these issues and include as many members as possible in the survey, we were keen to compare data from the Mobile Survey to those collected in person with farmers. This comparison allows us to determine where sampling and results differ between methodologies to contextualise findings and further develop the FairVoice Mobile Survey tool.

To compare mobile and in-person results, in April 2023 we included several of the Mobile Survey questions into an in-person data collection exercise in two of the three co-operatives included in this study. The in-person survey had a larger sample size of 149 and represented a 10 percent margin of error and 95 percent confidence interval for farmers participating in a Fairtrade climate programme.

Demographically, the Mobile Survey had older participants, with an average age of 50 years, and represented proportionally fewer youths (farmers between 18-35) than the in-person survey. The proportion of women respondents was almost identical across both methods, where 30.2 percent of participants identified as female. These findings indicated that for this pilot study, the FairVoice Mobile Survey has limited some of the more common concerns of mobile survey collection. This is likely to be due to the significant support farmers received from co-operative leadership to inform them in advance about the study and address any questions or concerns.

However, we have highlighted in the report the cases where in-person and Mobile Survey results have significantly differed. Interestingly, the variance was non-existent or less pronounced in questions about individual circumstances, for example around experiences of climate change, affordability of preparation practices, and ability to rely on family and friends. Variance between the Mobile Survey and in-person survey results increased for questions related to co-operatives; future research and testing of the Mobile Survey tool will explore the reasons for these differences.

FairVoice Community Researching

In February 2023, we expanded our work with two of the Kenyan co-operatives to deliver a FairVoice Community Researching project: Kagaari North Farmers' Co-operative Society and New Gikaru Farmers' Co-operative Society .

FairVoice Community Researching utilises a qualitative and story-based data collection methodology. We work with small numbers of participants to provide training on sharing their stories via mobile technology, as well as how to encourage their local community to share their experiences too. This snowball sampling methodology means that harder-to-reach individuals have the opportunity to share their insights. Participants receive questions on their phones, typically as open-ended themes to ensure that they can explore topics that are most relevant to them, and that their stories and insights can be shared back via text, voice notes, photos, or video (depending on phone access).

In Kenya, 29 Community Researchers were selected for this project and trained to share their stories, and those of their communities, using their mobile phones. Working with a partner specialising in establishing community reporter networks, the participants were trained on the importance of telling their story and that of their community, and how to collect and share stories safely using their phones.

Over a period of six weeks, this group of Community Researchers received a weekly question on climate resilience to guide them and they were supported by a local mentor to frame and shape their responses. Over the course of the project, 95 reports were shared. Over 90 percent of participants shared two or more reports. Fairtrade Africa validated all reports that were shared.

Following the data collection's completion, all information was exported from the central dashboard underpinning the FairVoice technology and uploaded to NVivo 12 for analysis. As the Community Researching phase followed the Mobile Survey analysis, coding was completed while cross-referencing to the coding framework established through the analysis of the Mobile Survey, including codes around adaptive capacity. However, we continued to adopt an inductive approach in this phase, as new themes emerged from the rich data within farmers' in-depth stories and multimedia reports.

Presentation of findings

The findings in this report are presented around the key questions asked through both the Mobile Survey and Community Researching.

- Do Fairtrade coffee farmers feel prepared for climate change? What actions are they taking to prepare and how do they make these decisions?

- How does being part of Fairtrade support farmers to increase biodiversity on their farms?

- Can farmers afford to respond to climate shocks and prepare for climate change? How does Fairtrade support this?

- How do co-operatives and communities help Fairtrade coffee farmers adapt to climate change?

- What is adaptive capacity, and do Fairtrade coffee farmers demonstrate this?

Community Researchers share their personal stories and experiences during a training session at Kakaari North co-operative Society.

Findings

Do Fairtrade coffee farmers feel prepared for climate change? What actions are they taking to prepare and how do they make these decisions?

The results of the Mobile Survey indicated that Fairtrade farmers are already experiencing the effects of climate change: **93 percent of farmers reported having already done so**. The most common changes discussed by farmers in the Mobile Survey included changes in temperature (for many, this involved colder weather), changes in rainfall, and an increase in pests – particularly coffee berry disease and thrips.

Despite already experiencing climate change, Fairtrade farmers reported feeling prepared: **80.8 percent of farmers agreed or strongly agreed with the statement, 'I feel prepared to respond to the effects of climate change on my farm.'** Of the remaining farmers, 16.4 percent neither agreed nor disagreed with this statement, and 2.7 percent indicated they felt unprepared for climate change. It should be noted that the interpretation of preparedness can be subjective, for example including economic preparedness or properly applying agricultural practices, so this topic needs further exploration in future research.

In open-ended responses on the Mobile Survey, **farmers discussed a variety of strategies to prepare for climate change**, including agricultural practices to manage unpredictable rainfall; planting climate-resilient varieties of coffee; and income diversification through agroforestry practices, livestock and beekeeping initiatives.

> 'Me and my community are trying to preserve water sources, planting trees and preventing soil erosion. We make decisions through discussion and community meetings.'
> *John Gachenga, FairVoice Community Researcher*

> 'This is a coffee plant with its leaves affected having yellowish leaves which are dropping at a high rate leaving the plant unhealthy to hold the flowers that have been brought up for early harvest.'
> *Wilson Nderi, FairVoice Community Researcher*

Chart 1: Coded responses from Community Researchers on agricultural practices as actions taken to prepare for climate change

Agricultural practices

In the Community Researching project, researchers were asked to explore the practices farmers in their communities use to prepare for climate change. The most frequently cited action taken was to change agricultural practices; this result was mirrored in the Mobile Survey. When asked whether they agreed with the statement, 'I use farming practices which help me prepare for the effects of climate change,' farmers were resoundingly positive: **90 percent of farmers indicated they used climate-friendly agricultural practices**.

The most common agricultural practices farmers reported using in the Mobile Survey to prepare for climate change included **mulching and terracing** to manage water, planting shade trees, and using fertiliser and pesticides appropriately. Farmers who reported feeling the most prepared for climate change also discussed **planting new climate-resilient varieties of coffee**.

Chart 1 shows a breakdown of the different practices referenced by the Community Researchers, with tree planting and mulching (a thick layer of material placed over the soil and around plants, to lock moisture into the soil) being the most frequently mentioned.

'To prepare for climate change, we are planting new crops that will thrive under the new climate conditions e.g. we have established a coffee tree nursery that has disease resistant varieties to supply to the farmers at subsidised prices. We are also:

- Planting shade trees in the coffee farms.
- Using mulch on the farms to prevent water loss from the soils.
- Advising farmers to close running taps when not in use and repair leaking taps for water conservation.
- Advising farmers to stop farming on riparian land (terrain that is adjacent to the rivers and streams).'

'To make decisions, we call for consultative meetings with the farmers during farmer training days. We also hold special general meetings for farmers, and the management board members hold meetings to find solutions to some of these problems.'

'Yes, we feel prepared for climate change since we have held several trainings with the farmers on climate change and have promoter farmers and an agronomist on the ground to give advisory services to the farmers.'

Annet Kariuki, FairVoice Community Researcher

Many Community Researchers discussed how decision-making on how to respond to climate change was done at a community level or through peer exchange, highlighting the importance of social capital in adaptation. Many also discussed weather monitoring as a key way they make decisions, and having knowledge of what action to take depending on the weather situation.

Peter, a coffee farmer, demonstrates mulching to Pius as part of his community research interview.
Photo taken by Pius Munene Njogu, FairVoice Community Researcher

'I take decisions by listening and evaluating the stories from other farmers.'
Chege MP, FairVoice Community Researcher

'To make decisions I have studied the weather patterns over time and observed its behaviour and this guides me on the actions to undertake. I feel slightly prepared but not fully since nowadays the weather has become somewhat unpredictable and as such I am required to do more than I have done. Some farmers do study the weather patterns, and this should be the practice to all in order to make informed decisions.'
Nicolas Njagi, FairVoice Community Researcher

Chart 2: FairVoice Mobile Survey responses on preparation for climate change

I use farming practices which help me prepare for climate change

2% Disagree

7% Neither agree nor disagree

38% Strongly agree

53% Agree

Leah Mutinda from Fairtrade Africa explains to Community Researchers example topics they can report on and how Fairtrade Africa can support them.

How does being part of Fairtrade support farmers to increase biodiversity on their farms?

The Mobile Survey findings suggested that the agricultural practices that farmers use to prepare for climate change, such as agroforestry, tree planting and diversification, were worthy of deeper exploration through the Community Researching method. And so a key question explored through Community Researching was how farmers' actions to adapt to climate change include increasing biodiversity on farms.

The Fairtrade Standards for small producer organisations include requirements for biodiversity, such as conservation of protected areas, protection of forests and vegetation, prevention of deforestation, the maintenance of natural ecosystems and wild harvesting and the maintenance of buffer zones. However, it was clear through the Mobile Survey responses that farmers engage in practices that protect and improve biodiversity beyond the Standards, including increasing agrobiodiversity on their farms in ways that also improve their economic viability in the context of climate change, the surrounding environment and farmers' livelihoods.

Community Researchers discussed intercropping as the predominate action taken to increase biodiversity on farms, alongside training on agricultural practices, other diversification activities and tree planting. Chart 3 breaks down the different actions that increase biodiversity as referenced by the Community Researchers across the different stories shared.

'Biodiversity helps the small scale farmers. Farmers are advised to utilise their small farms by practising different types of farming such as livestock, bee keeping and also intercropping where necessary. On coffee farms, especially where the farm is sloping, farmers dig trenches where they plant various types of grass which is used for feeding livestock and also for mulching. Diversification is very important to coffee farms because some tree crops have nutrients e.g. pawpaw produces nitrogen which is suitable for coffee, cover crops also are very important because they also prevent soil erosion and again can be used for feeding'
Peter Mwaniki, FairVoice Community Researcher

'When the soil is well covered by trees and ground cover insects it helps coffee pollination have a good habitat, which raises the production… Due to climate change the community are now planting fast growing crops like cassava and sweet potatoes. By implementing new crops we can sell trees and we can have firewood. Ground cover helps coffee to keep water. It helps coffee not to dry. Fairtrade supports us with training on these diversity techniques. '
David Waithaka, FairVoice Community Researcher

Chart 3: Coded responses from Community Researchers on actions to increase biodiversity

Bar chart showing Number of references (y-axis, 0 to 7) for the following categories:
- Intercropping and crop diversification: 7
- Training: 5
- Diversification: 5
- Tree planting: 4
- Reduced deforestation: 1
- Careful use of chemicals: 1

Can farmers afford to respond to climate shocks and prepare for climate change? How does Fairtrade support this?

In addition to facing potential income losses from coffee harvests due to climate change-related diseases or pests, preparing for climate change can be expensive for farmers. Nearly all of the practices farmers reported adopting – such as investing in diversification, new varieties of coffee plants, and improvements in water and pest management – incur costs. In light of this reality, we asked farmers about how economically prepared they felt in relation to climate change.

To understand how well-adapted and prepared farmers are when it comes to the future impacts of climate change, the survey asked them about their current ability to respond when they experience the economic shock of a poor harvest due to weather or pests. A slight majority (51.4 percent) of farmers felt they could afford to support their households when coffee harvests were affected by poor weather or pests. However, 33.3 percent of farmers surveyed felt they could not afford to support their household when coffee harvests are poor, and 15.3 percent were neutral. This suggests that farmers' ability to economically absorb the negative effects of climate change on their farm, including diseases, pests and poor weather, is mixed and further interventions are necessary to help them feel economically prepared.

When asked to elaborate on why they did or did not feel they could afford to support their households when coffee harvests were poor, farmers discussed their income diversification strategies or heavy financial reliance on coffee farming, respectively.

Income diversification was a cross-cutting theme that appeared in farmers' responses to nearly all of the open-ended questions, as well as with the Community Researchers. Farmers who were diversified indicated that they received additional income from other crops: cattle, including dairy cows; beekeeping; other enterprises; and casual employment.

While farmers surveyed gave a mixed view of their current economic capacity to respond to poor coffee harvests and prepare for climate change, our preliminary results generally suggest that coffee farmers see Fairtrade as helpful in supporting them to financially prepare in the long-term.

'This macadamia was planted after receiving coffee payment and it will provide shade to the young coffee.'
Pius Munene Njogu, FairVoice Community Researcher

Fairtrade Minimum Price

The Fairtrade price for coffee supports farmers to prepare for climate change: **72 percent of farmers agreed that the price they receive for Fairtrade coffee allows them to invest in their farms to prepare**. The most frequently mentioned investments included new varieties of coffee, appropriate levels of inputs, and income diversification strategies, including additional crops, bees and cattle. While the question asked during the survey specified 'Fairtrade coffee', it should be noted that farmers can find it difficult to parse the different prices they receive for coffee, and so this value can be interpreted as the farmgate they receive for all of their coffee sales, including those sold on Fairtrade terms.

Specifically, in the open-ended questions, **farmers reported that the price they receive for coffee is of critical importance to their overall income and livelihood**. In fact, when asked about how coffee farming would change in the next ten years, most farmers **expressed optimism about higher production and livelihoods for farmers, but only if prices remained strong**. Community Researchers discussed similar topics when asked about the role of the Fairtrade price in supporting adaptation. The most frequently mentioned investment was in regards to input and labour costs, followed by diversification activities.

This consistent finding across the two data sources highlights how stable prices not only benefit coffee production but enable farmers to invest in other activities that improve long-term sustainability. Future assessments following the Fairtrade Minimum Price increase in 2023 will be useful to understand the extent to which the price increase further supports farmers with climate adaptation.

There is, however, limited evidence that Fairtrade's economic mechanisms (such as Fairtrade Minimum Price and Fairtrade Premium) support farmers financially when coffee harvests are poor: **only 52.8 percent of farmers agreed that Fairtrade financially supported them when coffee harvests were affected by poor weather or pests**, and 37.5 percent disagreed. Our in-person surveys mirrored this finding, with a smaller proportion of participants agreeing with the statement. When prompted to discuss this topic further, farmers explained that Fairtrade support was linked closely with the amount of coffee they produced. As such, when coffee harvests are low, the benefits of Fairtrade decrease alongside production. However, it is important to note that farmers may not always differentiate between Fairtrade and other supports on the farm; additional research could be conducted to further explore this theme. Many farmers also discussed the non-financial benefits of Fairtrade during low production, including training and low-cost inputs through their co-operatives.

Chart 4: FairVoice Mobile Survey responses on coffee prices and investing to prepare for climate change

7%
Strongly disagree

6%
Disagree

28%
Strongly agree

The price I receive for Fairtrade coffee allows me to invest in my farm to prepare for climate change

15%
Neutral

44%
Agree

'The Fairtrade price I received has helped me to implement some changes on my farm to support climate adaptation.

- Bought avocado and macadamia trees as a way of diversification. The trees help reduce carbon dioxide in the atmosphere.

- Got money to hire men to do terracing and do mulching in my farm hence control soil erosion.

- Avocado and macadamia provide shades in my coffee bushes hence minimising loss of moisture in the soil.'

George Ihuthia, FairVoice Community Researcher

'The Fairtrade price that we receive has had a great impact on the coffee farmers in the adaptation to climate change. This is because farmers have used the payments received to perform various activities that can assist them to prepare for climate change. These actions include installation of water harvesting systems, acquisition of water storage tanks to be used during dry spells, drilling of boreholes, acquisition of resistant coffee varieties and shade trees, among others.'

Nicholas Njagi, FairVoice Community Researcher

'The Fairtrade price has helped me adapt to climate change enabling me to plant food crops and traditional trees for capturing gas emissions.'

Joselyn Wambogo Njagi, FairVoice Community Researcher

Fairtrade Premium

The Fairtrade Premium is another key mechanism that enables farmers to make collective investments. Farmers in the Mobile Survey reported that their co-operatives spend the Fairtrade Premium on climate-friendly projects: **76.7 percent of farmers agreed that their co-operatives spend the Fairtrade Premium on projects that help them prepare for climate change**. Only 9.6 percent of farmers surveyed disagreed with this statement, and 13.7 percent were neutral. We note that our in-person survey results differed here, where fewer participants agreed on this topic.

The most frequently mentioned uses of the Fairtrade Premium included the installation of solar dryers at the co-operative, beekeeping projects and the hiring of agronomists to support farmers in adopting climate-friendly agricultural practices. Community Researchers also mentioned investments in farm inputs and nurseries for climate-resistant crops to enable farmers to access this at lower cost as an important way of ensuring affordability of adaptation. Also discussed were investments in water storage tanks, water harvesting and boreholes, which support farmers to adapt to changes in rain cycles.

> 'The co-operative has been of great help to us in adaptation to climate change. This is because it has played various roles including training farmers on how they can adapt to climate change, establishment of resistant coffee varieties nursery/shade trees, installation of coffee solar dryers for coffee drying even in wet weather. '
>
> *Nicholas Njagi, FairVoice Community Researcher*

How do co-operatives and communities help Fairtrade coffee farmers adapt to climate change?

Climate adaptation does not just occur at the farm or household level, but instead involves building resilience and support within entire communities. In the Mobile Survey, we asked farmers questions around support they receive from their co-operatives, as well as their family, friends and broader community.

In terms of receiving support from friends, family and community when coffee harvests are poor, the farmers surveyed did not report high levels of social resilience. **Only 43.6 percent of farmers agreed that their friends, family and community could support them when coffee harvests were poor**.

Farmers who reported having families who supported them described their families as having diverse sources of income. Importantly, **many farmers included non-financial support in their explanations, describing the significance of encouragement, advice and moral support from their social circles when facing difficulties**.

When prompted to elaborate on why their families, friends and community could not support them when their harvests were poor, farmers reflected on **family- and**

community-wide reliance on coffee for income. In short, they believed that **if their harvest was poor, their friends, family and neighbours would be in a similar financial situation**.

Farmers were more positive when reporting on support they receive from their co-operatives: **65.7 percent of farmers agreed that their co-operative supports them** when coffee harvests are affected by poor weather or pests. However, we noted that our in-person survey results showed a lower proportion of farmers agreeing with this statement.

When prompted, farmers discussed the importance of the co-operative offering low-cost inputs to support production and loans during times of low income, as well as ongoing training and support to improve production in the long-term, as seen in the previous section. Over a third of responses to this topic from Community Researchers also highlighted the important role that co-operatives play in training and knowledge-sharing when it comes to their ability to adapt to climate change.

Chart 5: FairVoice Mobile Survey responses on social and community support

- 17% Strongly agree
- 28% Strongly disagree
- 27% Agree
- 23% Disagree
- 6% Neither agree nor disagree

My friends, family and community could support me when coffee harvests are poor

Total exceeds 100 percent due to rounding

What is adaptive capacity, and do Fairtrade coffee farmers demonstrate this?

Adaptive capacity refers to the ability of human systems – from individuals and communities to nation-states – to respond and change when experiencing disturbance, for example, from the impacts of climate change.[xv] Dimensions of adaptive capacity we included in our analysis for this pilot research were the willingness of individuals and systems to live with and respond to change and uncertainty; access to and openness to new and varied climate knowledge; embracing diversity of practices, opinions and beliefs; and optimism and confidence for adaptation and a sustainable future.

The Mobile Survey was not designed to measure the broader, system-level indicators of adaptive capacity – for example, government policy and leadership, regional emergency or crisis response systems, or societal beliefs, norms and power structures. Instead, our pilot findings offer an insight into the adaptive capacity of the coffee farmers who participated (and to a lesser extent the community within co-operatives) through a qualitative assessment of the practices, attitudes, knowledge and beliefs expressed through the open-ended questions in the survey and an analysis of their Community Researching reports.

As indicated above, **most farmers (80.8 percent) expressed optimism** when asked about their preparedness to climate change. When farmers' responses were assessed for adaptive capacity, our analysis found **415 instances of high adaptive capacity** across approximately 750 open-ended responses. In particular, we found that:

- Farmers who demonstrated high levels of adaptive capacity **frequently mentioned access to Fairtrade and co-operative training on climate change** and how best to prepare. These responses indicated that the farmers surveyed are, in general, able to access information and support on responding to the risks associated with climate change, which will help farmers to prepare in advance and mitigate negative impacts.

'With the current issue of climate change I see many farmers not being able to predict their coffee production due to the extreme weather conditions that don't favour them. The farmers are also not able to rely on the fluctuating incomes. In the future farmers need to change to disease resistant coffee varieties so as to earn better and consistent earnings.'

Annet Kariuki, FairVoice Community Researcher

'Coffee farming seems to be fetching more product in our area if we practice what agronomists are educating us on how to adapt to climate change.'

Peter Mwaniki, FairVoice Community Researcher

- **Flexibility, including through income diversification, accepting new forms of climate knowledge, and agricultural practices, was also a very common example of positive adaptive capacity among the farmers surveyed**. Farmers who are open to multiple forms of knowledge, whether that's from within their community or agronomists hired by their co-operatives, for example, showed a higher confidence in applying these different ideas that can improve their ability to prepare and respond to changes. Furthermore, farmers' flexibility in their choices of crops and income sources suggests that they have a larger set of strategies from which to draw on if and when coffee harvests are affected by climate-related pests or adverse conditions.

- Farmers who generally shared responses indicative of high adaptive capacity also demonstrated **confidence in their abilities to adapt to climate change**, including their ability to navigate difficult environmental and economic situations.

This was mirrored by the Community Researchers. **Over 60 percent of the responses to a question on the future of coffee farming discussed positive aspects with regards to climate adaptation**. The most referenced reason for this was the capacity to implement alternative agricultural practices to enable farmers to respond to the changing climate.

However, **farmers did not uniformly express high adaptive capacity:** 114 statements from farmers were coded in the Mobile Survey as demonstrating pessimism, low flexibility, access to knowledge and support, or a lack of self-perceived agency. Most often, farmers indicated they were **uncomfortable or pessimistic** with the uncertainty associated with climate change. There were also some farmers who expressed **a lack of agency to improve their prospects** in regards to climate change, due to a belief that climate-related outcomes were the will of God or nature. Community Researchers also mentioned the need for government intervention.

While our sample size of female farmers in the Mobile Survey was small (n = 22, 30.2 percent), it was important to note that in this study they did **not** demonstrate a statistically significant difference in their perceptions of preparedness to climate change or adaptive capacity. Given that female farmers, particularly those with insecure land tenure, have demonstrated low adaptive capacity in previous studies,[iv] this is a positive preliminary finding worth further exploration in Fairtrade value chains.

Farmer stories

The following stories are just some of those shared by participants and feature a number of topics covered in the Community Researching project.

Pius Munene Njogu

Pius was one of the most engaged Community Researchers. Reporting from Kagaari North Farmers' Co-operative Society, Pius responded to every research task, often heading into his community to collect stories to share.

To explain how the Fairtrade price has helped towards climate adaptation, he shared his own experience. 'I am happy to say I have made a few steps in my adaptation journey... I have acquired a 3,000-litre tank, which I managed through the facilitation from my other four friends from the coffee payment. We formed a coffee promotion group whereby we purchase an asset for a

One of the seedlings being watered.

A farmer training on organic fertiliser and pesticides.

member after every [Fairtrade] payout. Through this we have managed to water trees, which are currently suffering the drought, to sustain them.'

He explained that he has also started to adopt composting practices due to the increased Fairtrade price. He shared that 'with composting, I have been covering [my land] to ensure methane gas doesn't rise up to the atmosphere... contributing to climate change.'

During the locally held farmers' field day, Pius went to train others on regenerative agriculture and promote agroforestry. While he was there, he took the time to understand some of the practices shared by other farmers. He explained how they are encouraged 'to use the Kuni Moja stove as it reduces the cutting of trees'.

'Fireless cookers, tree planting, agroforestry and minimal use of chemicals' were all cited as ways to adapt to climate change.

Pius also took the time to interview a community member called Francis to understand how climate change has affected him and what adaptation practices he has adopted. Francis shared how he felt he was a 'victim of climate change when most of his crops failed'. Now he has adopted practices such as minimal use of chemicals, turning to biogas instead of firewood, protecting the soil by planting crops to prevent erosion and beekeeping. He shared that these practices not only help adapt to climate change but have also helped him to better manage his crops, which in turn are more productive.

David Waithaka

David is one of the Community Researchers from the Fairtrade co-operative in New Gikaru. Over the course of the six-week Community Research project on climate adaptation, David reported on how his life has been affected by climate change and what he is doing about it.

David talked about how in recent years his community has been experiencing a 'very extreme hot climate'. He talked about the need for healthy seedlings to plant when the rainy season comes, and to build dams to catch water for domestic use and irrigation.

He explained that the Fairtrade price received by the farmers has helped with diversification of incomes,

such as 'chicken and pig rearing and arrowroot farming for other sources of money', and how the Fairtrade co-operative assists them with education on climate adaptation practices, including the mulching of the coffee farms, terracing and planting indigenous trees.

When asked about the future of coffee farming due to climate change, David opened up about his fears that coffee farming will decrease, and 'farms will be left poor financially'. He felt that adaptation practices such as 'planting macadamia, avocado, mangos and bananas' is a positive investment for farmers who will see the fruits of their work in the years to come.

Learnings and next steps

The development of FairVoice is focused on piloting, learning and adapting. With each project, we trial new ways of working and capture what we learn to continuously improve the tool so that is has the most benefits for all Fairtrade stakeholders.

One goal of FairVoice is to reduce the time needed from farmers during data collection and allow a more anonymous way of providing information back to Fairtrade. In our Mobile Survey, we asked a final question:

'Please provide any thoughts or feedback about your experience answering this survey through your mobile phone.' Responses were primarily positive with some useful insights:

'The survey is comprehensive, interactive and simple. More and more engagements will yield more fruits in the long run'

'The survey was good. No rush... enough time for thinking.'

'The survey also gave us freedom to speak our minds on what can be done to better our coffee farmer.'

A further benefit for producers is being able to share bespoke analysis back to small producer organisations from Mobile Survey data that they can use for their own purposes. As FairVoice develops, we continue to look for ways to ensure producer organisations are involved and can use the tool. We have seen in other Community Researching projects that producer organisation leaders have been keen to hear and read the stories shared by the Community Researchers, as it brings fresh perspective and detail to their current data collection.

The Community Researching model was particularly successful in Kenya due to higher mobile literacy rates, something that we are very mindful of in other communities and geographies where this may be more challenging and we need to take steps to mitigate any potential bias in our samples. While smart phone usage in Kenya is high, we found in this project that Community Researchers with more basic phones, and who were in an older demographic, were some of the most engaged. This contrasted with the working assumption that smart phone usage would lead to more engagement. We continue to monitor and learn from other geographies to understand the trends.

While the technology allows remote data collection, there is still a need to validate the self-reported data with direct observations or other information sources. The role of Fairtrade Africa is crucial for validation processes, and the project team has reflected on the best approaches for this to ensure key stakeholders are involved in validating information shared through this tool moving forward. As indicated earlier in the report, while our Mobile Survey avoided some common issues with SMS-based approaches, such as under-representation of women and older people, we encountered differences between our

Mobile Survey results and in-person surveys conducted within the same co-operatives. While these variances were different between topics, with simple questions on experiencing climate change having the least variance and questions around co-operatives the most, future testing and validation is required to ensure that the Mobile Survey is deployed in appropriate contexts and produces accurate and robust results.

The methodology, particularly using the Mobile Survey approach, means that information can be collected at scale, allowing us to hear insights from a breadth of experiences. As we design research with information coming in from more participants, we will need to adapt our data processing to the larger data sets. Expertise from the coffee team at Fairtrade Africa has been critical in providing context and validation for results found in this research, and we will continue to work closely to ensure methodologies are robust.

Fairtrade Africa regularly carries out Needs Assessments with certified Fairtrade producer organisations to plan activities based on producers' priorities, as well as asking producer groups for regular reviews of service and training provision. Going forwards, the Fairtrade Africa team hope to use FairVoice Mobile Surveys to carry out these assessments, meaning they will be able to reach a large group efficiently.

We continue to promote the use of FairVoice within our evidence and insights work at Fairtrade and are exploring new ways to use the tool in the coming years. We will build on our learnings as we go to realise our ambition to create a more direct connection between producers and other actors in the supply chain.

Annex 1: Producer profiles

Kagaari North Farmers' Co-operative Society

FLO ID: 30893

Fairtrade certified since: 2015

Number of members: 1,701

Fairtrade sales (percentage of production in 2022): 32 percent

Introduction

Kagaari North Farmers' Co-operative Society (KNFCS) is located in Kagaari North East Ward, Runyenjes sub-county in Embu County. The society's head office is situated at Kanja market behind the chief's camp off Embu – Meru highway about 7kms from Runyenjes town.

Kagaari North Farmers' Co-operative Society was registered on 29 August 1979 as a marketing co-operative society engaged in marketing members' coffee production as their main activity. It was registered under the Co-operative Act under the Ministry of Co-operative Development and Marketing.

The society aims to produce high quality coffee that competes at the global level considering the crop's good soil conditions and altitude. The ethical values governing the society are openness, honesty, social responsibility and integrity.

Coffee growing and processing

Coffee is grown near homesteads and is planted at low densities ranging from 500 to 1,500 plants per hectare. The main coffee picking period is from October to January. Cherries are delivered to the society's three wet mills where each has its own parchment store. After wet processing and drying, 'parchment' coffee is stored awaiting delivery to the dry mill.

In 2019, the society produced 9,590kg of clean coffee and projected an increase to 15,000kg of clean coffee in 2020.

Benefits of Fairtrade

Access to training on Good Agricultural Practices where farmers have adopted improved varieties that are pest- and disease-resistant. Support to access the Fairtrade market. Better coffee quality and production levels as society implemented the Fairtrade Standards.

The producer organisation is running a revolving fund for workers and farmers. The fund is meant to buy farm inputs for farmers and also improve workers' welfare.

Quality and productivity: Coffee quality and productivity has improved due to farmer training conducted over recent years.

Sustainability: To combat climate change and sustainability challenges the co-operative has established coffee and shade tree nurseries for the farmers to replace aged and diseased coffee bushes with new varieties.

Challenges and solutions

Climate change – continue sensitising members on the importance of shade trees.

Market risks – advise members to produce good quality and quantity of coffee.

Sustainability – continue member training on Good Agricultural Practices.

Ageing factor – handover of coffee bushes to younger members of the community.

Mutira Coffee Growers' Co-operative Society

FLO ID: 27207

Fairtrade certified since: 2012

Number of members: 5,447

Fairtrade sales (percentage of production in 2022): 5 percent

Introduction

Mutira Coffee Growers' Co-operative Society is situated in the Central Province of Kenya in Kirinyaga County. The Society was formed in 1951 to support the processing and marketing of the quality produce from the cool altitudes of local coffee communities.

They promote Good Agricultural Practices to increase the quality and yield of members' coffee so that they can offer the best possible price to the farmer. They have an established processing infrastructure, strong leadership and a consistent membership. This has enabled them to take advantage of partnerships with a variety of organisations and institutions. 20 percent of the members are women.

Coffee growing and processing

The society started with one coffee factory, and has expanded to seven coffee factories situated across the country; Kagumo, Mutitu, Ngorano, Mugaya, Karii, Kiangutu and Kiamutuira. Farmers deliver their coffee cherries to the factory. The fruit is then pulped, fermented, dried and transformed into 'parchment' coffee. The parchment is transported to the milling factory (Central Kenya Coffee Mills) where the papery outer layer is removed, becoming green coffee. The coffee is auctioned in Nairobi; this is supported by the marketing agent (Coffee Management Services). Production in 2019/2020 was 541,667kg of clean coffee and 2020/2021 projection is 583,334kg of clean coffee.

Benefits of Fairtrade

Through democratic participation, members vote on how to invest the Fairtrade Premium at the Annual General Meeting:

Co-operative infrastructure: Fairtrade Premium has been invested in steel drying tables. This equipment makes the coffee processing more efficient, preserves the quality of the coffee, and reduces operational costs for the farmer. The organisation has also invested in a lorry to transport the coffee to market and much-needed engineering works at one of the factories.

Coffee quality: Fairtrade Premium funds training for members on Good Agricultural Practices. An agronomist teaches sustainable farming methods and how to reduce the use of agrochemicals, which protects the health of coffee workers. As a result of this training, farmers have seen their coffee continue to improve in quality and quantity.

Co-operative investments: The society has invested in computers, office equipment and chairs for General Assemblies.

Community investments: The organisation also makes donations to the local school to provide them with stationery and basic food such as maize, beans and cooking fat.

Fairtrade Premium projects:
- 180 metallic drying beds.
- A workers' welfare revolving fund.
- The hiring of and payment to four agronomists who train farmers.
- Issue of 50,000 seedlings to farmers for increased production in 2019.

Challenges and solutions

Huge volumes of coffee received every year and overwhelming processing capacity. As a solution to solve this **challenge**, the society invested in an eco-pulper to enhance efficiency in the pulping process and two coffee solar dryers to support drying.

New Gikaru Farmers' Co-operative Society

FLO ID: 25579

Year established: 2001

Fairtrade certified since: 2011

Number of certified farmers: 4,400

Number of women: 30 percent

Number of young people: 5 percent

Fairtrade sales (percentage of production in 2022): 3 percent

Introduction

New Gikaru Farmers' Co-operative Society is a society of four wet mills, located in Mukurwe-ini sub-county in Nyeri County. Geographically it lies on the slopes of Mt. Kenya. New Gikaru was registered by the commissioner for co-operatives on 4 January 2001 as a marketing co-operative society, under registration number CS/9448, under the republic co-operative societies act. Our objective is to promote the economic interest and general welfare of our members in accordance with the co-operative principles based on the following values: self-help, self-responsibility, democracy, efficiency, effectiveness, solidarity, mutual responsibility, equality and equity. We practice honesty, transparency, openness, accountability, caring for one another and social responsibility in all our activities, with a vision to be the best-managed and leading coffee marketing co-operative society in Kenya. Our mission is to provide effective and efficient services to members to enhance production of quality and quantity of coffee which fetches enough income to eradicate poverty and sustain social-economic growth of members and their families.

An Annual General Meeting is held every year where members perform all their duties as per the by-laws.

Coffee growing and processing

Farmers have an average of 400 trees per farm and grow the common Kenyan varieties of SL28, SL34, BATIAN and RUIRU 11. Our farms have deep red loam volcanic soils and an altitude of 1,400-1,600m above sea level. The main coffee picking period is from September to January.

Our coffee is wet processed, observing all the recommended environmental policies. Sun drying is done on raised tables before delivery of the coffee to the dry mill for secondary processing. The four wet mills form the electoral zones, each electing a representative for the board of directors, ensuring equal distribution of representation as well as compliance with the co-operative society's act that the board is composed of at least five members. Out of the five members, two are democratically elected women and four other women handle top managerial positions.

Benefits of Fairtrade

Factory facilities: Jointly with Fairtrade, we set up solar dryers for drying our coffee after wet processing, which is cost-effective and efficient. Through Fairtrade Premium, we have also constructed metallic drying tables that can now hold our coffee satisfactorily, improving on the quality of our coffee.

Growing, processing and export: Farmers were concerned about security at their wet mill, and so used Fairtrade Premium to build strong gates. Through Fairtrade, we are guided on how to participate and send our coffee samples to coffee contests and exhibitions. This serves as a key marketing tool.

Quality and productivity: Quality and production projects have been implemented through Premium use. Training has been facilitated by Fairtrade on Good Agricultural Practices that have enabled farmers to adopt sustainable farming systems. Issuance of a Kenya Coffee Sustainability Manual by the Fairtrade Alliance for Climate Smart Supply Chains in Africa (FACSCA) project enabled us to set up a library for farmers to study Good Agricultural Practices. We have reached out to farmers at their farm levels through the trainer of trainers (ToT) model, fully facilitated by Fairtrade and enhancing Fairtrade Standards compliance.

Through Fairtrade Premium we have been able to establish a coffee nursery to ensure we supply our farmers with certified seedlings of grafted Ruiru 11 variety, which is more productive and resistant to diseases.

New Gikaru Farmers' Co-operative Society (Cont...)

Community Researchers at New Gikaru Farmers' Co-operative Society take notes during a training session on how to use their mobile phones to share their stories.

Sustainability: This is built through capacity building, Fairtrade training and empowerment programmes. New members must commit to adhering to all current and future Fairtrade Standards, and refresher training for employees, the board of directors and farmers. We have created employment for our young people as ToTs who then train farmers to implement Good Agricultural Practices such as composting and mulching.

Diversification: We have trained farmers on diversification and donated seed capital to set up on-farm alternative income-generating activities. This has reduced farmers' over-reliance on coffee as the only source of income. We are still appealing to more partners to assist in value addition.

Challenges and solutions

Climate change and low production per tree:

Proposed solutions

- Training on Good Agricultural Practices and facilitation for effective implementation.

- Creating awareness on women and youth involvement in coffee.

- Facilitation to plant-resistant varieties.

- Provision of extension services and exchange visits.

- Coffee rejuvenation programmes.

Market access challenge

Proposed solutions:

- Creating forums where small producer organisations can link directly with buyers.

- Diversification to reduce over-reliance on coffee and have income during low seasons.

New Gikaru Farmers' Co-operative Society factory and office space.

Annex 2: Questionnaires

FairVoice Mobile Survey

Demographics

- Age
- Kg of coffee sold to co-operative in the previous 12 months (income proxy)
- Do you own the land on which you grow coffee? (Y/N)
  - Yes: Next Q
  - No: Who owns the land?
    – My spouse
    – Other family members
    – Leased
    – Other
    – If other, please explain

1. **Have you noticed any effects of climate change on your farm (like changes in weather conditions, rainfall, or pests)? Reply 'Yes', 'No' or 'Don't know'**

   - Y: Can you tell us about the effects of climate change you have noticed?
   - N: To next Q
   - Other: Don't understand, loop back

For questions 2-9, how much do you agree with the following, where 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree and 5 = strongly agree

2. **I feel prepared to respond to the effects of climate change on my farm.**
   - 1-2: What makes you feel unprepared to respond to climate change on your farm?
   - 3: Can you explain why you feel neither prepared nor unprepared to respond to climate change on your farm?
   - 4-5: Can you explain why you feel prepared to respond to climate change on your farm?

3. **I can afford to support my household with other funds when coffee harvests are affected by poor weather or pests.**
   - 1-2: Can you tell us more about why you cannot afford to support your household with other funds when coffee harvests are poor?
   - 3: What other funds can you or can you not access when coffee harvests are affected by weather and pests?
   - 4-5: What other funds or income help you support your household when coffee harvests are affected by weather or pests?

4. **Fairtrade has helped me financially support my household when coffee harvests have been affected by poor weather or pests.**
   - 1-2: How has Fairtrade not helped you financially support your household when coffee harvests have been poor?
   - 3: How has Fairtrade helped or not helped you financially support your household when coffee harvests have been poor?
   - 4-5: How has being involved with Fairtrade helped you financially support your household when coffee harvests have been poor?

5. **The Fairtrade bonus payment helps me invest in my farm to prepare for the effects of climate change.**
   - 1-2: Why does the Fairtrade bonus payment not help you invest in your farm to prepare for climate change?
   - 3: Can you tell us more about how the Fairtrade bonus payment has or has not helped you invest in your farm to prepare for climate change?
   - 4-5: How has the Fairtrade bonus payment helped you invest in your farm to prepare for climate change?

6. **My co-operative spends the Fairtrade Premium on projects that help me prepare for the effects of climate change. (Likert)**

   - 1-2: Can you explain how the Fairtrade Premium projects at your co-operative do not help you feel prepared to respond to climate change?

   - 3: Can you tell us more about your co-operative's Fairtrade Premium projects and your preparedness for climate change?

   - 4-5: Can you provide examples of Fairtrade Premium projects which help you feel prepared for climate change?

7. **I use farming practices which help me prepare for the effects of climate change.**

   - 1-2: Can you explain how your farming practices do not help you to prepare for climate change?

   - 3: Can you tell us more about your farming practices and how they do or do not help you prepare for climate change?

   - 4-5: Can you provide examples of the farming practices you use to prepare for climate change?

8. **I have family, friends and community members who support me when coffee harvests are affected by poor weather or pests.**

   - 1-2: Can you explain why you do not have family, friends and community members who can support you when coffee harvests are affected by poor weather or pests?

   - 3: Can you explain why family, friends and community members can or cannot support you when coffee harvests are affected by poor weather or pests?

   - 4-5: Can you describe how your family, friends and community have helped you when coffee harvests have been affected by poor weather or pests?

9. **My co-operative supports me when coffee harvests are affected by poor weather or pests.**

   - 1-2: Can you explain why you feel your co-operative does not provide enough support when coffee harvests are affected by poor weather or pests?

   - 3: Can you tell us more about why your co-operative does or does not provide you with support when coffee harvests are affected by poor weather or pests?

   - 4-5: Can you describe how being a member of your co-operative has helped you when your coffee harvest was affected by poor weather or pests?

10. **How do you think coffee farming will change in the next 10 years?**

FairVoice Community Research Questions

1: What are you and your community doing to prepare for climate change? How do you make decisions on what actions to take? What makes you feel most prepared to adapt to climate change?

2: Has the Fairtrade price you receive for your coffee helped to implement any actions or changes on your farm for adaptation?

3: What role does the co-operative play in supporting you to adapt or sharing information? How does your co-operative spend Fairtrade Premium on projects that help you to adapt?

4: Has being part of Fairtrade supported you to increase biodiversity on your farm? What actions have you taken?

4b: What improvements does this bring to your coffee production? How does Fairtrade support you with these diversifications (is it through training, or price, or a project)?

5: How do you view the future of coffee farming considering the challenge of climate change? What do you feel the future holds for you?

6: Open round for the sharing of more detailed stories on the topic for those interested

Notes and references

[i] While the question asked during the survey specified 'Fairtrade coffee', it should be noted that farmers can find it difficult to parse the different prices they receive for coffee, and so this value can be interpreted as the farmgate they receive for all of their coffee sales, including those sold on Fairtrade terms.

[ii] Magrach, A., & Ghazoul, J. (2015). Climate and pest-driven geographic shifts in global coffee production: Implications for forest cover, biodiversity and carbon storage. PloS one, 10(7), e0133071

[iii] RCP4.5 is a 'Representative Concentration Pathway', or scenario defined by the UNFCCC that projects concentrations of greenhouse gases in the atmosphere from human activity. These pathways are used to understand how different concentrations of greenhouse gases affect the earth's climate system and to project changes in temperature, rainfall, droughts, sea level rise and other effects. For a detailed explanation of RCP4.5 and other scenarios, see: IPCC (2023). Synthesis report, AR5, 'Future Changes' . Webpage: Topic 2: Future changes, risks and impacts – IPCC

[iv] Malek, Z., Verburg, P. H., Parra Paitan, C., Feurer, M., Jurt, C., Fromm, I., Kuonen, L., & Marchesi, S. (2021). Fairtrade and climate change: Systematic review, hotspot analysis and survey

[v] Jaramillo, J., Muchugu, E., Vega, F. E., Davis, A., Borgemeister, C., & Chabi-Olaye, A. (2011). Some like it hot: The influence and implications of climate change on coffee berry borer (Hypothenemus hampei) and coffee production in East Africa. PloS one, 6(9), e24528.

[vi] Best Results Associates Ltd (2020). Study on cost of coffee processing in Kenya, accessed from Study on Cost of Coffee Processing in Kenya – Google Drive

[vii] Best Results Associates Ltd (2020). Data and profiles of five coffee growing counties. Accessed from Data & Profiles of Five Coffee Growing Counties – Google Drive

[viii] COSA, n.d. Resilience Indicators | COSA | Committee on Sustainability Assessment (thecosa.org)

[ix] Charmaz, K. (2006). Constructing grounded theory: A practical guide through qualitative analysis. Sage.

[x] Brown, K., & Westaway, E. (2011). Agency, capacity, and resilience to environmental change: Lessons from human development, well-being, and disasters. Annual review of environment and resources, pages 36, 321-342.

[xi] Friedman, R., Hirons, M. A., & Boyd, E. (2019). Vulnerability of Ghanaian women cocoa farmers to climate change: A typology. Climate and Development, pages 11(5), 446-458.

[xii] The World Bank, International Telecommunication Union (ITU) World Telecommunication/ICT Indicators Database (2021). Mobile Cellular Subscriptions per 100 people – Kenya. Accessed from Mobile cellular subscriptions (per 100 people) – Kenya | Data (worldbank.org)

[xiii] Lau, C. Q., Cronberg, A., Marks, L., & Amaya, A. (2019). In search of the optimal mode for mobile phone surveys in developing countries. A comparison of IVR, SMS, and CATI in Nigeria. In Survey Research Methods (Vol. 13, No. 3, pp. 305-318).

[xiv] Fairtrade International, n.d. Coffee Product Standard for Small-Scale Producer Organisations. SPO coffee – (fairtrade.net)

[xv] Gallopín GC. 2006. Linkages between vulnerability, resilience, and adaptive capacity. Global Environmental Change 16:293–303

Community Researchers at New Gikaru Farmers' Co-operative Society display their certificates after two days of training on Community Researching.

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,
Education and Research EAER
State Secretariat for Economic Affairs SECO

FAIRTRADE
AFRICA

FAIRTRADE
FOUNDATION