

# Introductory Session: Training on Climate Change Adaptation in the Tea Sector



## Authors

Kathleen Schepp

Independent Consultant for  
Climate Change and Development

[kathleen.schepp@googlemail.com](mailto:kathleen.schepp@googlemail.com)

Kerstin Linne

Independent Consultant at  
Green Line Consulting

[kers.linne@gmail.com](mailto:kern.linne@gmail.com)



Green Line Consulting  
*...for sustainable development*

## Contact

Cafédirect Producers' Foundation

Kenny Ewan

[kewan@cafedirect.co.uk](mailto:kewan@cafedirect.co.uk)



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## Introduction

Tea production depends on stable climatic conditions. Climate change is threatening these stable climatic conditions and especially smallholder farmers already perceive adverse effects of these changes. Climate change impacts on tea production range from scorching to changes in attacks of pests and diseases and slower growth of the tea plant.

This manual is designed for **technical extension staff or promoter farmers of tea producer organisations**. Four theoretical and two practical exercises are presented to support the trainer **in introducing the concept of climate change and climate change adaptation in the tea sector** to farmers or other lead farmers. The training is designed for **half a day**.

The manual leads the trainer through the session step by step and **additional didactic materials** that are provided in form of power point presentation slides are attached to it. The slides can either be presented in form of a power point presentation or they can be printed and laminated to be better deployable in the field.

We wish you a successful training!

Kind regards,

*Kenny Ewan*

Cafédirect Producers' Foundation |

*Kerstin Linne*

Independent Consultant |

*Kathleen Schepp*

Independent Consultant

## 1. Background

The Cafédirect Producers' Foundation (CPF) is implementing a two-year project (06/2010 – 05/2012) to enhance the capacity of smallholder tea producers to better adapt to climate change: the Adap2T project. Adap2T is funded by Comic Relief and works with 6 smallholder tea partners in Kenya and Uganda. It aims to enhance the capacity of smallholder tea farmers to develop and implement climate change adaptation strategies.

In a first step Adap2T carried out a training of trainers workshop to build capacities on climate change issues in each of the tea organizations. The trained staff then carried out participatory analyses on climate risks and vulnerabilities and based on their results each pilot group together with the support of international consultants developed site-specific adaptation strategies. Implementation of these strategies started in January 2012 and during a stakeholder workshop in Uganda in March 2012 important collaboration partners for further implementing the adaptation strategies could be won.

To build even more capacities in the tea communities the Adap2T project decided to develop a short introductory session on the climate change phenomenon, its impacts on tea and possible adaptation options.

## 2. Concept of the training session



Duration:	3 to 4 hours
Participants:	20 to 30 tea producers; ensure a diverse group (young, old, men, women)
Methodology:	<ul style="list-style-type: none"> <li>• 4 theoretical input sessions at a leaf collection centre</li> <li>• Field visit where optionally demonstration units of 2 selected adaptation measures can be visited or where these can be built</li> </ul>
Outcome:	<ul style="list-style-type: none"> <li>• The participants know about and understand the climate change phenomenon and its impact on tea production.</li> <li>• The participants know about climate change adaptation and suitable options in the tea sector.</li> <li>• The participants recognize climate change impacts in their tea fields. They know how to implement 1 or 2 adaptation options.</li> <li>• By setting up two demonstration plots addressing pressing climate change challenges in the area the producers are trained on how to implement these adaptation options.</li> </ul>

### 3. Theoretical session 1: Perceptions of climate change

Duration:	15 minutes
Objective:	To start the session with an open discussion on climate change issues and to learn about perceptions of local changes and impacts of these changes
Methodology:	Open discussion facilitated by the trainer
Steps:	<ul style="list-style-type: none"> <li>• Ask the participants: “Do you perceive any changes in our local climate? Thinking back: have you noticed changes in rains or in temperature? What do you know about climate change?”</li> <li>• Allow for open discussion between the participants, to foster further discussion you can ask: “Has anyone else noticed the same? Or something different?”</li> <li>• Most likely the participants will name <u>climate stimuli</u> (also referred to as climate risks by many producers), i.e. changes in climate such as increasing temperatures, prolonged droughts or changes in rainfall patterns and <u>impacts of these climate stimuli</u> such as increasing pest and disease incidents, water shortage or slower growth rates. If possible note down the answers of the producers on a blackboard or on flip chart paper.</li> <li>• Cluster the answers of the producers under two headings: climate stimuli and impacts. If you have written down the answers on flip chart paper you can use two different coloured markers to show which heading each answer belongs to. If you have used a blackboard you can circle all answers that reflect climate stimuli. If you do not have an option to write down the answers you can explain in plenary that we have to differentiate between climate</li> </ul>

stimuli and impacts. You can give examples and use the answers given by the participants.

#### 4. Theoretical session 2: The climate change phenomenon

Duration:	30 minutes
Objective:	To understand the climate change phenomenon and how it impacts on tea production
Methodology:	Input by the trainer and open discussion
Input:	<p>Guiding questions:</p> <ul style="list-style-type: none"> <li>• What is climate change?</li> <li>• How does climate change impact on tea?</li> </ul> <p>The trainer explains the concept of climate change and its impacts on tea production using the didactic material provided together with this manual. Important terms such as “greenhouse effect” are explained. The trainer uses the pictorial didactic materials to visualize complex issues. While the trainer explains about climate change and its impacts on tea, the participants can ask questions for clarification. Active participation can be facilitated by asking questions such as: “Do we all understand how the climate change phenomenon works? Do you also notice that increasing temperatures slow down the photosynthesis of the tea bush and therefore its growth? Do you know of anyone having problems with water erosion in our tea organization?”</p> <p><i>Note: Please revise the didactic material prepared for this input (annex c, slide 4 – 13). It offers simple pictorial overviews for a better understanding among the participants as well as more information in text form for the trainer.</i></p>

#### 5. Theoretical session 3: Climate change vulnerability

Duration:	15 minutes
Objective:	To understand that we are affected by climate change because we or our tea field are vulnerable to climate stimuli
Methodology:	Open discussion facilitated by the trainer
Input:	<p>Guiding questions:</p> <ul style="list-style-type: none"> <li>• Why are we negatively affected by climate stimuli?</li> <li>• What is climate change vulnerability?</li> </ul> <p>Once again have a look at the climate stimuli and impacts you identified in theoretical session 1 “Perception of climate change”. Select one of the climate stimuli and one of the impacts that were</p>

	<p>mentioned by farmers, e.g. “<i>prolonged drought periods</i>” (climate stimuli), e.g. “<i>soil erosion</i>” (impact) and ask them: “Why do you think that prolonged drought periods are causing soil erosion?”</p> <p>Farmers may answer that soils erode due to less water and humidity in the soils. Ask them: “What can we do to conserve the soils from drying out and eroding?”</p> <p>Motivate the farmers to think about soil conservation measures and name them, e.g. “<i>planting kikuyu grass as soil stabilizer in tea fields</i>”, “<i>leaving tea pruning in situ</i>”, etc. Ask them: “Do you apply such soil conservation measures?”</p> <p>If the answer is “no”, explain them, that this is one of the main reasons why soils are affected by heat waves and prolonged drought periods in form of erosion. Explain them further that inappropriate agricultural practices such as not applying soil conservation techniques make tea farms vulnerable to climate change. This is what we call “<b>vulnerability</b>”.</p> <p><i>Note: For more examples of “vulnerabilities” see annex c, slides 18 – 19.</i></p>
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## 6. Theoretical session 4: Climate change adaptation

Duration:	30 minutes
Objective:	To understand how we can manage climate change impacts on the tea farm in order to adapt to changing climatic conditions.
Methodology:	Input by the trainer and open discussion
Input:	<p>Guiding questions:</p> <ul style="list-style-type: none"> <li>• What is climate change adaptation?</li> <li>• How can the tea sector adapt to climate change?</li> <li>• What are practical examples for adaptation in the tea sector?</li> </ul> <p>The trainer explains what is meant by climate change adaptation using the didactic material provided together with this manual (<i>annex c, slides 14 – 22</i>). Important concepts such as “<i>reduction of vulnerabilities</i>” or “<i>no regret measures</i>” are explained. The trainer uses the pictorial didactic materials to visualize complex issues. While the trainer explains about climate change adaptation options in tea production, the participants can ask questions for clarification. Asking questions can facilitate active participation, such as: “Do we all understand why we need to adapt to changing climate conditions? Do you also notice that our vulnerability increases the risk of being affected? Do you know of an example for reducing the vulnerability of a tea field?”</p> <p>At the end a practical example where tea producers engaged in</p>

climate change adaptation activities is given: Climate change adaptation at the Kenyan Tea Factory Michimikuru.

*Note: Please revise the didactic material prepared for this input (annex c, slides 14 – 22). It offers simple pictorial overviews for a better understanding among the participants as well as more information in text form for the trainer.*

## 7. Practical implementation session 1:

### Check for climate change evidence and vulnerabilities in the fields

Duration:	45 minutes
Objective:	To demonstrate climate change related effects in the tea field and to understand the reasons why the tea plants and fields are affected by climatic changes or extreme weather events.
Methodology:	Walk through the tea field, open discussion facilitated by the trainer
Input:	<p><b>Guiding questions:</b></p> <ul style="list-style-type: none"> <li>• What evidence of climate change can be found in the tea field?</li> <li>• Which climate vulnerabilities can we see?</li> </ul> <p>During the theoretical sessions the impacts of climate change in general and on the tea production in particular have been discussed. The trainer asks the farmers “Which impacts have been mentioned?” and lets the participants recall some. Finally the trainer summarizes again the potential impacts that climate change (rainfall, drought, wind, temperature) can have on tea plants and tea fields (<i>annex c, slides 12 - 13</i>).</p> <p>In order to start easily with the demonstration of climate change evidences in the field the trainer asks the farmers: “Do you remember extreme rainfalls we had in this region over the past three to five years?”. They should list two or three excessive rainfalls. The trainer asks again: “Have these rainfalls had destructive impacts on our tea fields?”. Farmers should answer that lots of water had come down causing landslides and the loss of tea bushes and soil. Ask them to show the exact position.</p> <p>The trainer asks the farmers: “Do you remember some reasons for being affected by excessive rains, some ‘vulnerabilities’?” They shall recall e.g. “<i>poor soil management</i>” leading to instable soils, leading to landslides and erosion. The farmers should look for evidence such as impacts of destructive rainfall, erosion or landslides. Ask them, if good soil conservation is carried out in the plot. In case of erosion and landslides - it is not. Discuss with them, what is meant by managing soils well, e.g. “<i>planting kikuyu grass in order to stabilize the soil</i>”, “<i>leave pruning in-situ</i>”, “<i>channelling runoff water</i>”, etc.</p>

	<p>Take out the <b><i>climate evidence &amp; vulnerability checklist</i></b> (see slide 24 in the presentation or annex b) and mark the columns for “landslides” and “poor soil management”.</p> <p>Go on with the discussion identifying other reasons for being affected by destructive rainfalls, e.g. “deforestation”. Mark the columns in the checklist respectively.</p> <p>Finally discuss with the farmers “What could be done to avoid these negative impacts?”, “How can we reduce the vulnerabilities?”. Insert the proposed measures in the checklist.</p> <p>Repeat the whole process focussing on the effects of strong winds, changes in rainfall / drought periods and increasing temperatures.</p> <p>Every time the trainer should ask the farmers:</p> <ul style="list-style-type: none"> <li>• Do they remember such events?</li> <li>• Which impacts of these events can they recall?</li> <li>• Do they see some reasons for being affected (vulnerabilities)?</li> <li>• What could be done to avoid being affected?</li> </ul> <p>Insert the answers (climate change evidence, vulnerability, proposed measure) in the <i>climate evidence &amp; vulnerability checklist</i>.</p>
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## 8. Practical implementation session 2: Adaptation Options

Duration:	2 hours
Objective:	To know how to implement selected adaptation options and to show that engaging in climate change adaptation is related to practical work each farmer can get involved in at their own level.
Methodology:	Practical work in the field / close to a homestead
Input:	<p>The authors propose to split the participants into two groups and to implement two adaptation options:</p> <ul style="list-style-type: none"> <li>• <b><i>Multi-storey gardens</i></b>: Tea is usually produced in monocultures and therefore tea producers are highly vulnerable to drought and resulting food shortages. Setting up multi-storey gardens at the homestead does not take up much space nor does it involve a lot of financial resources. Therefore it is an easy and effective adaptation option to reduce tea producer families’ vulnerability to drought and resulting food shortage.</li> <li>• <b><i>Controlling surface runoff</i></b>: In many tea regions in Kenya and Uganda strong rainfall and floods have become more and more of a problem. Resulting erosion and landslides are negatively impacting on their tea production. Controlling surface runoff is one effective adaptation option of reducing these adverse effects.</li> </ul> <p>The trainer can chose to implement both options with the</p>

participants in parallel or to implement just one option and show a demonstration plot of the other, which was formerly prepared. The controlling of surface runoff is quite labour and time intensive and requires good knowledge of local conditions. It may therefore prove beneficial to inquire where this conservation measure is already implemented and to use it as demonstration plot. In this case the participants would build the multi-storey garden and the demonstration plot could then be visited explaining how this measure works and why it is important (see didactic material). If there is no-one in the tea organization who is using barriers to channel surface runoff, it may be discussed with the management to set up a demonstration plot on this measure at factory level.

The multi-storey garden can also be set-up at factory level and serve as demonstration plot to avoid jealousy amongst participants.

*Note: Please revise the didactic material prepared for this activity (annex c, slides 25 – 30). It offers simple pictorial overviews for a better understanding among the participants as well as more information in text form for the trainer.*