

Position Paper on Climate Change

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Introduction

Increasing amounts of greenhouse gases in our atmosphere are bringing about changes in our global climate as well as in local microclimates. Global agriculture is threatened by this phenomenon as the agricultural sector heavily depends on stable climatic and environmental conditions. Changes in rainfall patterns and volumes as well as changes in temperatures in many cases lead to adverse effects on agricultural crops. Taking coffee as an example, monitored impacts of changes in precipitation are, for example, disrupted flowering cycles and prolonged drying periods. Ultimately, this results in reduced yield quantity and quality. Already pressing challenges, such as degraded soils or limited water resources, are predicted to intensify by climate change impacts adding further stress on the agricultural sector.

But not only is climate change impacting on agriculture. Vice versa, agriculture also contributes to climate change. Through the application of chemical fertilizers or slash-and-burn practices, greenhouse gases are released into the atmosphere. According to the Intergovernmental Panel on Climate Change, agriculture contributes around 13% of global emissions. Taking into account emissions from land use changes and forestry, the sector accounts for up to one third of total emissions worldwide.

Therefore, the sector is not only hit by climate change, but also offers opportunities to counter climate change.

Current UTZ Certified Climate Relevant Activities

There are two main responses to climate change. One is adaptation, which aims to reduce negative impacts caused by changes in climate. The other is mitigation, which aims to reduce climate change as such. Looking at the agricultural sector adaptation is mainly done by strengthening the production systems to be more resilient against changes in rainfalls and temperature and where possible against extreme weather events. To mitigate climate change, the agricultural sector can contribute in two ways:

- Via reducing greenhouse gas emissions caused in the sector, i.e. emitting less, for example, per volume of product or per unit of land.
- Via removing greenhouse gas emissions from the atmosphere and storing them in ecosystem components such as trees, plants or soils, also known as greenhouse gas sequestration.



Current UTZ Certified Climate Relevant Activities: Impacts of the Codes of Conduct

The UTZ Certified Codes of Conduct, although crop-specific, all include aspects that foster and support adaptation as well as mitigation. Examples of where climate change challenges are addressed in the Codes of Conduct and how they contribute to effectively respond to these challenges include the following:

Where climate change is addressed	Relation to an effective response to climate change	
	Adaptation	Mitigation
Soil Management	Assessing and conserving soil fertility and securing a good soil texture supports climate change adaptation by increasing the soil's resilience against changes in precipitation and temperature.	On a more aggregated level conserving and improving soil fertility, delivers the base for sustainable yields. This can ultimately reduce the pressure to expand agricultural boundaries by making new land arable. Such land use changes are releasing large amounts of greenhouse gases.
Fertilizer Use	Through securing good soil texture and fertility the soil will be better prepared to cope with small temperature changes and, for example, prolonged drought periods.	In case of reducing the (relative or absolute) use of chemical fertilizers, less greenhouse gas emissions will be caused in the production of fertilizers as well as in the application. In some cases adequate fertilizer application may lead to increased amounts of chemical fertilizers applied. However, increasing productivity, the emissions per unit of product will be reduced. Suitable record keeping can furthermore support the monitoring of emissions.
Integrated Pest Management & Crop Protection		Appropriate application of chemical pesticides supports climate change mitigation, if resulting in a reduction of total chemical pesticides applied. Keeping records of applied pesticide

		amounts, types and way of application, can support the monitoring of greenhouse gas emissions on the farm.
Water Management & Irrigation	<p>Protecting water streams and bodies in agricultural production zones is very important. Especially as in many areas decreasing amounts of rainfall are predicted. Conserving riparian areas and avoiding water pollution through agrochemicals support climate change adaptation.</p> <p>By looking into adequate use of irrigation water, the Codes support climate change adaptation. Water availability is already changing throughout the year, therefore careful handling of water resources is crucial.</p>	
Post-harvest Product Handling (coffee)	<p>Re-using coffee by-products supports adaptation, for instance, by using mulch, which retains moisture in the soil.</p> <p>Furthermore, the Code asks for wastewater treatment in coffee wet processing. This contributes to climate change adaptation by minimizing contamination of water streams and sources, no or less additional human induced stress on available water resources is achieved.</p>	<p>Re-using coffee by-products such as pulp, hull, husk and parchment as fertilizer, mulch or source of energy supports climate change mitigation, if resulting in reduced chemical fertilizer application or reduced deforestation, for example, for household cooking.</p> <p>Furthermore, the Code asks for wastewater treatment in coffee wet processing. This contributes to climate change mitigation as wastewater emits methane if not treated.</p>
Post-harvest Product Handling (cocoa)		Good on-farm drying of cocoa avoids after-drying later in the supply chain, which usually uses fossil fuels. Therefore it supports climate change mitigation.



<p>Post-harvest Product Handling (tea)</p>	<p>Tea drying requires a lot of energy, which is usually generated by burning biomass. The UTZ tea Code ensures that no natural forests are deforested to obtain the necessary wood. It thereby contributes to adaptation as it preserves natural forest cover and supports the conservation of local biodiversity.</p>	
<p>Natural Resources & Biodiversity</p>	<p>Planned forest management and product diversification are adaptive practices. Maintaining or increasing forest cover in and around production areas provides organic matter for composting, supports water infiltration in soils and regulates local temperatures and partially rainfall patterns. Producing more than just one crop can support food security and potentially leads to a diversification of income sources, which may hedge losses in yield quality and quantity caused by the impacts of climate change.</p>	<p>At the same time shading practices and reforestation mitigate climate change by removing greenhouse gases from the atmosphere and storing them in biomass. Limiting deforestation reduces emissions.</p>
<p>Energy Sources and Use</p>		<p>Looking into energy efficiency, renewable energy and record keeping contribute to climate change mitigation by reducing emissions and providing data for monitoring these reductions.</p>



Current UTZ Certified Climate Relevant Activities: Data Collection for Carbon Footprinting

UTZ Certified is and has been involved in several pilot projects around climate change. One of these initiatives was a joint project with Solidaridad where relevant emissions and sequestration data was collected on UTZ Certified cocoa and coffee farms in Ghana and Kenya. The goal of this project was to understand on-farm emissions in cocoa and coffee and to test feasibility of collecting adequate data at smallholder level, to ultimately support the calculation of carbon footprints for agricultural products. An excel-based greenhouse gas calculator developed by Unilever, the University of Aberdeen and the Sustainable Food Lab, the Cool Farm Tool¹, was used to process the collected data and to develop emissions scenarios. Some of the required data was already available through the UTZ Certified Internal Control System and some data had to be collected additionally. The field-testing showed that it is feasible to gather the necessary data at smallholder level. However, not all relevant data is easily available and local capacities need to be built to make data collection more accurate and cost-efficient.

Current UTZ Certified Climate Relevant Activities: Energy from Coffee Waste

Another pilot project where UTZ Certified is one of the leading actors is called "Energy from Coffee Waste". Around 81% of the coffee cherry is waste – made up from water, skin, mucilage and pulp. Especially the wastewater imposes a threat to climate as it emits large quantities of methane. In this pilot project, UTZ Certified together with the Fundación Utz Kapeh, Climate Neutral Group BV, Aceres Consultancy and Solidaridad is looking into the opportunity to convert coffee waste into energy through the use of anaerobic treatment systems, bioreactors and -digesters. The project works with six pilot groups throughout Central America and so far has made good progress. Through the reduction in methane emissions a contribution to climate change mitigation can be quantified. The generation of carbon credits is being explored. If this approach is successful, it may present an option to generate extra income for farmers.

¹ More information on the Cool Farm Tool is available at <http://www.coolfarmtool.org/>

Expected Benefits

By further engaging in climate change activities UTZ Certified is looking to generate impacts on different levels:

For the environment:

- Increased resilience against changes in local climatic conditions and increased resilience against extreme weather events through, for example:
 - Enhanced water availability throughout the year
 - Enhanced water infiltration in soils
 - Protected soils
 - Protected plants
 - Trees and bushes serving as wind breaks and regulating local temperatures
 - Less greenhouse gases released into the atmosphere at production level
 - Increase in greenhouse gas stocks on farm-level

For the farmers:

- Increased resilience of farmers' ecosystems
- Improved market access
- Potential access to additional income via value addition to the product
- Strengthened or even increased trade relations

For the private sector:

- Strengthened supply chains
- Available data for carbon footprinting in agricultural supply chains
- Ability to quantify the impact of a company or a product on climate change
- Available communications material on climate change engagement via UTZ Certified

For the consumers:

- Credible and transparent information on climate change activities via UTZ Certified
- Ability to improve one's personal carbon footprint via the consumption of UTZ Certified products



Conclusion

Climate change is certainly not the only challenge in agricultural production. However, it may turn out to be one of the most important ones in certain regions and for certain crops. The application of the UTZ Certified Codes of Conduct is an excellent way to effectively respond to climate change challenges in the agricultural sector. It supports the farmers in strengthening their ecosystems in the face of climate change (adaptation) and at the same time it leads to reduced greenhouse gas emissions and increased carbon stocks on the farms (mitigation). Furthermore there are opportunities to use the existing UTZ Certified structures and procedures such as the Internal Control System to collect relevant emissions and sequestration data.

UTZ Certified sees the future focus of its climate change work in strengthening the Codes of Conduct to be more explicit on climate change aspects already included as well as potential new ones and in supporting data collection to assess greenhouse gas emissions and stocks on the farms. Based on this, farms will be more resilient against changes in the local climate and emission reduction and sequestration potentials can be explored. In addition, emphasis will be put on analysing how to best leverage support and collaboration for innovative pilot initiatives that support UTZ Certified's goals such as the introduction of bio-digesters. However, these activities will not immediately influence the core standards and program.

Climate change is impacting on all actors along agricultural supply chains and requires joint efforts to address resulting challenges. UTZ Certified takes on its share of responsibility and invests in partnerships to increase its positive impact on the many challenges climate change brings to farmers and the agricultural sector.