

BOOSTING SOIL HEALTH AND DIRECT SELLING TO COMBAT CLIMATE CHANGE AND ENSURE FARMERS INCOME DURING THE PANDEMIC

Presenter

Brenkenhagener Gemuesehof Farm – Member of The German Rural Youth Association (Bund der Deutschen Landjugend - BDL)

Description

The climate change effects on farming in the region where “Brenkenhagener Gemuesehof” farm is based have been tremendous in the last couple of years. In 2017 during seeding time, they were facing high rainfalls followed by a drought in spring and summer. These extreme weather events tend to happen more often and cause yield losses.

The COVID-19 pandemic has caused higher fluctuation of prices on agricultural products, as the pandemic has affected the global market. The combined risks of yield losses, due to severe weather events caused by climate change, and the fluctuation of prices have put the farming sector in Germany under high pressure. Especially the meat and milk sector are threatened by low prices, which forces farmers to quit farming.

For Brenkenhagener Gemuesehof farmers, being crop farming the main activity, the best possible way to mitigate the effects of climate change is through improving soil quality. On their farm, farmers used to have a three-year crop rotation. Throughout the last years they have experienced that this three-year crop rotation was vulnerable to external effects such as weather conditions, thus they have changed this crop rotation towards a more diverse one, alternating summer and winter crops. Farmers have also included cover crops in between the main crops. Another part of the farm’s climate friendly practice is the reduced tillage, a practice implemented during the last 5 years, which is also improving soil health. Secondly, through their vegetable production for direct markets, farmers were able to achieve higher prices.

Throughout the pandemic of COVID-19, farmers made leverage of this potential, observing that among the consumers there was a rising awareness on how food is produced: they tried to deliver most of the produce by themselves, so not to rely on transportation companies, choosing nearby processing companies for grains and vegetables.

Within these regional markets, farmers were also able to impart knowledge on climate friendly production towards the population. Their vegetables as well are produced in a climate friendly way: tomatoes are grown in a greenhouse under controlled conditions using drip irrigation. As they are sold in the region, they have not long transportation as most other vegetables have.

Results

The main results of the practices implemented are:

- Secured yields reducing inputs on crops.
- Secured prices on products.

Enriching organic matter in soils has stabilised yields, minimized the risk related to droughts and lead towards a more efficient use of chemical plant protection.



Climate smartness

The set of practices promoted in the project significantly contribute to the three pillars of Climate-Smart Agriculture (CSA), as these are focused on mitigation and adaptation to climate change, as well as crop productivity. Most of the practices promoted in the project have been identified in a global evaluation of CSA carried out by Sova et al., 2018.

The practices related to the improvement of soil quality, such as crop rotation, implementation of cover crops, and minimal tilling, help improving water retention in the soil, generating a greater adaptation of the productive systems to drought events. Likewise, those practices promote the increase of soil organic matter, which contributes to carbon sequestration and greenhouse gas emission reduction.

On the other hand, the use of greenhouses and drip irrigation systems are practices that, in addition to improving the producers' incomes all year long, increase climate adaptation of the agricultural systems. Finally, those practices related to new markets access contribute to the increase of farmers' incomes.

For the optimal implementation of CSA, it is crucial to strengthen climate information flows⁴ to the producers, as well as empowering them as regards the use of climate information in order to ensure better decisions in the future, adjusted to their socioeconomic conditions and environmental conditions.

⁴ It is advisable to use climate information from official institutions. However, in case this information cannot be accessed, it is possible to use global secondary information such as CHIRPS (<https://climateserv.serviglobal.net/>). To transfer agroclimatic information, it is advisable to create spaces such as the Local Technical Agroclimatic Committees (LTACs) (<https://www.sciencedirect.com/science/article/pii/S2212096316300298>) and use methodologies such as PICSA (<https://climateserv.serviglobal.net/>).