



**BUILDING RESPONSIBLE
GLOBAL VALUE CHAINS
FOR SUSTAINABLE
TROPICAL FRUITS**

Technical webinar series on avocado and pineapple value chains

Webinar #7: Adapting to climate change – what does this mean for the pineapple and avocado industry?

Summary report

Wednesday 22 June 2022, 16.30-18.00 Rome (UTC+2), on Zoom.

Background

This webinar was the seventh event in a series of technical webinars being organized by FAO's [Responsible Fruits project](#) in response to the priorities and interests of participants from the private sector. The webinars provide an opportunity for peer learning on precompetitive issues and the identification and sharing of good practices. To facilitate open discussion, there is no webinar recording and the event's report follows the Chatham House Rule of not identifying individual speakers, except for the industry speakers identified in the agenda who have consented to share information in advance.

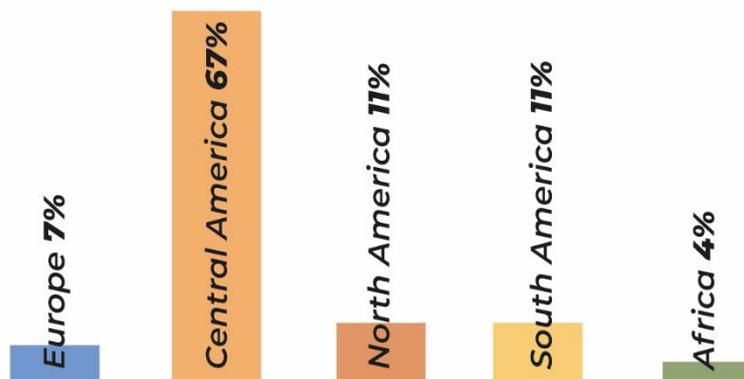
Participation

Twenty-seven participants joined the webinar, representing producers and their organizations, packers, processors, exporters/importers and distributors. These included companies and organizations based in Africa, the Americas, and Europe.

Gender



Geographic origins



Industry groupings

production/midstream 37%

associations 37%

Importers/midstream 11%

Vertically integrated 15%

Organizing this event online avoided the greenhouse gas (GHG) emissions that would normally be associated with travel for a face-to-face event. A preliminary estimate using the ICAO Carbon Emissions Calculator¹ indicates that this event saved over 30 000 kg of CO₂ emissions.

Summary

- **Welcome and introduction**

Participants were welcomed to the peer learning webinar. The event's agenda is presented in Annex 1. All presentation slides are available by sending a request to Responsible-Fruits@fao.org.

Climate change adaptation is the process of adjusting to actual or expected changes in the climate and its effects. The tropical fruit sector is particularly at risk of rising temperatures, more frequent and more intense extreme weather events and associated challenges such as water stress and plant diseases. Businesses and farmers in the tropical fruit sector can adapt to climate change by introducing practices to help them cope with these effects (e.g., drought-resistant varieties, irrigation technologies, integrated pest management and weather insurance among others).

At this webinar, FAO, producer organizations and companies from the avocado and pineapple sectors discussed their experiences and approaches to adapting to climate change impacts.

The webinar wrapped up with an introduction of the Responsible Tropical Fruit project's upcoming work to develop a technical guide on climate change adaptation. Participants were invited to provide input into the design of this guide to ensure it meets their needs.

- **Session 1: Adapting to climate change – what does this mean for the pineapple and avocado industry?** - **Elisa de Stefano**, Environmental management and Climate Change Adaptation Consultant and **Neha Rai**, Climate Change and Private Sector Specialist, FAO

The two speakers provided an overview of FAO's current insights on climate change, its impact on fruit value chains, and opportunities to address these challenges in specific contexts.

¹ See <https://www.icao.int/environmental-protection/Carbonoffset/Pages/default.aspx>

As climate change increases, it will bring with it more risk, both in intensity and in variety. In agri-food systems this means changing seasonal patterns, higher or lower humidity, increasing pests and diseases, pressure on water resources, lower flowering or fruit setting, and more. These changes will be felt by different actors in different ways along their value chain.

The speakers noted that much of the current focus is on adapting to current climate risks, but highlighted the importance of identifying and responding to future risks (e.g. the impact of long dry seasons) now. As examples of where the avocado industry could innovate and adapt to climate change, the speakers highlighted climate information systems, water stewardship, climate resistant plant varieties, improving post-harvest and processing practices, production diversification, pest and disease management, and various capacity development work targeted to specific value chain actors. They concluded by highlighting critical gaps in adapting to climate change: climate risk assessment; focus on current climate risk analysis but not on forecasting future risk; building resilience of farmers; and weak climate risk reporting.

Further details on the presented findings can be found in the speaker's slides.

- Session 2: **Perspectives from pineapple and avocado companies**
 - **Yoriely Villalobos**, Business Manager, PROBIO, Costa Rica
 - **Juan Felipe Zuluaga**, General Manager, Zumen Kapital, Colombia

In this session, two industry panelists, one from each value chain, reflected on the following questions:

- What changes have you noticed in terms of climate in the past five to ten years in your production area?
- What impact has this had on your production and trade of avocado/pineapple?

From Costa Rica, the panelist reported:

- Current climate effects include increased precipitation and higher temperatures, which are leading to more pests and diseases, more undergrowth, more invasive species moving onto the farm, and overall lower productivity.
- Despite these observations, she noted that there is no quantifiable data for farmers on the real impacts on production. Farmers also lack access to needed technology.
- However, in other areas there is improvement, including in soil analysis and addressing deforestation.
- Exports have been impacted as product quality has suffered. For example, higher temperatures lead to burning and other internal issues with the fruit; and problems with pests have affected the stability of the company's supply.

From Colombia, the panelist reported that avocado production is still a new industry, about ten years old. He noted that overall growers are dealing with extremes in climate, quality losses and increasing complexity for production. Some recent observations about climate change effects and impacts on production include:

- Divergent impacts from the El Niño and La Niña phenomenon. Due to La Niña this year rainfall is up 40 percent while the temperature range (maximum and minimum) has become more extreme. As a result, crops are confused, and flowering and fruit maturity is not on a predictable cycle.
- Extra humidity has led to more outbreaks of fungal diseases.
- It is more difficult to harvest crops from an economic perspective as workers need to avoid rainfall.
- New, previously unknown pests are emerging.
- The character and quality of fruit has changed, including different colors and an increase in small-sized fruits.
- It is increasingly difficult to plan or budget, as the seasons are changing all the time and certainty in production cycles is decreasing. This makes adapting to climate change urgent.
- Generally speaking, these climate-related challenges are compounded as all costs have increased due to inflation.

The panelists then discussed:

- What changes in practices have you adopted to overcome these challenges and how effective have they been?

The panelist from Costa Rica observed:

- Awareness raising campaigns have started, but this is challenging as there is no single answer for all farmers. There are many different cultural techniques and approaches to production, resulting in a need to sit down with farmers and quantify the data on activities and impacts.
- Rolling out action plans requires working with producers to identify their own needs, which may include diversification into other production.
- There is a growing emphasis on looking at soil conservation; microorganism coverage; connecting biological corridors to improve biodiversity; and on identifying tree species that could draw out new pests.
- The growers are collaborating with weather stations in the north of the country.
- Work is going on to identify their “environmental footprint”.
- A new area of concern is how temperature will affect workers.
- Concerns are growing about the impact of climate change on physical infrastructure as well (e.g. roads).
- Ultimately, their response cannot just focus on the crop but must identify an end-to-end approach. There is an urgency to learn what is possible, and at the same time to get one-step ahead.

The panelist from Colombia observed that they are aware of greater climate variability and have to find ways to raise awareness with workers to understand the risks the industry is facing. Action planning is needed to address decisions including:

- Efforts have been ongoing to reduce the amount of fertilizer used per tree but increase the frequency of application. At the same time, efficiencies have been gained in the use of plant protection products, for example with foliar sprays. However, when climate change brings heavy rains, these new developments are not effective.
- Trying different cultivation practices like the elimination of smaller fruit from the tree. Previously 95 percent of the fruit size was suitable for export, but now only 75 percent is suitable. Work is ongoing to address this through pruning, increasing drainage channels around crops, sowing native trees, enhancing stewardship and protection of water resources, etc.

- **Open discussion**

Following the panelists, all participants were encouraged to share their opinions and experiences related to the above questions and other issues related to climate change.

In discussion the participants confirmed and highlighted many points for action raised by the panelists, including:

- Climate change adaption information needs to be relevant to a value chain and to a location/context to be most useful.
- Pest and disease management is a great concern. Interventions noted that it is now essential to continuously monitor pest and diseases and to continue to adapt. Pest lifecycles are shorter leading to more frequent spraying, whereas at the same time it is essential to protect biodiversity and in particular pollinators.
- Companies are striving to reduce the use of agro-chemicals and pesticides; and increase the use of biological controls.
- There is a need to set up weather stations and use them to keep track of changes in the weather.
- Companies report setting up action plans to adapt to changing rainfall patterns.
- Companies report seeking new and improved methods to measure carbon and water footprint with the support of other organizations. Support from FAO could also play a role in this area.

- Opportunity to increase resilience may be identified by working with actors beyond the avocado and pineapple value chains. For example, at least one company reports working with berry producers on infrastructure to mitigate extreme climate events.
- There is an interest in greater investment to expand water filtration on a landscape basis.
- Participants' interventions highlighted the need for training field workers on adaptation strategies in order to succeed.

When asked about changes observed in the post-harvest side of the value chain, panelists added:

- In Costa Rica there have been post-harvest issues due to heavy rainfall, such as higher water content, softer fruit that is harder to transport, shorter shelf-life and mold; but in other seasons there have been different problems due to drought such as sunburn and a more fibrous core. There is a need to assess market acceptance to better understand how to address these issues.
- In Colombia export volumes were down in the 2021-22 season due to very heavy rainfall, smaller sized fruit, and new pests causing fruit damage.

- Session 3: **Introduction to Climate Change Adaptation Technical Guide – Marlo Rankin, FAO**

The speaker explained that climate change adaptation is clearly identified as a priority topic for sustainability through the project's baseline business survey in 2021, webinar discussions, and in the ongoing "topics survey". In response, the project is proposing to use FAO technical expertise on climate change with inputs from industry to develop a guide that aims to:

1. **Provide up-to-date information on recent and predicted climate change effects** in key avocado and pineapple producing and exporting countries and specific geographic zones where these commodities are produced.
2. **Identify risks associated with climate effects** for avocado and pineapple production.
3. **Identify adaptation practices and recommendations** that may help to address these risks.
4. **Share good practices adopted by companies** to address climate-related production risks.
5. **Identify gaps in information, research and technical solutions** needed to strengthen the availability and adoption of adaptation practices.

To ensure the guide will be of use to companies, producer organizations and industry initiatives, and facilitate direct interaction in this work, the speaker made an open invitation for any participating organization to join a working group. Interested parties may contact the project team at: Responsible-Fruits@fao.org and register their interest by 22 July 2022. Once the working group is finalized, participants will be notified of the next steps in developing the guide.

The timetable for the development of the technical guide on climate change adaptation can be found below. Further details of this work can be found in the speaker's slides.

Timeline	Action
May-July 2022	Background research on climate change effects in producing countries to identify key risks to production (ongoing)
June & August 2022	Climate change adaptation webinars (today's event and one for Asia) to validate risks and discuss priorities for companies when addressing climate change
June-August 2022	Interested companies invited to participate in Climate Change Adaptation Working Group (English and Spanish)
August-Sept 2022	Initial working group discussions to present guide outline and define company inputs into the guide (3) – Latin America, Africa, Asia
Sept-Oct	Drafting of good practice examples with companies
Oct-Nov	Write-up of draft chapters
Feb 2023	Webinar to present draft guide key findings to companies
March 2023	Final revisions
April-May 2023	Copy editing and publishing

- **Wrap-up and next steps**

Participants were encouraged to complete the ongoing survey on future webinar and technical guide topics. The survey would be open until 30 June 2022.

FAO noted that the project will continue the peer learning webinar series. In addition to the nearly completed Technical Guide on gap analysis of certification schemes and due diligence, and the forthcoming Technical Guide on climate change adaptation announced today, the project welcomes input on future guide topics.

As always, the project team welcomes suggestions or questions on the project's activities at any time. Please contact us at: Responsible-Fruits@fao.org

Annex 1

Working languages

English and Spanish with simultaneous interpretation.

Agenda

Section title	Speaker/Facilitator
Housekeeping, welcome and introduction (5 min)	Valentina Perez-Mardones , Responsible Tropical Fruits (RTF) Project
Session 1: FAO: Adapting to climate change – what does this mean for the pineapple and avocado industry? (10min)	Elisa de Stefano , Environmental management and Climate Change Adaptation Consultant & Neha Raj , Climate Change and Private Sector Specialist
Q&A (5 min)	Open floor for discussion
Session 2: Sharing of experiences, good practices and lessons learned from the pineapple and avocado industry – panel discussion (35min)	Perspectives from pineapple and avocado companies <ul style="list-style-type: none"> • Yoriely Villalobos, Business Manager, PROBIO, Costa Rica • Juan Felipe Zuluaga, General Manager, Zumen Kapital, Colombia Round 1 Questions (20min): <ol style="list-style-type: none"> 1. What changes have you noticed in terms of climate in the past 5-10 years in your production area? 2. What impact has this had on your production and trade of avocado/pineapple? Round 2 Question (15min): <ol style="list-style-type: none"> 1. What changes in practices have you adopted to overcome these challenges and how effective have they been?
Q&A and discussion (15min)	Open floor for discussion
Session 3: Introduction to Climate Change Adaptation Technical Guide (10 min) <ul style="list-style-type: none"> - Purpose and process - Working group invitation 	Marlo Rankin , RTF Project
Q&A and further discussion (5 min)	Valentina Perez-Mardones , RTF Project
Closing comments (5min)	Michael Riggs , RTF Project

For more information about the project or the webinar series, please contact: Responsible-Fruits@fao.org