STUDY: LIFE CYCLE ASSESSMENT OF CUT ROSES

Response from (the commissioning organization/s) to an independent study comparing environmental impacts of Fairtrade and non-Fairtrade cut roses in the European market

12 February 2019

Fairtrade welcomes this life cycle assessment of cut roses conducted by Treeze which compares the environmental impacts of rose production in Kenya, the Netherlands, and Ecuador. The study reveals important findings that highlight the strong environmental performance of cut roses produced in Kenya and highlight opportunities for further improvement.

INTRODUCTION

Roses are the number one cut flower on the European market. Their market share as a percentage of the total cut flower sales is estimated to be 30-50%, depending on the country involved. The Netherlands, Germany and the United Kingdom together account for about 70% of all imports into the EU.

Although Europe continues to produce significant volumes of cut roses – especially in the Netherlands – the area under cultivation has fallen. Much of the production has shifted to countries in East Africa and in Ecuador. Fairtrade first began certifying flowers in 2001 to address labor rights and environmental challenges in the industry and offer consumers responsibly produced flowers. The majority of Fairtrade flowers originate in Kenya, Ethiopia, Tanzania and Ecuador.

This study was commissioned by Fairtrade International and the Migros-Genossenschafts Bund (MGB) in Switzerland to update the available data on the environmental impacts of cut roses from different origins destined for the Swiss market. The research follows-up on similar studies conducted in 2007 and 2009 that demonstrated a smaller carbon footprint for Kenyan flowers air-freighted to the UK than their Dutch equivalents.

METHODOLOGY

This study was conducted by Treeze, a live-cycle assessment consultancy, and used primary and secondary data to analyze the agricultural production, packaging, and transport to Switzerland, which is comparable to the impacts of shipping to most European Union countries. A total of five production systems were considered, including conventional and Fairtrade roses from Kenya, conventional and ecologically produced roses from Holland, and conventional roses from Ecuador. For Kenya and Holland, the study was based on primary data via a survey and secondary data from previous research. For Ecuador there were no detailed production data available, so most of the data were estimated based on a study from Torrellas, et al. (2012)

and a report from Franze & Ciroth (2016). These data proved unreliable and as a result have not been included in this response.

FAIRTRADE'S RESPONSE TO FINDINGS

We appreciated the new insights into the comparative environmental impacts of flower production. The research demonstrated 5.5 times lower greenhouse gas emissions and 6.5 times lower energy demand for Fairtrade certified cut roses produced and imported from Kenya than their Dutch equivalents. Dutch growers outperformed Kenyan flower farms on efficiency of water usage by 50 percent due to more advanced water recycling systems.

In particular, the results on greenhouse gas emissions and cumulative energy demand were interesting for Fairtrade. We were aware that the flowers grown in Kenya would perform better on these indicators in terms of production (as demonstrated in studies in 2007 and 2009), but the common perception is that the overall environmental impacts of flowers grown in the Netherlands would be lower when factoring in shipping from Kenya. These data show otherwise.

- **Greenhouse gas emissions are 5.5 times lower for roses from Kenya than the Netherlands.** The reason for the considerable difference lies in the use of natural gas to heat greenhouses in the Netherlands, whereas the greatest emissions for roses from Kenya lie in the transport to the EU. Even if we account for the negative impacts from air transport, roses grown in Kenya result in significantly lower emissions due to the year-round moderate temperatures and sunlight, and more consistent rainfall.

  In order to further lower emissions and environmental impact of Fairtrade roses, the researchers suggest that importers could explore carbon offsetting options.

- **The non-renewable energy demand in Kenya is 6.5 times lower than the demand in the Netherlands.** The results of cumulative energy usage showed a similar result due to the environmental advantages of producing flowers in a more favorable climate. The research showed that ecological production methods on a farm in the Netherlands resulted in 35% lower energy demand than a conventional farm, though still significantly higher than flowers produced in Kenya. As the Netherlands moves toward more sustainable forms of energy, the difference may continue to diminish.

- **The water scarcity footprint of roses from the Netherlands is about half as high as that of roses from Kenya.** The water scarcity footprint takes into account the amount of water available and its use in the production of a product. Fresh water is scarcer in Kenya, which results in the potential for a larger footprint. The farms in the Netherlands also employ a closed loop system and the use of rainwater for irrigation. This results in a 50% lower water scarcity footprint for the Netherlands.

Kenyan farms included in this study employ an open-loop system for water, but there are other Fairtrade certified farms that utilize closed-loop systems. The researchers recommended considering guidelines or standards related to closed-loop water systems in order to improve the water scarcity footprint of Fairtrade certified production.

The Fairtrade Standards for Hired Labor operations require certified flower farms to optimize water use and employ sustainable techniques that consider availability and impact on the surrounding communities. While optimal use of water is a basic requirement for Fairtrade certification, producer organizations can improve their sustainable use of water within their first three years as part of the Fairtrade requirement to follow even more rigorous standards over time (also known as development requirements). This helps ensure that companies continue to improve their practices in order to maintain their certification. In the future, Fairtrade should explore new criteria for flowers around the use of closed-loop systems and water recycling.

REFLECTION AND NEXT STEPS

This study yielded positive results and provided constructive feedback for improving the environmental performance of Fairtrade cut roses. Though there are limitations in the data due to the small sample size and the age of some material, we believe the strong results indicate the need for further study to effectively compare the different production methods. The study recommendations provide valuable insight that can inform further development of the Fairtrade Standards and strengthen the environmental performance of Fairtrade certified flowers.