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## THE ENVIRONMENTAL SUSTAINABILITY OF SHORT FOOD SUPPLY CHAIN'S TRANSPORT SYSTEM. WHAT CHALLENGES FOR THE FUTURE?

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### Short Description

This study was carried out in Southern Italy and assess the environmental impact of the transport system adopted in the short food supply chain.

### Main part

Worldwide, the increase in the awareness about the need to protect the environment has been investigated in several forms and constructs, achieving an overall consensus about the need to reduce the anthropic impacts of ordinary activities in both business and everyday life. This work focuses on a particular aspect of the growing green revolution, namely the agri-food transport systems in the Short Food Supply Chain (SFSC). Due to the recent growing demand of foodstuff sold inside alternative networks, like local farmer's markets or direct selling in specific urban areas, scholars showed that also this business model if in general terms could be considered sustainable, it presents anyway some hidden points mainly linked to the transport systems adopted and to the need to make them more environment-friendly.

With this in mind, the aim of the present work was to collect reliable empirical data from a sample of agri-food firms operating in the Sicilian Region and participating in the local farmer's markets. Data were about the transport systems adopted for products delivering, with particular attention on the main input scientifically valid for the calculation of the fuel consumption and emissions assessment (Bektaş et al., 2019; COPERT). Results allowed to quantify at first the effective amount of CO<sub>2</sub> linked to the current transport systems, enriching the extant literature on SFSC with new data about the effective environmental impact of this model, suggesting that the distance factors (km travelled) is just one of the factors to be considered, but together with other relevant ones. A set of managerial implications for SFSC managers have been released, in an attempt to reduce the negative externalities of the transport systems currently adopted. Finally, as the majority of data so collected have the potentiality to be considered for carrying out feasibility studies in the electro-mobility field, respondents were also invited in giving their opinions on the opportunity of introducing e-vehicles, also on a shared-base. This can be seen as an important challenge (Kumar and Kumar, 2020) able to both almost totally avoid CO<sub>2</sub> emissions, typical of carbon-fuelled transport vehicles, and to deal with the actual planning policies aimed at sustainable urban transport system introduction, more and more diffused in the majority of the European cities.

### What is new?

This is one of the first studies which analyse the carbon footprint of road transport in the short food supply chain.

### What is transferable to other cities and regions?

Results offer useful insight to farmers participating in the farmers' markets in order to adopt a greener transport system.

### What are outcomes and conclusions?

Results show how the Short Food Supply Chain, based on the environmental sustainability principles,

contributes to CO2 emissions, highlighting the need to implement more sustainable transport models, able to respond to the needs expressed by the local community.

### **Who are the main target groups?**

Farmers, policymakers and local communities.

### **And what now? - what will change? - what is the relevance for the future?**

The first scientific results about the ongoing Covid-19 pandemic are demonstrating a possible correlation between the severity of the pandemic and the pollution level in the most affected geographical areas. Based on these preliminary data, there is a more pressing need to reinforce measures addressed to mitigate pollution emissions, above all in urban areas. Our findings reinforce the validity of this need, further suggesting to seriously dealing with the pollutant emissions released also by the SFSC transport models. In this sense, we suggest that those barriers listed by interviewed SFSC farmers as regards the adoption of Electric Freight Transports should be more and more object of an in depth study, which involve, in a systematic way, the active participation of all the actors of the e-mobility chain to find concrete solutions to overcome current limits.

The current COVID19 pandemic, together with the growing need for sustainability in all the economic sectors, among which the transport one, will inevitably lead to a major awareness among policy-makers and society overall. In this regard, it is worth to mention that currently, Governments around Europe are in fact reinforcing some of the measures to reduce CO2 emissions at least in urban areas. Then, major concerns which, in turn, should be also addressed to the SFSC transport model. Despite its intrinsic relevant social impact, the diffusion of EFV inside urban areas entails a series of economic costs too high to be currently sustained by farmers alone as well as targeted barriers to be overcome, for this reason, a multi-stakeholders approach is expected.

Assessing the CO2 emissions released during the farmers' daily travels participating in the SFSC could positively affect the awareness of different stakeholders, including consumers, as regards the freight transport models currently adopted and the related impacts on the atmosphere. A more in-depth assessment of this dimension as well as the dissemination of these results will ensure the achievement of more appropriate solutions to overcome actual economic and system barriers.

### **Link to the project**

[enernetmob.interreg-med.eu/](http://enernetmob.interreg-med.eu/)