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ECOLOGICAL ARGUMENTS FOR LOCAL FOOD ENTREPRENEURS

Topic: Entrepreneurship and rural development

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Introduction and aim

•Local food is, in general, regarded as sustainable food, but there is scarce research on its sustainability and environmental impacts compared to mainstream food products.

•The aim of the study was :

- to develop a scientifically solid framework for assessment of ecological sustainability of Finnish local food, and to test its applicability
- to formulate document-based and proved arguments to support local food enterprises in their communication and marketing, and consumers to specify their demands for enhance ecological sustainability of local food.

Materials and methods

•The framework leans on the theory of resilience, an agro-ecological view of sustainable agriculture and the most critical global environmental problems. The framework was partially applied and tested in local food chains from three different regions in Finland (see Figures 1-2):

- Life Cycle Assessment (LCA) for 14 local food products in impacts categories of climate change and eutrophication
- inquire on actions for conservation of biodiversity
- assessment of ecotoxicity of used plant protection products
- mapping of regional potential for local food production.

•Arguments to support entrepreneurs and consumers were developed based on the framework and its testing. Arguments are available at: http://www.utu.fi/fi/yksikot/braheadevelopment/palvelut/osaamisalueet/elintarvikeala/Sivut/lahiruoan-ekologia.aspx

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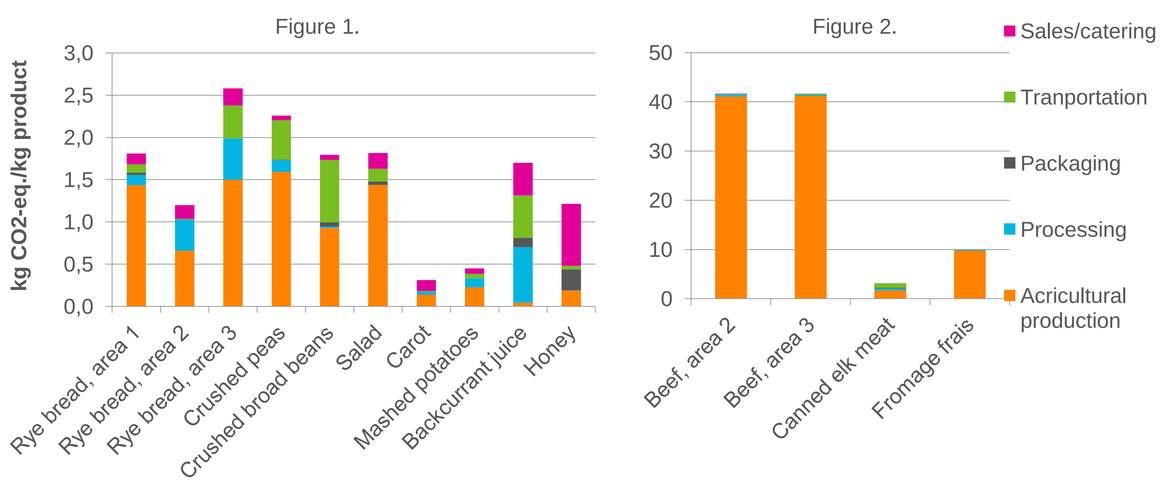
Results and discussion

•Framework for assessment of ecological sustainability consists on several aspects of sustainability: nutritional value of food, use of local resources, climate impact and eutrophication, ecotoxic and toxic impact of used hazardous substances, and impacts on biodiversity and ecosystem services.

•According to the survey, local food farms were more active in conservation of biodiversity and there were more organic farms, where plant protections products were not used, than in Finland in general. However, more studies are needed to compare the use of chemicals and conclude their ecotoxic and toxic impacts in local food chains.

•LCA results for plant based products showed a large variation between regions (rye bread in Figure 1) but not for animal based products (beef in Figure 2). Yield level of crops affected the most to the results, and data only from tree years caused a large sensitivity. The role of transportation (distribution of products) and packaging highlighted compared to mainstream products. The role of transportation (distribution of products) and packaging highlighted in some cases compared to mainstream products.



Figures 1-2. Climate change impacts of plant (left) and animal (right) products in studied local food production chains (kg CO_2-eq./kg product). The local food chains located in three different areas in Finland: in the southern coast (Southern Finland, numbered as 1) to the southern inland region (Häme, numbered as 2) and reaching the central inland region (Central Finland, numbered as 3).

Conclusions

•Arguments on ecological sustainability can be based on various stages of the chain (e.g. agricultural production, processing, transportation). On the other hand, total ecological sustainability of local food product should be based on a holistic consideration of every stages of the chain and coordination of targets and actions.

•Communication and collaboration among stakeholders should be enhanced. It is important to produce knowledge and communicate it within and among local consumer groups.