

User guide to Consumption Compass

**A digital tool for addressing consumption-based
emissions at the local level**

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Introduction

The Consumption Compass is a spreadsheet-based tool that supports planning for climate action to reduce greenhouse gas emissions from consumption. The tool is set up to downscale the Swedish national consumption-based estimates – usually called footprints – to the local and postcode level for all Sweden’s municipalities.

The tool supports municipalities’ strategic work to mitigate climate impacts from consumption at the local level. It also helps people to understand the impacts of consumption and to identify policies and measures to mitigate these impacts. Through the tool’s “compare” function, users can also compare the impacts of consumption in a selected municipality with those in other municipalities.

This document is a user guide for the tool. The methodological principles and the data sources that underpin the tool are described in a [separate document](#). For more information about consumption-based emissions, we refer the user to the Swedish EPA¹ which provides a good overview of the subject.

The tool can be used to:

- view household footprints for more than 110 different consumption categories
- view household footprints down to postcode level
- compare municipalities’ footprints
- prioritize consumption categories according to different criteria related to policy goals
- identify and prioritize consumer actions that could reduce emissions associated with different kinds of consumption, as a basis for developing policy
- visualize household footprints down to the postcode level via an interactive map.

How to use Consumption Compass

The first worksheet, the *Introduction* tab, presents an overview of the tool as well as a time series of Sweden’s consumption-based emissions (CO₂e) from official statistics. Following the introduction, the tool consists of six main tabs:

1. Start
2. Household footprint
3. Municipal comparison
4. Postcode rankings
5. Household profiling
6. Mitigation behaviour identification and prioritization

¹ Swedish EPA ([2021](#)), Konsumtionsbaserade utsläpp av växthusgaser i Sverige och andra länder

The function of each is described below.

Tab 1: Start

On this tab, you select the municipality for which you want consumption-based estimates (CO₂e) to be presented. The worksheet shows a summary of the selected municipality's consumption-based emissions, including per capita emissions. For reference, this sheet also includes a graph that visualizes the latest time series for Sweden's consumption-based emissions.

Tab 2: Household footprint

This worksheet summarizes details about the average footprint of households in the selected municipality for more than 110 different consumption categories. The choice of categories follows the official classification system COICOP, developed by the United Nations Statistics Division,² which is used across the world to classify and analyze individual consumption expenditures incurred by households (and other actors) according to their purpose, such as food, clothing and footwear, housing, electricity, transport, and leisure activities. The full list of COICOP codes applied can be found on this sheet.

To encourage learning and reflection, the sheet also provides comparison of municipalities belonging to the same municipal class,³ and comparison with the Swedish average.

Tab 3: Municipal comparisons

This is similar to the *Household footprint* tab, only on this sheet, the user can select two other municipalities at a time to compare with, at the same level of detail.

Tab 4: Postcode rankings

A comparison between municipalities will reveal that the average footprint of households in each municipality does not differ that much – the tool estimates the Swedish average footprint to be about 6.2 tonnes CO₂ equivalent per capita per year (including international air travel). Within individual municipalities, however, large variations between footprints in different postcodes can be found, ranging between around 3 and 20 tonnes. This kind of analysis can be used to understand what targeted policy measures are needed for specific postcode areas.

At the top of this sheet there is a list of the five highest and five lowest emitting postcodes (CO₂e) in the selected municipality. The same ranking is also given for the main consumption categories. Further down on the sheet, users can view the footprint of all postcodes in the municipality for the main categories of consumption.⁴ The highest and lowest emitting postcodes have been colour-coded to facilitate analysis.

² United Nations (2018). Classification of Individual Consumption According to Purpose (COICOP) 2018. Department of Economic and Social Affairs Statistics Division.

³ Sveriges Kommuner och Regioner (2016), Kommungruppsindelning 2017

⁴ Please note that the standard sort function is disabled.

Tab 5: Household profiling

This worksheet displays the selected municipality's overall per capita footprint, as well as the emissions associated with each major category and subcategory of consumption, in a similar way to the *Household footprint* worksheet (see Tab 2, above). Here, however, additional information is provided about the emissions *intensity* per 100 SEK spent on different consumption categories. This information can be useful for identifying where reducing consumption could be most effective in reducing greenhouse gas emissions.

Typically, for example, if households reduce consumption of one kind of good or service, this will free up income that they are then able to spend on other goods and services. In some cases this could backfire: if spending is shifted to higher-emitting forms of consumption – for example from entertainment to sports equipment – this could lead to higher overall emissions. However, if households are encouraged to reduce consumption of goods and services with a *higher* emissions intensity per SEK, then it is more likely they will shift spending to lower-emitting alternatives. So, all else being, it could make sense to target high emissions-intensity forms of consumption.⁵

This sheet provides a colour-coded indication of 1) which consumption categories for the selected municipality are associated with the highest (red) and lowest (green) per capita emissions; and 2) which consumption categories have the highest and lowest emission intensity.

The sheet also allows the ranking of consumption categories by either per capita emissions or emissions intensity. Option buttons on the left enable users to view rankings across all major categories and subcategories, or to separately rank for subcategories under each major consumption category. Option buttons on the right can be used to rank by either per capita emissions or emissions intensity.

By examining how different types of consumption compare to each other on both metrics – per capita emissions and emission intensity – users can begin to identify important areas to focus on for local mitigation efforts or policy measures. For example, consumption associated with both high per capita emissions and higher emissions intensity could be a good target for efforts that encourage reduced consumption.

Finally, this sheet allows the creation of additional new worksheets that can help users to identify specific *mitigation behaviours* related to different kinds of consumption. Mitigation behaviours are changes in purchasing patterns or lifestyles that could reduce consumption, and/or the emissions associated with consumption, of a particular good or service.

⁵ Please note that the COICOP dataset does not provide data on the emissions intensity of petrol purchased for use in automobiles (*Household fuel use in private vehicles*) or of fuels burned directly in homes for heating purposes (*Household fuel use in the home*). Even if direct emissions such as these are included in the tool, entries for these categories on these worksheets indicate there is no data, and when ranked by intensity, these categories will therefore fall to the bottom of the list. Typically, however, direct use of fossil fuels will have a high emissions intensity and should be considered as such when comparing these categories to others.

To create a new worksheet, users must select a category of consumption in the table (either a major category or subcategory) by clicking on the appropriate cell, and then click the *Create Mitigation Behaviour Prioritization Tab* button at the top of the worksheet. Each new worksheet created in this way is given a name based on the category of consumption selected (if a category is selected twice, users will be prompted to enter a different name to avoid duplication).

Tab 6: Mitigation behaviour worksheets

On these worksheets, each of which are specific to a particular form of consumption selected on the *Household Profiling* worksheet, users can explore different kinds of consumer behaviour change that could reduce footprints. Each newly generated sheet is pre-populated with options for changing purchasing habits or lifestyles in ways that could reduce emissions. However, users can add additional options on the blank lines provided and delete items they do not wish to consider.

New options can either be added to the bottom of the list on each sheet, or they can be inserted within the existing list. To insert a new row, users must select a cell in Column A of the worksheet next to the row they would like inserted, and then click the Insert Row button at the top of the worksheet.

To delete an option, users must select a cell in Column A of the worksheet next to the row they would like deleted, and then click the Delete Row button at the top of the worksheet.

In addition, users can add notes related to specific options by inserting a new row and then selecting the Notes field in column A next to the new row. Selecting the Notes field will tell the worksheet to disregard that row when generating a ranking of options in the table on the right-hand side of the worksheet. A Note can contain any information that users think would be helpful, including more detailed explanations of a behaviour, or explanations for why the behaviour was assigned certain scoring criteria.

Scoring criteria

Each mitigation behaviour worksheet allows the ranking of mitigation behaviour options according to three criteria:

- **The reduction in emissions, per person, that the behaviour change is expected to bring about.** Precise estimates of the magnitude of emission reductions may be difficult to determine for any given behaviour change. Therefore, the worksheet uses a relative qualitative score to rank different options: the potential effect can be rated as *relatively low*, *medium*, or *relatively high* by selecting the appropriate option from a pull-down menu in each cell. Ratings should be chosen based on the expected effect *relative to other options* on the same worksheet.
- **The percentage of people expected to adopt the behaviour within the municipality's population.** This can be entered as a straight numerical percentage, based on

the user's judgement about how extensively a behaviour might be adopted. Options with higher estimated adoption rates will be ranked more highly.

- **The ability of local government to influence the behaviour.** One consideration for prioritizing mitigation behaviours is how much influence municipal governments have in encouraging or inducing these behaviours. This is also a qualitative rating: *relatively low, medium, or relatively high*, chosen based on the user's judgement. Options with higher ratings will – all else equal – be ranked more highly.

Further explanations of these criteria can be found within the tool by clicking on the titles at the top of each column.

It is up to the user to decide whether to use these criteria. Users can choose to ignore certain criteria – or see how rankings would change if they were ignored – by selecting or deselecting the checkboxes at the top of each column.

The purpose of the rankings is to identify behaviours that score relatively highly in terms of the criteria selected. Those that score higher, for example, could be promising options to target with municipal policies or outreach and education campaigns.

Interactive maps

Connected to the tool is also an interactive map function that visualizes the household's footprint down to the postcode level. Like the *Postcode rankings* sheet (see Tab 4, above), the interactive map is meant to demonstrate the variations in footprints across municipality postcodes and to support analysis of which geographical areas the municipality want to provide targeted policy measures for, and for what consumption categories. Comparing footprints with other municipalities is also meant to encourage learning and reflection on what municipalities can learn from each other.



The user selects which county or municipality to view (there is also an option for Sweden as a whole). To the right of each map is a small icon (pictured left). By right-clicking on this icon, a list with consumption categories appears in alphabetical order. Clicking on the consumption category to review displays a visualization of that consumption area on the map. To select a new consumption category to visualize, the user simply clicks on that category in the list.

Please note that the initial consumption category selected is still flagged in the top right corner of the map. However, the map always displays the last selected consumption category. As more categories are selected for review, a list of categories will appear in the top right corner.

The consumption categories that can be visualized in the map are the same as the main categories in the official classification system (COICOP). Note that in the visualizations, the

colour coding is relative: even though the categories have bigger or smaller climate impacts, the colour coding for the range of emissions in each category is the same for all categories. See, for example, Figure 1.

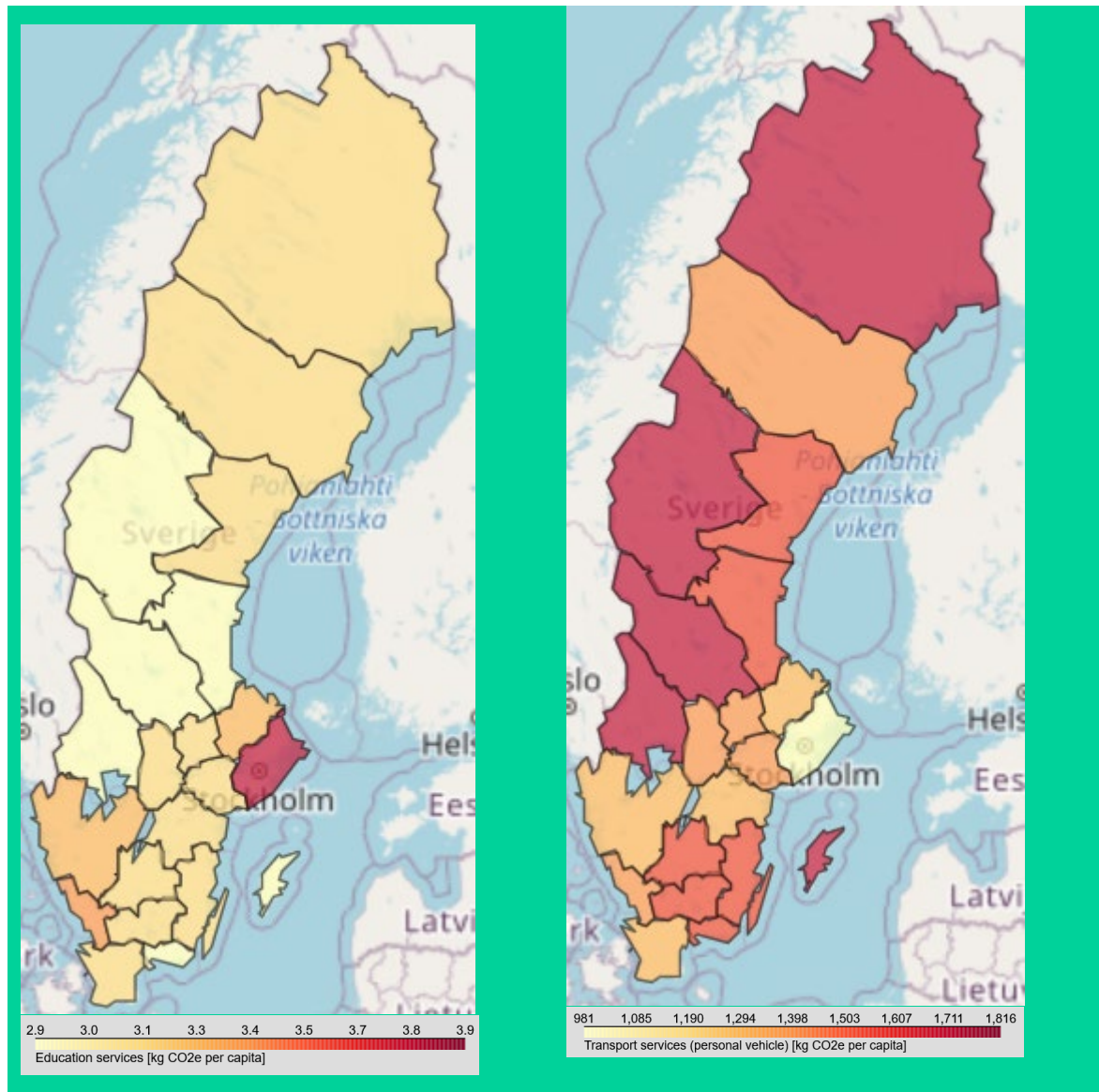


Figure 1. Comparison of the relative scale (kg CO₂e per capita) for the consumption categories *Education* and *Personal vehicles* for Swedish municipalities.

While the category *Education services* has a range of kg CO₂e per capita of between 2.9 and 3.9, the highest end of the scale is red, just as it is for *Transport services (personal vehicle)*, which has a much higher range of between 981 and 1816 kg CO₂e.

Figure 2 demonstrates the relative scale used for each consumption area.

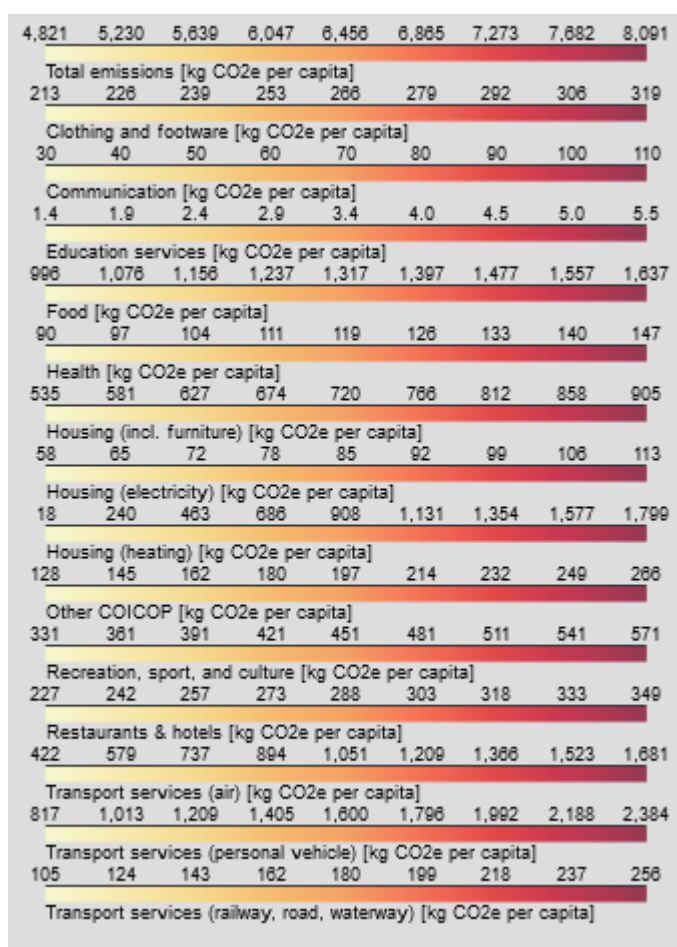


Figure 2. Relative scale (kg CO₂e per capita) used for the different consumption areas in the Interactive maps.

How was Consumption Compass developed?

The tool builds on Stockholm Environment Institute's (SEI) earlier work with its [REAP tool](#), which estimated consumption-based impacts (CO₂e) at the local level for municipalities in the UK and Sweden.

The tool, as well as this user guide, is also inspired by previous work with the Consumption-based Emissions Inventory ([CBEI](#)) Emissions Profiling and Prioritization Tool (CBEI Prioritization Tool). This is a tool that was developed by Stockholm Environment Institute (SEI) under the initiative of the Urban Sustainability Directors Network ([USDN](#)), which has now been adapted to a Swedish context.

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