

Carbon footprint impacted more by socio-economic status than location

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Swiss households have excessively large carbon footprints. However, that footprint depends more on socio-economic status than location—whether the household is in the countryside or the city—because people travel more in the country but consume more in cities.

Swiss households enjoy a high standard of living, but this results in a large carbon footprint. To support policies to reduce [greenhouse gas emissions](#) at the local, regional, national and international levels, a deeper understanding of the consumption and travel habits of Swiss households is vital. Key factors include household composition and income, and whether the households are in the [city](#) or the countryside—even though, in the end, people's lifestyles do not differ greatly from one environment to another.

A team of researchers at EPFL's School of Architecture, Civil and Environmental Engineering (ENAC), led by doctoral assistant Melissa Pang, has been hard at work on this issue. The researchers analyzed data from Switzerland's household budget survey for 2008, 2011 and 2014 and combined them with an environmentally-

extended input-output analysis (EEIOA) to assess households' carbon footprints by measuring their direct and indirect emissions. Their results were published recently in *Environmental Research Communications*.

More consumption in cities

Overall, households in the countryside have larger carbon footprints than those in the city. That is mainly because they travel more and use more energy in their homes (direct emissions). However, urban households have larger carbon footprints than their rural cousins when it comes to food, clothing, cultural activities and air travel (indirect emissions). The researchers found that "although the urban setting seems more climate-friendly if we just look at direct emissions, [socio-economic factors](#) that influence consumption patterns outweigh those positive effects on carbon emissions when we take into account the overall footprint."

The authors of the study also show that a household's composition directly influences its carbon footprint: "A two-person household has the largest per-capita carbon footprint, and it falls as the size of the family grows."

The study shows that Ticino Canton is Switzerland's worst offender in terms of carbon footprints, while households in the densest urban areas, such as Zurich, Bern and Basel, have smaller footprints.

The authors also found that income levels play an important role: "People consume without much thought because they can afford to and enjoy doing it. But we need to consider whether we're overconsuming," says Melissa Pang. "That said, new trends are appearing—the Climate Strike is a good example. There's no need for extreme measures, but every little bit helps." The Swiss population's overall [carbon](#) footprint seems to have

fallen slightly between 2008 and 2014, although that requires confirmation by more in-depth studies.

More information: Melissa Pang et al. Urban carbon footprints: a consumption-based approach for Swiss households, *Environmental Research Communications* (2019). DOI: [10.1088/2515-7620/ab59c5](https://doi.org/10.1088/2515-7620/ab59c5)

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