

## The Challenge

Reducing Greenhouse gas (GHG) emissions associated with food consumption is a particularly important issue given that in 2017 the planet recently has experienced its hottest year. The emissions associated with UK food consumption represent approximately 20% to 30% of the UK's total consumption emissions. One way proposed to reduce those emissions is through a carbon consumption taxes. This study modelled the effects of carbon taxes food choices, GHG emissions and the nutritional quality of the diets of UK households.

## Policy Implication

Taxing carbon intensive food products could reduce GHG emissions, but the result depends on the type of tax. While a plain rate would likely be the simplest to administer, it would not be as effective at emission reduction as a tax linked to carbon consumption. However, a carbon consumption tax is likely to worsen diets in terms of recommended nutrient intake; therefore a compromise between environment and nutrition quality is needed.

## Research

The effect of carbon consumption taxes on domestic food consumption were simulated. Four scenarios were modelled, with taxes on:

1. Beef and veal
2. All meat
3. All animal products
4. All products



## Results

The most efficient policy is to only tax beef and veal, which is estimated to reduce GHG emissions by 13%. Taxation affects the relative prices and generates substitution amongst food products.

Hence, even if fruits and vegetables are not directly taxed, their consumption may still decrease, undermining the UK Government's recommendation of five servings of fruits and vegetables a day.

Any tax levied (even if only on meat) will not improve nutrition despite reducing GHG emissions. Additional analysis found that improving nutrition would require significantly subsidising foods such as vegetables, fruits and cereals.

# Carbon Taxes, Greenhouse Gases & Nutrition



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## About

The Land Economy, Environment and Society (LEES) Research Group is one of the largest groupings of economists and social scientists working in the rural, agricultural and land based sectors in the UK. Our vision is to be recognised as one of the leading centres for agricultural and wider rural economic and social research globally, benefiting the land use sector, the environment and rural communities.

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