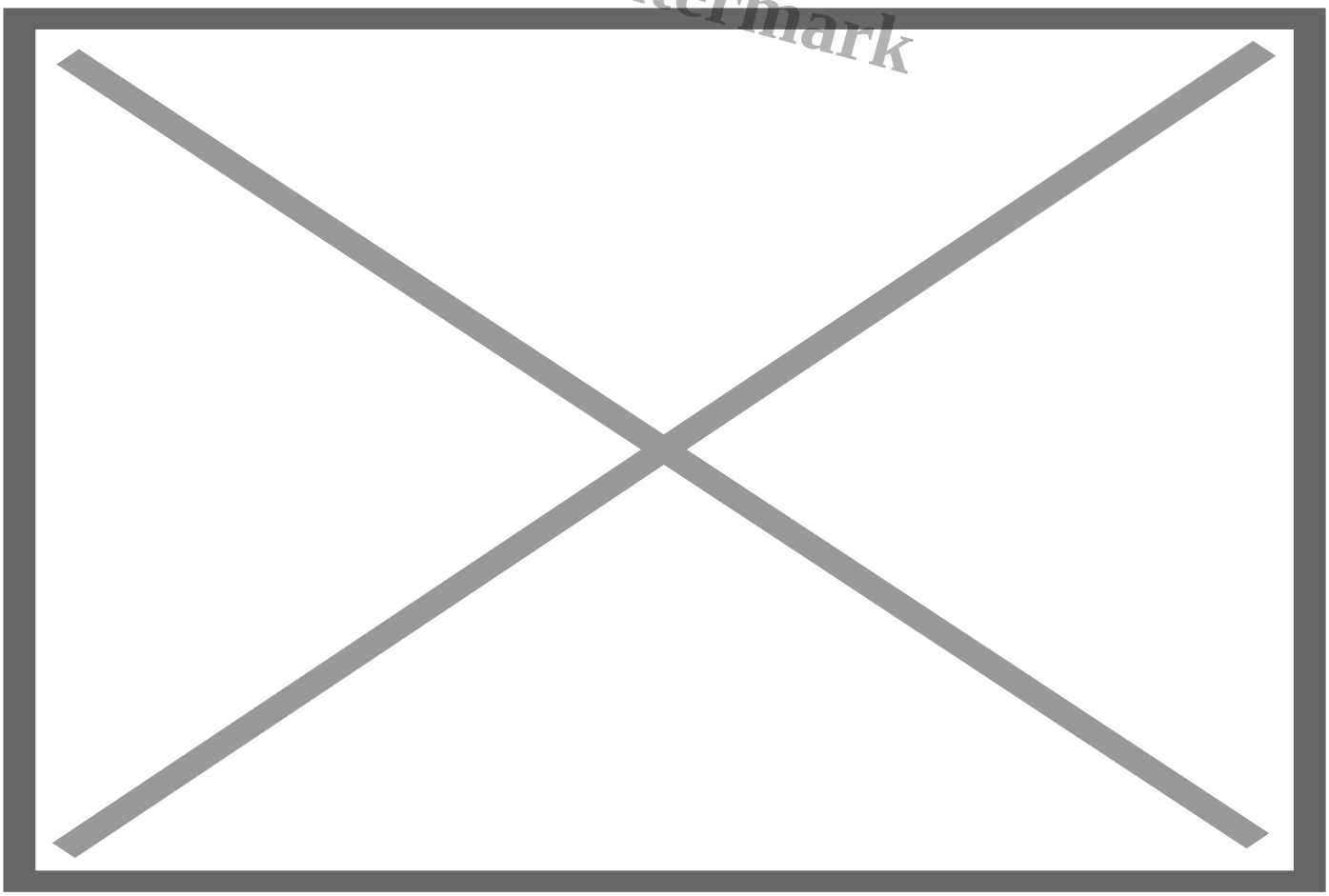
Beyond the bean: Coffeeâ??s footprint vs small-format stimulants

Description



The morning cup of coffee has an impact that most consumers are unaware of. A real impact, in terms of carbon and water. New forms of stimulants are also appearing on the shelves and at the checkout in the UK, from caffeine pouches to concentrated shots, and they raise a legitimate question. The figures associated with a cup of coffee are higher than marketing tends to suggest. So how does coffee actually compare to small-format alternatives, per serving, by the kettle?

The hidden weight of your morning brew

Most of coffeeâ??s environmental cost is paid before the beans leave the farm. On the farm, not in the cup. Between 75% and 91% of the total carbon footprint of a cup is generated at the cultivation and on-farm processing stage, led by fertiliser use, land use change and wet-processing emissions, according to Terrascope and CDP.

Deforestation in the coffee-producing regions of Brazil, Vietnam and Colombia accounts for around two million hectares cleared for coffee plantations between 2001 and 2015. Whilst this area is smaller than that devoted to cattle farming, it nevertheless represents a valuable resource for the communities living in coffee-growing regions. On water consumption, the figures per cup are higher than most consumers imagine.

A growing alternative scene

Small-format stimulants have become noticeably more mainstream over the last few years. Caffeine pouches, concentrated ready-to-drink shots and cold brew on dose are now stocked alongside conventional variety UK retailers. WH Smith recently secured a national listing for one such brand, according to The Grocer. Use is climbing.

The category is still small in absolute terms, amounting to tens of millions of pounds rather than billions. Scale will come later. What matters is what the format does to the footprint per dose when a portion of demand shifts away from brewed cups.

What life-cycle analyses actually show

Available figures point in a consistent direction. One caveat applies: there is no published life-cycle study that makes a head-to-head dose-level comparison between brewed coffee and caffeine pouches, so the differences below are directional rather than exact.

Carbon and water per cup

The headline numbers are useful as a baseline:

- Black coffee: about 0.258 kilograms of carbon dioxide equivalent per cup
- Coffee with milk: about 0.844 kilograms per cup, with dairy carrying most of the difference
- Tea: about 34 litres of virtual water per cup
- Coffee: about 140 litres of virtual water per cup

Same direction, every measure. Most of coffeeâ??s load sits in the bean itself and the dairy that goes with it, not in the brewing.

Mass per dose

Small-format stimulants carry less mass per dose, with a single pouch containing a fraction of a gram of active material against the seven grams of roasted bean that go into a brewed cup. That gap drives lower transport energy, less packaging per serving and a smaller land and water footprint for the same caffeine delivered.

None of this makes one format good and the other bad. The unit of analysis is what matters. Per kilogram of beans is one question. Per dose of caffeine, quite another. Consumer choices live at the dose level.

Coffee isnâ??t the villain â?? but it is resource-heavy

A morning cup of coffee is one of the better small pleasures in modern life, and there is no need to frame it as something to apologise for. The figures describe a resource-intensive product, not failing morals. Coffee is, after all, a tropical crop grown for people other than those who drink it.

Pressure is mounting from the other side too. Rising temperatures and erratic rainfall are projected to shrink the land suitable for coffee growing by 48% to 97% in key regions by 2050.

Taken together, the numbers suggest that complementation can be good, rather than replacement. Someone who keeps the home morning ritual and reaches for a pouch during a long commute is not abandoning coffee but spreading the load. That is a different decision to giving up the cup altogether, and one most readers can make without changing much else about their day.

What the choice means at scale

Around 98 million cups of coffee are drunk across the UK each day, according to the British Coffee Association. A figure that large means small individual choices compound into national-scale outcomes. Change one cup in twenty into a lower-footprint format and the country shifts roughly five million cups a day onto a lighter ledger.

This is not an argument directed at any particular brand or product. The important thing is to understand the true cost per dose across a population. Format matters. The data is now reliable enough for consumers, retailers and policymakers to do these calculations themselves. The result is more interesting than what the marketing suggests. It is worth doing the maths.

By Nathan Spears

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