

The degradation of sustainability of food systems by ultra-processed foods: the 3V rules to counteract it

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We are in search of global indicators and daily levers to improve food system sustainability. Based on recent scientific advances we proposed that drastically decreasing ultra-processed food (UPF) consumption could be one of main levers. Indeed, in the 80's we faced an 'ignored' food transition, from processed foods to UPFs. UPFs were first defined in 2009 as containing at least one industrial (ultra)processed ingredient or a cosmetic additive to mimic, restore and/or exacerbate sensory properties (color, aroma, taste and texture). UPFs are the result of an extreme food artificialisation to reach easy and immediate sensory pleasures. Up today, their excessive consumption has been linked with increased risks of several chronic diseases, notably total cancers and mortality. They represent 71% of packaged foods in French retail stores and 50% of all foods, including fresh bulk foods. In France, adult population daily consumes at least 35-40% of ultra-processed calories. However, UPFs not only are a threat to human health, but more generally to the sustainability of whole food system:

- 1) UPF formulation involves intensive monocultures to yield large quantities of ingredients, resulting in environmental degradation and pollution, loss of biodiversity, as well as drainage and loss of water, energy and other natural resources. The mass production of cheap ingredients is not in favor of small farmers worldwide, UPFs being generally cheaper than local traditional foods;
- 2) Production and consumption also lead to the creation of vast quantities of non-recyclable waste (plastic packaging);
- 3) Low cost animal products in UPFs are based on meats from animals raised in intensive conditions that are rarely respectful of their well-being and basic needs;
- 4) UPFs are formulated and packaged as ready for consumption. UPFs can then be consumed anytime, anywhere even out of home, often while being entertained or working, walking down a street, driving or talking on the phone. It is a socially isolated situation, disguised by advertisements suggesting that such products promote social interaction, which is not the case;
- 5) UPF hyper-standardization makes these foods with stereotypical tastes: they provide an immediate pleasure without risk to the detriment of less standardized traditional or local dishes. As a long-term aspect and together with their globalization, UPFs may modify the perception of traditional food as tasteless, together with potential loss of culture and identity, region, ethnicity and customs linked to the traditional dishes.

To counteract the rapid development of UPF worldwide we propose a very simple and efficient lever: the three golden rules for healthy, ethical and sustainable food systems. They have both scientific and holistic bases. Indeed, all scientific-based evidences show that the protective diet for human health, animal and environment follows the rule of the 3V for "Végétal, Vrai, Varié": Végétal (Plant-based foods): not exceeding 15% daily of animal calories; Vrai (Real food): not exceeding 15% daily of ultra-processed calories; Varié (Varied foods): among real foods eat diversified, if possible organic, local and seasonal. Thus, decreasing UPF consumption has an immediate positive impact on global food system sustainability.