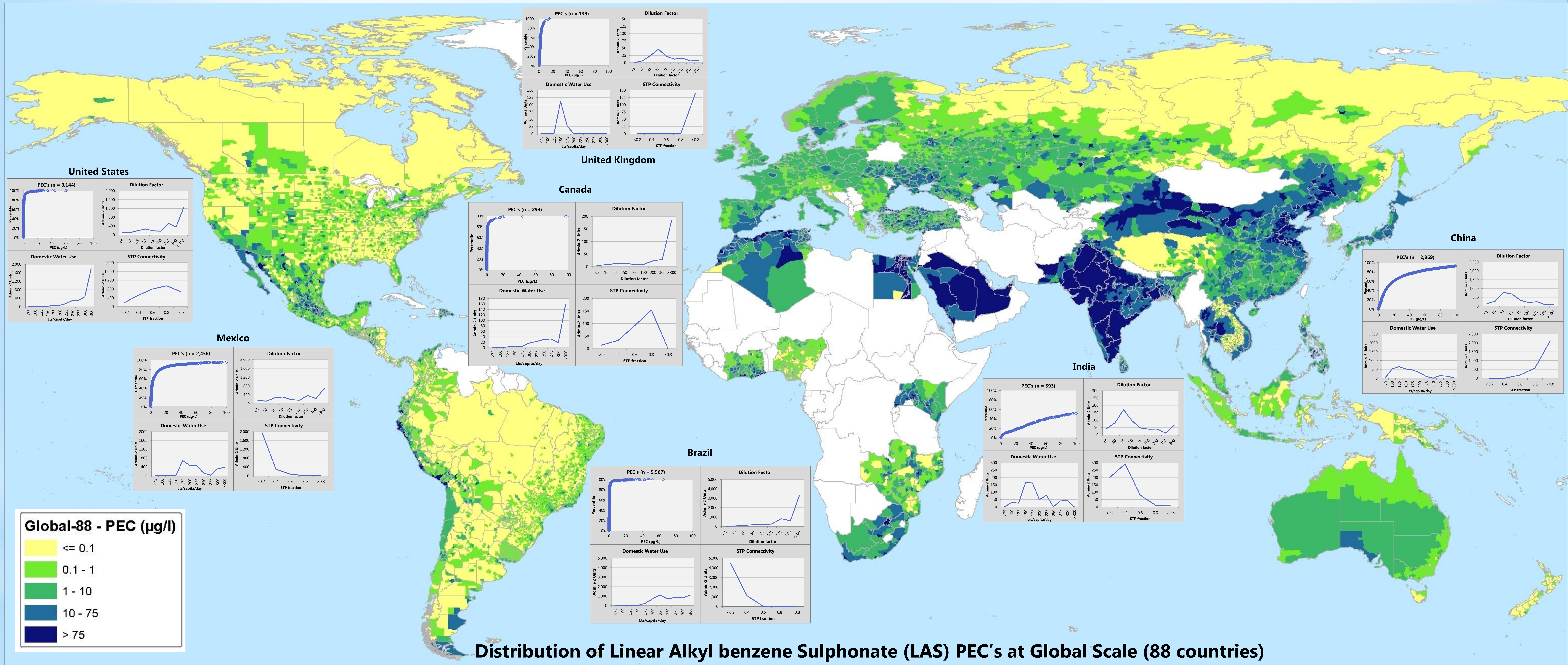


Accounting for regional differences in socioeconomic and environmental variables to enable a global exposure assessment for chemicals used in HPC products

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- Presented here is an initiative to collect spatially explicit data sets from various sources in order to develop a global model to predict in-river concentrations of chemicals used in home and personal care (HPC) products.
- A novel exposure model, the Scenario Assembly Tool (ScenAT), was developed to predict environmental concentrations (PEC's) of chemicals used in HPC products at multiple spatial scales across a country.
- The model incorporates sub-national variability in HPC product use, geographically-linked socioeconomic data to account for a population's ability to purchase certain products, water use and disposal data, information on sanitation facilities and practices, and in river dilution factors from official census and other data sources. The model aggregates scenarios at the second level national administrative divisions, i.e., county or district.



Summary and Discussion of Results

- The map above shows global Predicted Environmental Concentrations (PEC's) for LAS calculated using a European per capita use value (Schroeder et al. 2002) to estimate global emissions. This is likely to be a conservative (over) estimate especially for developing areas of the globe.
- Distributions are shown for PEC's, dilution factors, water use and sewage treatment connectivity for some key countries.
- In areas where higher PEC's are forecast, further understanding into disposal practices and how products are used can be developed. For example in areas in the Middle-East water from sewage treatment plants is used directly for irrigation, and in more developing areas of the world products are used in a bucket and the waste water is disposed of onto ground. In both cases waste water is not discharged into surface water so the approach used here (waste water is assumed to be discharged to surface water) will give higher PEC's.

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