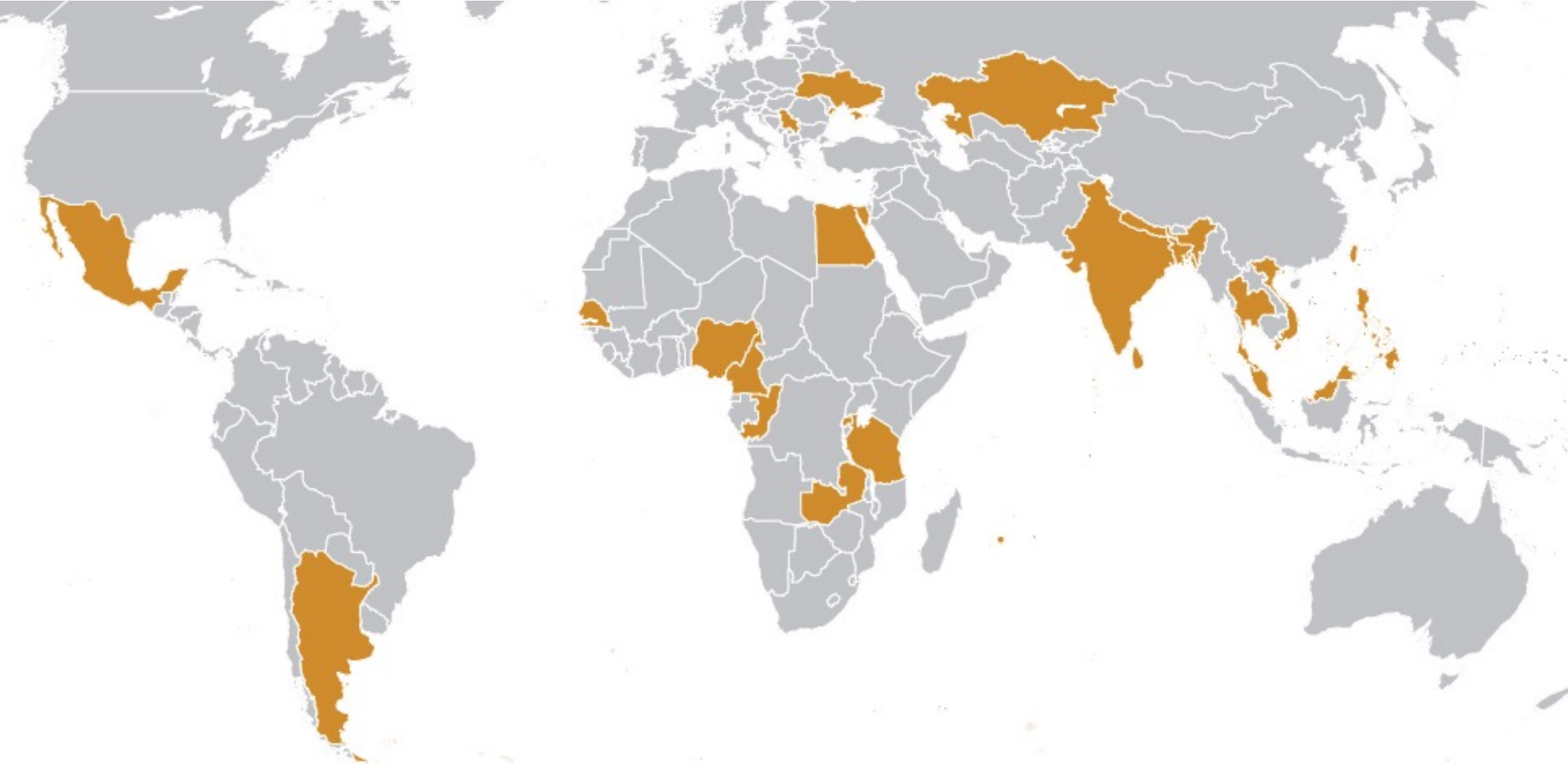


Widespread chemical contamination of recycled plastic pellets globally



24 NGOs in 23 countries purchased bags of recycled High-Density Polyethylene (HDPE) pellets



- Association pour la Défense de l'Environnement et des Consommateurs (ADEC), Senegal
- Action sur l'Environnement et le Développement (AED), Republic of the Congo
- AGENDA for Environment and Responsible Development (AGENDA), Tanzania
- Consumers Association of Penang (CAP), Malaysia
- Centre for Environmental Justice (CEJ), Sri Lanka
- Centre for Zero Waste & Development, Zambia
- Center for Public Health and Environmental Development (CEPHED), Nepal
- Centre For Earth Works (CFEW), Nigeria
- Research Centre for Gender, Family and Environment in Development (CGFED), Vietnam
- Citizen consumer and civic Action Group (CAG), India
- Cooperation for Sustainable Development, Kazakhstan
- Ecological Alert and Recovery Thailand (EARTH), Thailand
- Environmental Ambassadors for Sustainable Development, Serbia
- Environment and Social Development Organization (ESDO), Bangladesh
- Fronteras Comunes, Mexico
- Global Initiative for Environment and Reconciliation (GER), Rwanda
- Interfacing Development Interventions For Sustainability (IDIS), Philippines
- Kenana NGO for Sustainable Development, Egypt
- Pesticide Action Network (PANeM), Mauritius
- Rozbudovo, Ukraine
- Taller Ecologista, Argentina
- Terre et Développement, Cameroon
- Toxics Link, India
- Wild at Heart Legal Defense Association, Taiwan

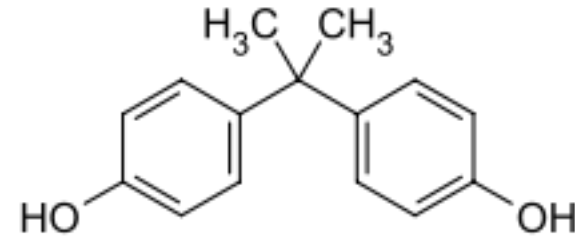
Chemical analysis

The pellets were analyzed for three types of chemicals, including:

- 11 brominated flame retardants (used in electronics)
- Bisphenol A (e.g. used in polycarbonate plastics)
- 6 UV-stabilizers (used to prevent deterioration from sunlight)

= In total, 18 chemicals were included

Bisphenol A



- Used to make polycarbonate: clear, hard plastics
- Also used in a variety of other products, such as epoxy resins (e.g. two-component glues) and the linings of canned goods
- Endocrine disrupting chemical
- Regulated in an increasing number of countries



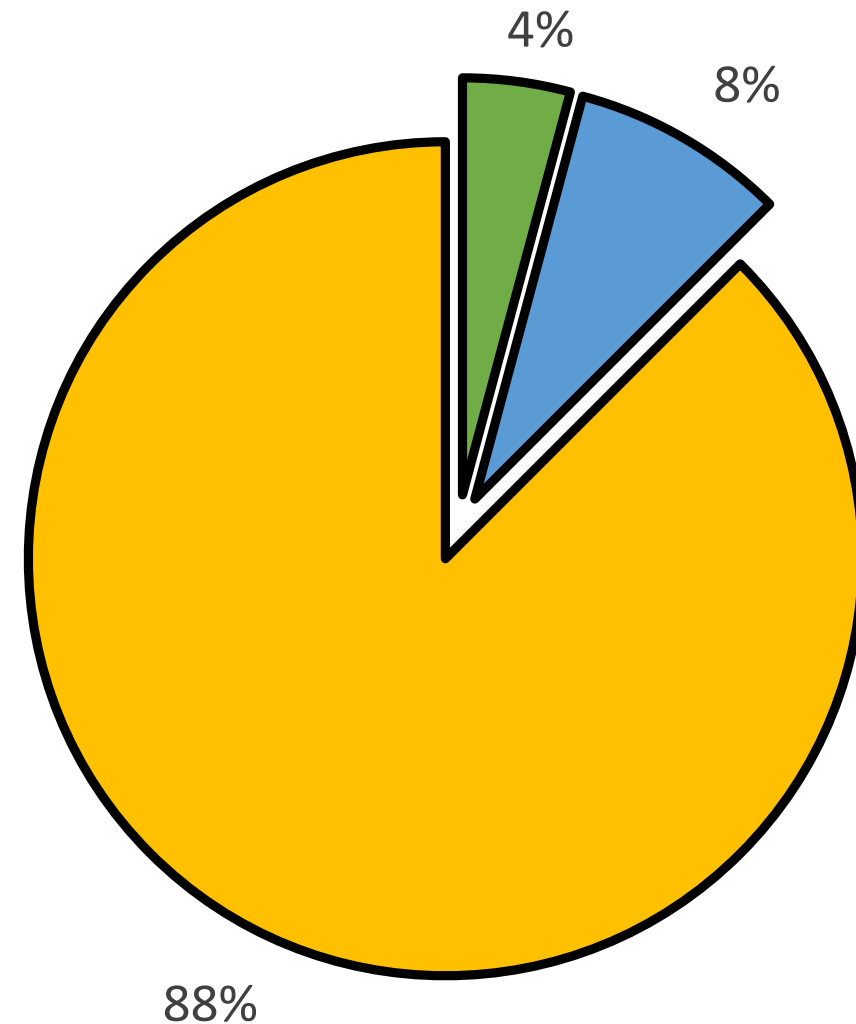
Brominated Flame Retardants (BFRs)

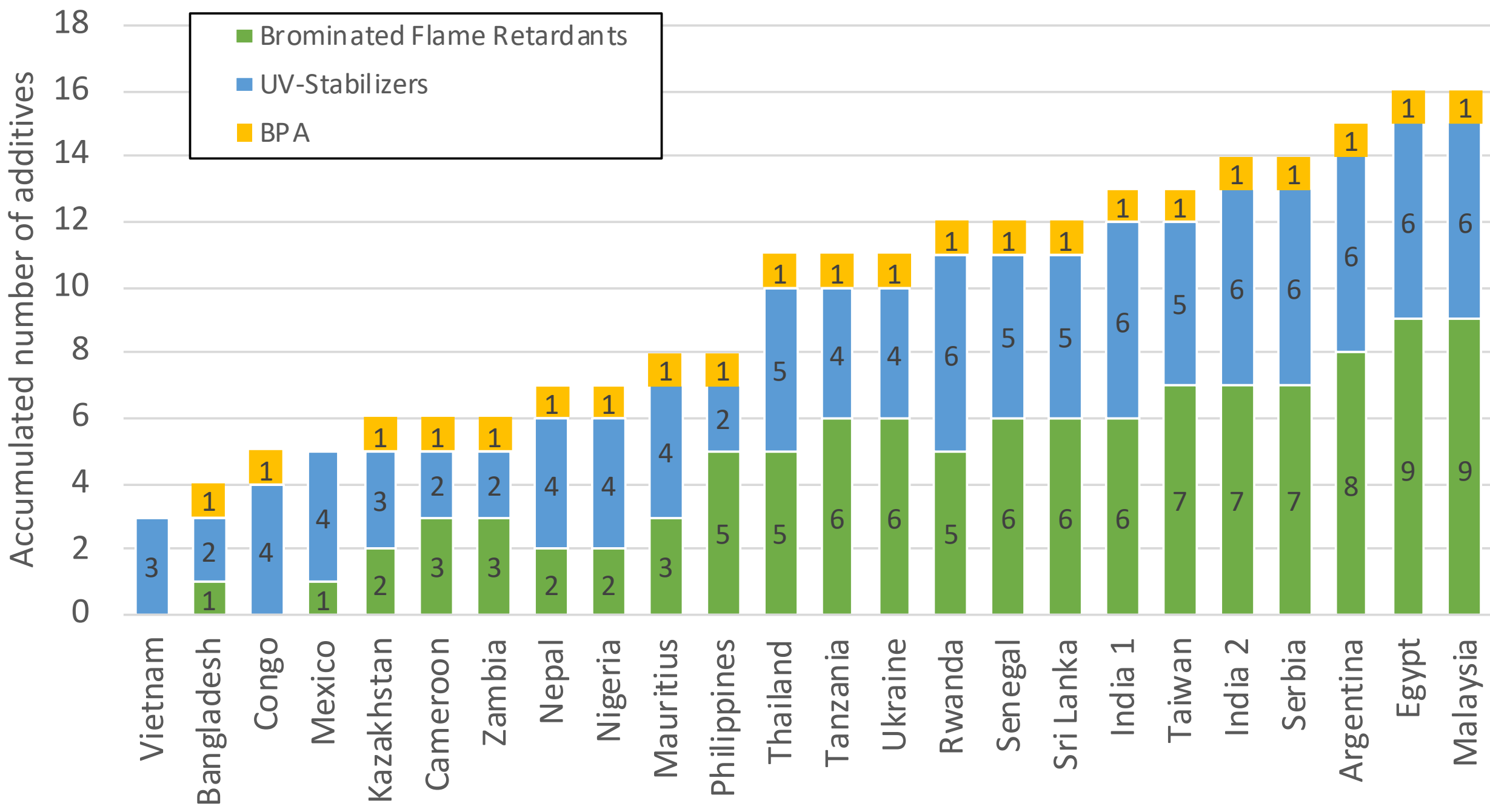
- Used in electronics (mostly ABS plastics)
- Many types of health impacts
 - Endocrine disrupting chemicals
 - Neurotoxic
- Older BFRs listed under the Stockholm Convention (PBDEs, HBCD)
 - DecaBDE without any exemption for recycling
- Too little information published about newer BFRs but indications of health impacts



Number of chemical groups per sample

- Percent of samples with 1 group
- Percent of samples with 2 groups
- Percent of samples with 3 groups







PLASTICS, EDCs & HEALTH

A GUIDE FOR PUBLIC INTEREST
ORGANIZATIONS AND POLICY-MAKERS ON
ENDOCRINE DISRUPTING CHEMICALS & PLASTICS

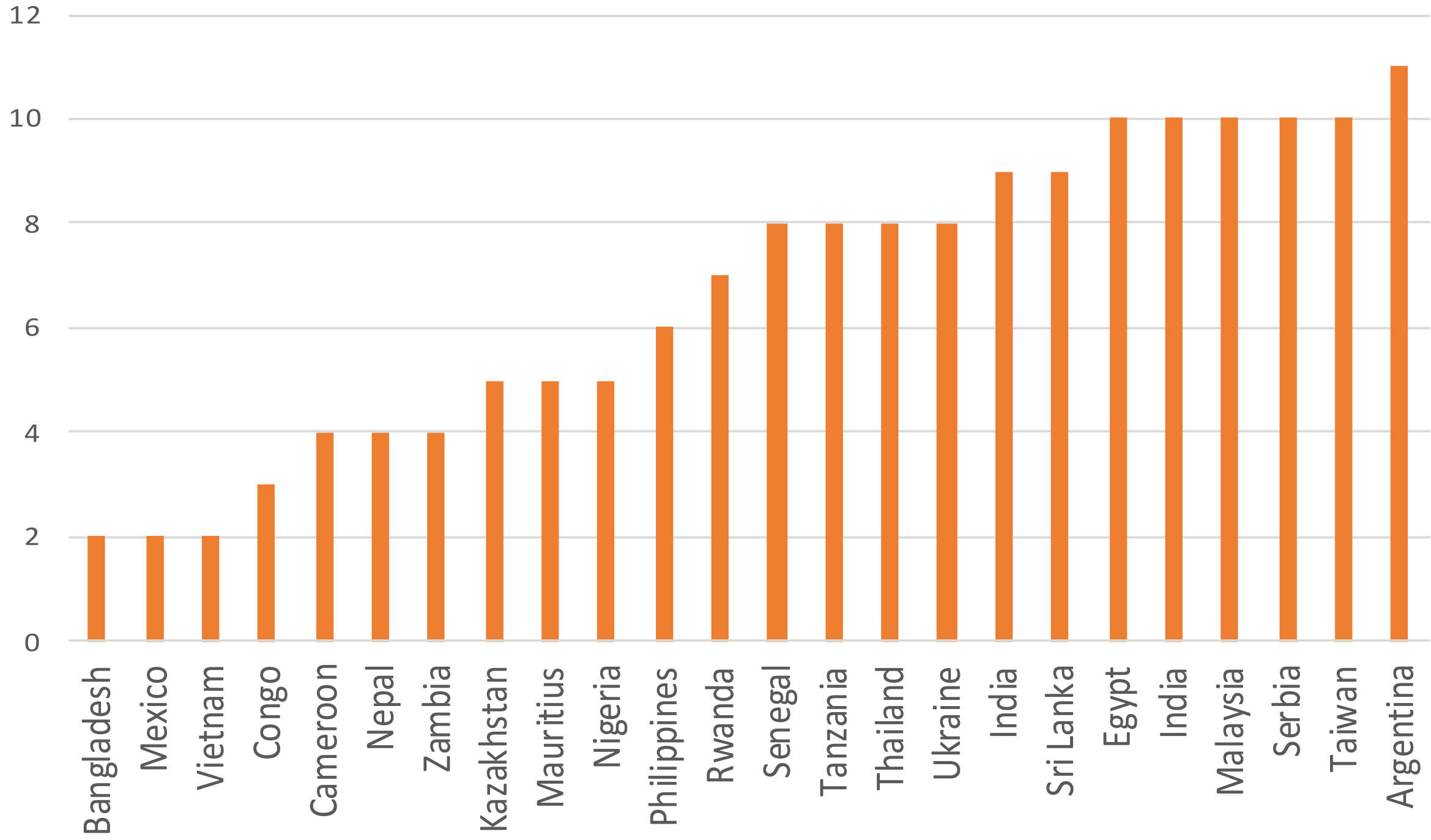


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Potential health impacts

- The three types of chemical additives selected for this study can all cause harm to human health
- There are published scientific studies for 12 of the chemicals that show that they can cause endocrine disrupting effects (bisphenol A, eight of the brominated flame retardants, and three of the UV-stabilizers)
- Also, other types of harm have been indicated for the brominated flame retardants and some of the UV-stabilizers

Number of EDCs



Conclusions on recycling

- Widespread contamination of recycled plastic pellets with hazardous chemicals: none of the samples were free from chemical contamination
- Plastic materials containing toxic chemicals should not be recycled: most of the pellets unsuitable for use in new products
- The same chemical safety rules must apply to materials made with recycled plastics, as to those made from virgin plastics

Conclusions on use of toxic chemicals in plastics

- Manufacturers should phase out use of toxic chemicals in plastics, and make sure to disclose any toxic content to downstream users, consumers, recyclers and waste handlers
- Governments should ban the use of groups of toxic chemicals such as brominated flame retardants, bisphenols and benzotriazole UV stabilizers
- Export of plastics and plastic waste containing toxic chemicals should be prohibited, especially electronic waste

Thank you!

