WWF Vision Statement:

Responsible Use of Alternative Materials to Address Plastic Pollution

Vision Statement

Plastic pollution is an urgent and highly visible environmental challenge, harming wildlife, ecosystems, and communities around the world. Addressing plastic pollution will require a substantial reduction in the overall production and use of plastic, alongside a transition away from dependence on fossil-based feedstocks. In response, many businesses, policymakers, and the public naturally look to substitute plastic with other materials like paper, glass, metals, or biobased materials as a solution to the problem.

Substitution has an important role to play in addressing plastic pollution, but it must be applied thoughtfully and alongside other solutions to ensure positive outcomes for people and nature. Analysis in Pew's *Breaking the Plastic Wave 2025* report finds that 19 million metric tons of the plastic packaging waste expected to be generated in 2040 can be replaced with glass, metal, paper, or compostable materials in a scenario where ambitious global action is taken.[1] Under this scenario, substitution accounts for 13% of the total reduction in packaging waste, along with elimination and return- and refill-based reuse. The report reinforces that no single intervention will be sufficient to address the scale of the crisis and that a combination of upstream measures to reduce plastic use and downstream measures to improve waste management is needed.

To maximize environmental benefits, the prioritization of solutions must be grounded in the waste mitigation hierarchy. This means that overall waste reduction, achieved through elimination, reuse systems, or new delivery models, should be considered before substituting plastic with other single-use materials. In general, substitution should be considered in cases where the use of plastic cannot otherwise be eliminated or reduced and where the substitution to another material leads to more favorable environmental and social outcomes, such as renewable and responsibly sourced materials and higher rates of recycling or composting at end-of-life. This ensures that substitution complements, rather than replaces, higher-impact upstream interventions.

All material choices come with their own set of impacts, advantages, and drawbacks. There is no one-size-fits-all solution or universally "better" material. As a result, any substitution from one material to another will come with environmental, social, and economic trade-offs that need to be carefully assessed and managed. For instance, while paper has many benefits as a renewable, recyclable, and compostable material, a widespread shift from plastic to paper could put increased pressure on forests already at risk of deforestation, degradation, and land-use change if paper fiber is not sourced responsibly. While glass and metals like steel and aluminum are infinitely recyclable, they have high raw material extraction and production impacts, meaning their potential benefits are only realized if they are reused or recycled in practice many times. Furthermore, their weight leads to higher transport-related GHG emissions when compared to plastic.

1 The Pew Charitable Trusts, "Breaking the Plastic Wave 2025: An Assessment of the Global System and Strategies for Transformative Change," https://www.pew.org/en/research-and-analysis/reports/2025/12/breaking-the-plastic-wave-2025.

While substitution involves trade-offs, there is a clear set of principles that can guide its successful implementation:

- **Responsible sourcing –** Ensure that materials originate from well-managed sources that generate positive outcomes and avoid contributing to deforestation, soil degradation, water stress, food insecurity, or other negative impacts.
- **Protecting human health and safety –** Ensure that material production, use, and end-of-life management minimize exposure to hazardous substances and safeguard workers and communities.
- **Designing for circularity –** Design products and packaging from the outset to be reused, recycled, or composted within existing or emerging systems.
- **Aligning with local conditions and infrastructure –** Recognize that a solution's viability may differ from one geography to another.
- **Life cycle assessment –** Evaluate environmental, social, and economic impacts across the full lifecycle of materials, from production through end-of-life, to ensure net-positive outcomes.

Ultimately, material choices require a holistic, systems thinking approach rather than a focus on avoiding a particular material or minimizing a single environmental impact. The focus should not merely be about reducing our use of plastic, but our overall material consumption, waste generation, and environmental footprint. Material choices can't be boiled down to a simple question like "What's better: paper or plastic?" They require careful consideration of complex environmental, social, and economic trade-offs that must be weighed within the local context and improved continuously over time.

Our vision is to advance a systems-based, circular economy approach to material use—one that prioritizes waste reduction and reuse where feasible to do more with less and applies substitution from fossil-based plastic to alternative materials when it leads to improved outcomes for people and nature.

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