Kids4Earth Impact Assessment: Clothing Waste and Greenhouse Gas Reductions

Prepared by Kids4Earth | April 2025

Contact: contactkids4earth@gmail.com

Introduction

At Kids4Earth, we're committed to reducing textile waste and its environmental impact. Through our community-driven initiatives, we've successfully diverted over **5,000 tons** of clothing and **500 books** from landfills. This report outlines the methodologies and assumptions we use to measure our impact, focusing on key areas such as water conservation, greenhouse gas emissions reductions, and landfill pollution prevention.

---

1. Estimating Clothing Volume and Quantity

Assumption:

- Average weight per garment = **0.2 kg** (0.44 lb)
- Our average reflects a variety of items, including common garments like shirts and jeans, as well as lighter children's clothing.

Calculation:

- **5,000 metric tons = 5,000,000 kg**
- **5,000,000 kg ÷ 0.2 kg/garment = 25 million garments**

---

2. Water Saved Through Clothing Reuse

Assumption:

- Average water footprint per garment = **2,000 liters** (528 gallons)
- This figure accounts for lighter clothing, like children's garments, which typically consume less water than heavier fabrics.

Note: A cotton t-shirt uses approximately **2,700 liters of water** in production.

Calculation:

- **25 million garments × 2,000 liters = 50 billion liters of water saved**

- This amount equals the annual drinking water need of **68 million people** (based on an average of **730 liters/person/year**).

---

3. CO_2 Emissions Avoided from Manufacturing

Assumption:

- Average CO_2 emissions per new garment = **15 kg CO_2e**
- Includes raw material production, manufacturing, and transport.

Calculation:

- **25 million garments × 15 kg CO_2e = 375,000 metric tons of CO_2e avoided**

---

4. Landfill Methane Emissions Prevented

Assumption:

- **35%** of garments are biodegradable (cotton, wool, viscose, etc.)
- These materials break down anaerobically in landfills, releasing methane (CH_4), which has a **Global Warming Potential (GWP)** of **25x** that of CO_2 over 100 years.

Calculation:

- **35% of 25 million garments = 8.75 million biodegradable garments**
- Estimated landfill methane per garment = **0.4 kg CO_2e**

Impact:

- **8.75 million garments × 0.4 kg CO_2e = 3,500 metric tons of CO_2e avoided** (from methane)

---

5. Other Environmental Benefits

- **500 books diverted** from landfill, preventing additional paper waste and methane emissions.
- **Synthetic garments**: These don't produce methane but release microplastics. Our reuse programs help mitigate this pollution.

- **Educational impact**: Each reuse action promotes awareness and behavior change among participants.

Summary of Impact Estimates

Impact Area	Estimated Value
Clothing diverted	25 million garments
Water saved	50 billion liters
CO_2e from manufacturing	375,000 metric tons CO_2e
Methane-related CO_2e	3,500 metric tons CO_2e
Books diverted	500 books

Sources & References

- Water consumption: Fast Facts: Data on Water Consumption | Nutrition | CDC
- Water Footprint Network: https://waterfootprint.org
- Ellen MacArthur Foundation: https://ellenmacarthurfoundation.org
- U.S. EPA WARM Model: https://www.epa.gov/warm
- WRAP UK (Waste and Resources Action Programme): https://wrap.org.uk/
- IPCC Fifth Assessment Report: https://www.ipcc.ch/assessment-report/ar5/
- Fashion for Good Reports: https://www.fashionforgood.com/sharing-knowledge/reports/
- European Environment Agency (EEA): https://www.fashionforgood.com/sharing-knowledge/reports/

For more information or to contact us about this white paper, please visit www.kids4earth.org or email us at **contactkids4earth@gmail.com.**