

Kids4Earth Impact Assessment: Clothing Waste and Greenhouse Gas Reductions

Prepared by Kids4Earth | April 2025

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Introduction

At Kids4Earth, we're committed to reducing textile waste and its environmental impact. Through our community-driven initiatives, we've successfully diverted about **5 tons (10,000 lbs.)** 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.
- **Source:** Based on garment weight estimates from WRAP UK, EPA, and various textile recycling studies.

Calculation:

- **5 metric tons = 5,000 kg**
 - **$5,000 \text{ kg} \div 0.2 \text{ kg/garment} = 25,000 \text{ garments}$**
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2. Water Saved Through Clothing Reuse

Assumption: Average water footprint per garment = **6,000 liters**

- This is a conservative average that accounts for the mix of clothing items we typically receive at Kids4Earth—mostly shirts, jeans, hoodies, and winter jackets.
- **Note:** An average cotton t-shirt takes about 2,700 liters (713 gallons) of water and an average cotton jeans takes about 11,000 liters (2,900 gallons) of water to produce.

- Water usage includes farming (cotton), dyeing, finishing, and production.
- Source: Water Footprint Calculator ([The Hidden Water in Everyday Products - Water Footprint Calculator](#)), Water Footprint Network, WWF, and Ellen MacArthur Foundation.

Calculation:

- **25,000 garments × 6,000 liters = 150 million liters of water saved**
 - This amount equals the annual drinking water need of about **200,000 people** (based on an average of **730 liters/person/year**).
 - Average 2 liters/person/day of drinking water: 2 liters/day × 365 days = 730 liters/year per person
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3. CO₂ Emissions Avoided from Manufacturing

Assumption:

- Average CO₂ emissions per new garment = **15 kg CO₂e**
- Includes raw material production, manufacturing, and transport.

Calculation:

- **25,000 garments × 15 kg CO₂e = 375,000 kg of CO₂e avoided**
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4. Landfill Methane Emissions Prevented

Assumption:

- **35%** of garments are biodegradable (cotton, wool, viscose, etc.)
- These materials break down anaerobically in landfills, releasing methane (CH₄), which has a **Global Warming Potential (GWP)** of **25x** that of CO₂ over 100 years.

Calculation:

- **35% of 25,000 garments = 8,750 biodegradable garments**
- Estimated landfill **methane** per garment = **0.016 kg CH₄**
- Estimated landfill **CO₂ equivalent** per garment = **25 x 0.016 kg = 0.4 kg CO₂e**

Impact:

- **8,750 garments × 0.4 kg CO₂e = 3,500 kg of CO₂e 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.
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Summary of Impact Estimates

Impact Area	Estimated Value
Clothing diverted	25,000 garments
Water saved	150 million liters
CO ₂ e from manufacturing	375,000 kgs CO ₂ e
Methane-related CO ₂ e	3,500 kgs CO ₂ e
Books diverted	500 books

Sources & References

- Water Footprint Calculator: <https://watercalculator.org/>
- 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**.