

A Circular Economy Introductory Guide

Table of contents

Why this document?	1
Target audience	1
What is the circular economy?	1
Why is it relevant to the humanitarian sector?	3
A few Successes	5
Additional Links.....	5
WREC Help Desk	6

Why this document?

The [WREC](#) project conducted a baseline survey in September 2022 to determine the level of understanding of environmentally sustainable humanitarian supply chains. 50 organizations took part, and 44% showed a good level of awareness of environmental sustainability concepts. However, the concept of circular economy was least understood among the respondents, likely due to its novelty, particularly in the humanitarian context. This guide is designed to provide an introduction to the circular economy principles and highlight its potential applications across the humanitarian sector.

Target audience

The Quick Guide is specifically tailored for humanitarian logisticians seeking to practically incorporate circular economy principles and strategies into their day-to-day field operations.

What is the circular economy?

*The circular economy is a **model** of production and consumption which reduces material use, redesigns materials, products, and services to be **less resource intensive** and aims to maintain the value of products, materials and resources for as long as possible by **returning them into the product cycle** at the end of their use, while minimizing the generation of waste and negative impacts on ecosystems such as GHG emissions and pollution.*

During times of emergency, the supply chains for humanitarian aid need to be responsive to the situation at hand. However, humanitarian actors operate mainly following a linear approach with a "take-make-use-dispose" (Figure 1) mentality towards resources which is not efficient and can have unintended negative consequences to the natural environment, potentially causing harm to the communities of concern which humanitarians aim to serve. This means that resources are extracted from the natural environment, turned into products, transported, distributed, and used by communities of concern, and then thrown away as waste when they are no longer seen as useful. This model creates a one-way flow of materials and energy through the economy, without considering the long-term effects on the environment and society. It leads to a constant increase in waste materials, such as

plastics, metals, and chemicals, and contributes to high energy consumption, production of greenhouse gas (GHG) emissions, and creates ecological damage.

The Circular Economy principle provides a solution. It is an environmentally sustainable model that aims to minimize waste and negative environmental impacts while keeping products and materials in use for as long as possible. It accomplishes this by repurposing materials otherwise considered waste and by-products as inputs for new products, creating a circular flow of materials and energy in the economy.

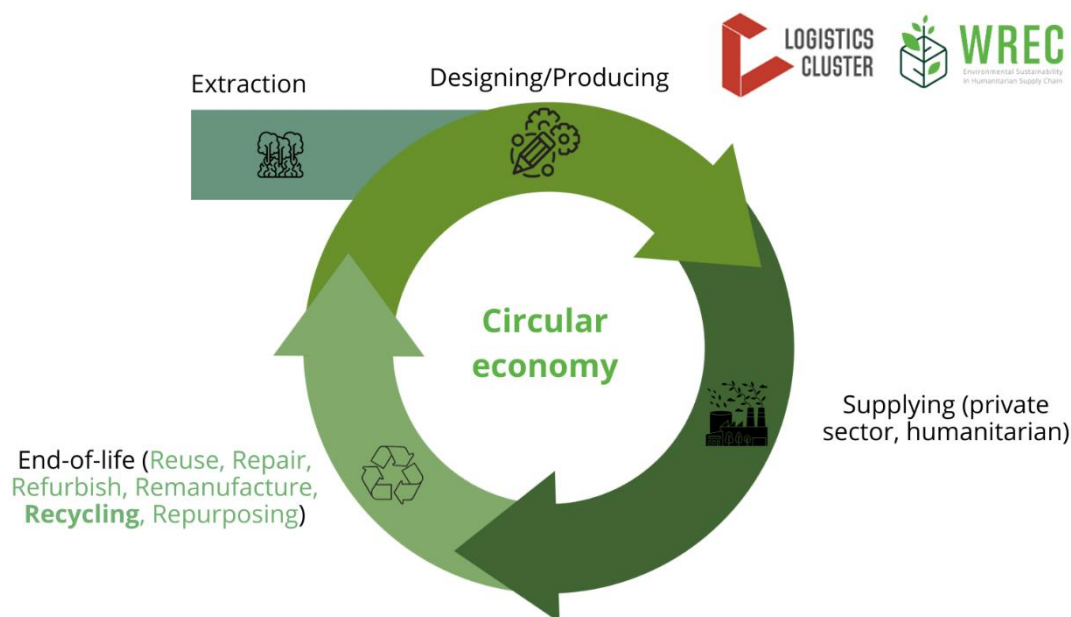


Figure 1. The WREC Circular Economy diagram

Transitioning from a linear to a circular model is not only beneficial but necessary to mitigate the negative impact of humanitarian action on the environment while continuing to meet the needs of the most vulnerable. The linear economy relies on limited resources that are becoming increasingly more difficult to find and harms both people and the environment. In contrast, the circular economy is a more environmentally sustainable and restorative option as it maintains resources within a closed loop, which helps to rejuvenate natural systems. This shift from a linear to a circular approach reduces waste through repurposing or recycling, which keeps materials from broken products in the economy and creates added value systems – this is a move toward circularity.

Linear model	Circular model
Opened loop	Closed loop
Relies on limited resources	Environmentally sustainable and regenerative
Creates waste and damages the environment (damage to ecosystems, pollution, GHG emissions)	Minimizes waste, pollution and helps to rejuvenate natural systems

Table 1. Main differences between a linear and circular model

Why is it relevant to the humanitarian sector?

The transition to circularity can be hindered by several parameters such as lack of awareness and technical expertise, low initial funding, and location-based limitations (i.e. lack of recycling facilities or policies). However, once these initial difficulties are overcome, organizations that apply circularity principles can reap many benefits. Economically by reducing the need for primary raw materials, by decreasing energy consumption and related expenses, resulting in greater cost efficiency in the long term. Environmentally, organizations can reduce emissions and protect ecosystems and biodiversity while decreasing waste generation. Socially, organizations have the potential to enhance local employment opportunities and improve the well-being of communities of concern while collaborating with other stakeholders. Table 2 presents specific benefits relevant to the humanitarian sector, showcasing how circularity can amplify positive impacts in this field.

Benefits of Shifting to Circularity			
Cost savings	Positive environmental impact	Economic opportunities for beneficiaries	Collaboration between stakeholders
The shift to circularity could significantly reduce the need for primary raw materials and expenses for organizations, resulting in greater cost efficiency and profitability.	The circular economy promotes innovation that reduces greenhouse gas emissions and minimizes negative impacts on the environment.	Creation of job opportunities in the areas of recycling, repair, and rental services, and in new enterprises that utilize secondary materials in innovative ways.	Sharing knowledge and joining initiatives together can lead to big achievements, resulting in the most impactful and effective implementation.
Examples			
Jordan's Za'atari camp, housing 80,000 Syrian refugees, now has a 12.9MW solar plant. The largest of its kind ever built in a refugee camp, it will reduce carbon emissions by 13,000 tonnes per year and save \$5.5 million annually. Praised by the UN Refugee Agency (UNHCR), the plant will provide 12-14 hours of electricity daily, without rationing. All electricity generated will power refugees' shelters, with any excess fed back into the national grid ¹ .	The Resilience and Water Optimization project reduced freshwater use, improved water conservation, and established home gardens for food production in communities hosting Syrian refugees and vulnerable Jordanians. It included the installation of grey water units and rehabilitation of water supply infrastructures for 343 households, as well as providing climate-smart agriculture training and kits to 100 home gardeners, enabling a positive environmental impact. ²	The Fair Recycling Project (DRC) aims at creating an inclusive plastic recycling ecosystem in Kenya for informal workers and refugees by engaging the local communities, creating jobs and providing training opportunities. The creation of waste-picker jobs has served to formalize a previously informal job sector in these communities, resulting in increased income, decent jobs, and safer work conditions while having a positive impact on the environment. ³	A collaborative effort between Engineers Without Borders Norway, Polyfloss ⁴ , and Field Ready created a machine designed for field use. It converts plastic waste into insulation products that can be used for shelter, resulting in a 40% reduction in fuel consumption for heating in a Turkish refugee camp.

Table 2. Benefits of shifting to Circularity

¹ UNHRC – Jordan's Za'atari camp goes [green](#) with new solar plant

² ACTED - Circular Economy in the Humanitarian Sector [Toolkit](#)

³ Danish Refugee Council - [From waste pickers to suppliers: A community-based recycling project to create value in Kenya](#)

⁴ Waste for Warmth - The [Polyfloss](#), an insulation made from recycled plastic

How to do it concretely

Humanitarian organizations can begin to introduce circularity throughout the supply chain: in procurement practices (choosing circular products and selecting suppliers and producers based on their maturity in terms of environmental sustainability), transport (applying reverse logistics), end of life management (repurposing or refurbishing products), etc. Some areas where circularity can be included are:

- Packaging: minimizing packaging, avoiding single use packaging or move to paper-based packaging solutions which can be recycled;
- Vehicles: exploring flexible fuel vehicles, electric or hybrid vehicles where infrastructure exists to maintain them; the use of diesel 4x4 vehicles should be limited to contexts where 4x4 is regularly required;
- Electronics: choosing products with longer lifecycle, promoting circular options such as the 'right to repair', and improving the collection and treatment of non-longer used electronic items by integrating take-back schemes;
- Infrastructure: using environmentally sustainable and efficient insulation materials to limit energy losses;
- Food: favoring products that require a less water-intensive production like vegetables and cereals rather than meat;
- Non-food items: preferring items with a longer lifecycle, and that can be repaired or remanufactured.

Humanitarian contexts and emergency response don't tend to lend themselves to thinking about the long-term consequences of humanitarian action and it can seem complicated to achieve circularity in these contexts. However, this guide simplifies the journey into five distinct steps outlined in Table 3.

Steps to a Circular Economy	
Steps	Description
Step 1: Identify your needs and your social and environmental impacts	• Use a checklist such as presented by ACTED⁵ to assess opportunities and gaps and set goals to track progress. • Map out your organization's needs (resources used and budget associated) and adjust item forecasting accordingly. • Consider global and local legal requirements in your country (check with Ministry of Environment, Ministry of Commerce, etc.).
Step 2: Raise awareness	• Introduce training on circular economy approaches with supply chain and project staff to raise internal awareness amongst your colleagues . • Engage external stakeholders (private sector, governments, etc.) to promote circular practices. • Highlight how a circular economy aligns with stakeholder interests and needs. • Deal with the circular economy as a change management process.
Step 3: Green procurement ⁶	• Evaluate the impact of your items and find ways to reduce waste output at the source by working with suppliers to reduce packaging⁷, chemicals and materials that are not needed. • Work across departments (program/procurement) and add environmental considerations to your technical item specifications. • Use tendering criteria that include environmental sustainability in your procurement process⁸.
Step 4: Extend your items' lifecycle	• Identify ways to reuse, repair, repurpose, or recycle items locally or internationally. • Dispose of waste in an environmentally friendly way (energy recovery/ incinerate/landfill).

⁵ ACTED - Circular Economy in the Humanitarian Sector [Toolkit](#)

⁶ Climate Action Accelerator - Green [Procurement criteria](#)

⁷ Joint Initiative for Humanitarian Packaging - [JI Alternatives to conventional \(petroleum-based\) plastics in packaging](#)

⁸ WREC - Green procurement: [Tendering criteria](#) for packaging presentation by DRC

and/or manage their end-of-life	
Step 5: Evaluate progress	- Continuously gather feedback from relevant stakeholders, especially members of communities of concern. - Share results of your circularity efforts and adapt if necessary. - Set up a monitoring and evaluation system to track progress to measure improvements and revenues. - For example: Waste transformation success, water/electricity usage reduction, and freshwater consumption reduction (percentage and volume), the number of municipal waste facilities that we have supported to create value from collected waste. - Celebrate wins and learn from failures! Share your experiences and challenges with the WREC project community of partners.

Table 3. Steps to a circular economy

A few Successes

Recycling polypropylene bags ⁹	The World Food Programme (WFP) sold 60 tons of waste polypropylene bags to a recycling company, which will turn them into 600,000 new bags.
Recycling plastic and economic opportunities	EcoBrixx ¹⁰ recycles 514 tons of plastic waste in Uganda, creating useful products like household items, farming tools, and construction materials. They buy plastic waste from locals, offering economic opportunities.
Eco-design tarpaulin	The ICRC, UNHCR, and IFRC have launched a research and development project to design a new tarpaulin with a lower environmental impact that can be repurposed as recycled plastic roof sheets at the end of its life.
Collaborative efforts and roadmap creation	ACTED created a roadmap ¹¹ to guide field-based practitioners in adopting circularity, which they applied to a fictional example of detergent distribution. By implementing circularity, they aimed to reduce the environmental impact of non-food items distribution. The strategy had four phases: - Identifying project inputs and outputs and negotiating to include transportation and bulk storage at a low cost. - Adapting programming to offer refill and return options for containers. - Using clear and persuasive communication to highlight the benefits of the intervention while gathering feedback from beneficiaries. - Setting indicators to pursue a strong action plan.

Table 4. Four success stories

Additional Links

- European Parliament - [Closing the loop](#)
- European Commission - [Circular Economy](#)
- ACTED - [Circular Economy](#) in the Humanitarian Sector in [Jordan](#)
- UNEP - Scaling up circularity is vital to [sustainability](#)
- UNEP - Turning off the Tap: How the world can end plastic pollution and create a [circular economy](#)
- World Economic Forum – What is the [circular economy](#), and why does it matter that it is shrinking?

⁹World Food Programme - [Recycling polypropylene bags](#)

¹⁰ EcoBrixx - A [closed-loop recycling](#) Programme with a Difference

¹¹ ACTED - Circular Economy in the [Humanitarian Sector](#) Toolkit

WREC Help Desk

The WREC project includes Environmental Specialists who are there to support humanitarian partners with access to information and guidance in support of a more environmentally sustainable humanitarian logistics response. As such, please get in touch if you have questions, comments, or concerns that you'd like support with or if you simply have a story to share. Reach out to: Global.WREC@wfp.org.