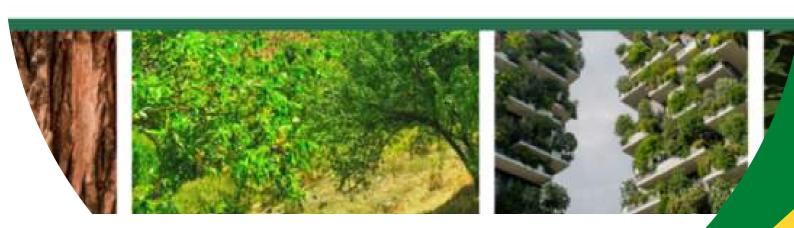


International project (2022-2023)

# Green Impact Measured



# **CASE STUDIES**

Financed by:











# Glossary

- FAIRPHONE PG. 3
- MUD JEANS PG. 19
- ZOURI SHOES PG. 31
- ECOMMUNITY PG. 45
- TOO GOOD TO GO PG. 57
- COMMUNITY WOOD RECYCLING - PG. 68
- MOTATOS PG. 81
- TAKATAKA PG. 96

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Nordplus





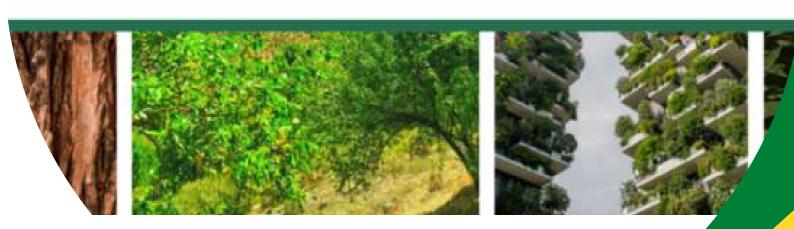






International project (2022-2023)

# Green Impact Measured



# **FAIRPHONE**

Financed by:













Today, Fairphone sells smartphones and a small selection of accessories like headphones and chargers.

Fairphone is an electronics company based in Amsterdam, Netherlands. Its story began in 2010 with an awareness campaign about conflict minerals in the supply chain of electronics and, only three years later, it became an independent company.

## What makes Fairphone a special case?

- It aims to produce a fairer and more sustainable smartphone. Within this mission, it focuses on a fair supply chain and it makes sure that its smartphones are easily reparable. Therefore, it not only sells smartphones, but also the spare parts that can easily be replaced instead of buying a new smartphone.
- In comparison to other electronics companies, Fairphone operates on a much smaller scale. So far, around 400'000 fairphones have been sold, of which 87'936 have been sold in 2021. Currently, the company focuses on the European market, but it has aspirations of expanding.













"By establishing a viable market for ethical electronics, we motivate the industry to act more responsibly".

At the heart of Fairphone's missions lies **making the electronics industry fairer**.

The industry faces many challenges related to the exploitation of nature and the humans engaged in the supply chain. Fairphone wants to make a change from within the industry and put people and planet first.

## **Mission & Circular Economy**

"We believe in a circular economy that is not only closing the loop for materials but that is inclusive and also contributes to the livelihoods of those in need. (...) We want to make the most of the materials used in consumer electronics. We believe in a world with a closed loop; a future where e-waste is reduced thanks to long-lasting products which are continuously reused and recycled."















Socially responsible

Living wage bonus for factory workers



Fairly sourced & recycled materials Made with up to 40% recycled plastics



## How does this mission play out?

Designed to last World-leading modular and repairable design

### To Consumers

By offering the option for a fairer and more sustainable smartphone, it gives a voice to the people who care about those values. It encourages conversations about what 'fair' really means and allows for people to better understand their electronic products and their impacts.

## To Other Companies in the industry

Fairphone sets an example for all the possibilities of a fairer future.

### Result

Through the design of their products, Fairphone aims to ensure the durability of their products by making it easy to repair the products and replace damaged parts. Thereby, the impact of electronics can be decreased and the amount of waste reduced.













Fairphone was founded in 2013 by Bas Van Abel, Tessa Wernik and Miquel Ballester. Today, they are a team of about 125 employees from 20 countries.

Fairphone has a series of other stakeholders:

- 1. The people engaged in Fairphone's supply chain. Fairphone seeks to create a positive impact on them through fair wages and improved working conditions.
- 2. Its customers, those who value Fairphone's ambition to provide a smartphone that is produced in a sustainable and fair way.
- 3. Fairphone has ambassadors. Those are people known in the public and that help Fairphone increase its visibility.
- 4. Fairphone not only impacts its own operations, but also those of its peers in the industry by demonstrating the possibilities of changing towards sustainable practices.
- 5. Fairphone is part of initiatives of NGOs that pursuit similar goals.
- 6. Fairphone is actively seeking to change policies and introduce new legal requirements that better protect people and the planet. Thereby, the **Dutch national governmen and** the European Union are part of Fairphone's stakeholders.











# **SERVICES** AND GOODS PROVIDED

Fairphone's main products are smartphones. Between 2013 and 2021, five different generations of fairphones came out.





Fairphone also has one kind of earbuds and some protective cases for the smartphones.

For all smartphones, as well as for the earbuds, Fairphones offers spare parts that can easily be purchased by customers and replaced in their devices.

For all parts, it is ensured that the materials are sourced responsibly, that they advocate for workers' welfare and human rights are respected throughout the entire supply chain, and that they protect the ecosystems in which materials are sourced.









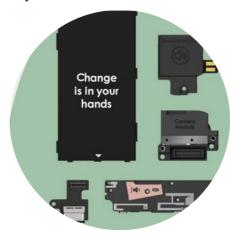


# THE GREEN IMPACT OF THE **ENTERPRISE**

Overall, they focus on four impact dimensions:

- 1. Creating products that last
- 2. Reducing e-waste
- 3. Choosing fairer materials
- 4. Putting people first.

Fairphone's entire business model is built on the aim of minimizing the negative that electronics impact have on planet and people and maximizing its green impact.



## What strategies does Fairphone use to make it greener?

- The **modular design** of the products allow them to be *reparied* and upgraded, instead of replaced with new devices, which prolongs the product life while decreasing the demand for resources and the carbon emissions.
- Spare parts and repair manuals are provided to end-users. The modular design also allows for higher recovery rates of materials when they are recycled.
- Because many materials in the industry pose social and/or environmental challenges, Fairphone has identified 14 focus materials. Of those, 31% are from fair sources. The 2023 target is to increase this share to 70%. The utilized gold is fair-tradecertified. Apart from that, many materials are sourced from a closed-loop and recycled.
- To encourage their customers to recycle their products, Fairphone has a take back program for all its products.















#### What is the result?

- Through these efforts, the Fairphone 4 is e-waste neutral. This means that for every phone or module sold, another end-ofuse phone or the same amount of e-waste is reused or recycled by Fairphone.
- Fairphone pays close attention to its **supply chain**. They work directly with suppliers to limit the amount of overtime or of temporary workers in its suppliers.
- Certain chemicals are banned in the manufacturing process, thus making it safer.

## Fairphone has a **positive impact beyond its own operations**.

- They conduct their research, raise awareness and take leadership in establishing a sustainable material supply in the industry.
- They are also among the most active electronics companies in pushing for policies and standards on minerals procurement in the electronics industry.
- Thereby they inspire the entire industry to make a change.













THE GREEN IMPACT **MEASUREMENT PROCEDURES** AND METHODS

Fairphone runs assessments that are made available and demonstrate their green impact.

- 1. They conduct very detailed life cycle assessments (LCA) for their products. This means that they look at the *impact* a product has throughout its entire life, covering the sourcing of materials, production, transportation, use and disposal. Fairphone also requests energy data from its suppliers.
- 2. Additional metrics collected are based on their mission statement, from which different KPIs (Key Performance **Indicators**) are formulated.
- 3. Fairphone reports CO2 emissions for the production of the Fairphone 4 by parts. They also report the shares of fair mined or recycled materials for 10 materials used in the production.
- 4. The priorization of materials to be sourced fair and recycled first is based on a materials analysis that considers environmental and human rights issues related to the sourcing of these materials. The analysis resulted in 10 priority materials with the highest opportunities of having a positive impact.













## **Fairphone 4 - Certifications**

### **B-Corporation** certified



We're proud to be B-Corp certified, joining a community of companies using business to address social and environmental issues.

#### Safe recycling



To meet our recycling targets, we are working with Closing the Loop, collecting used phones from landfill in Africa and recycling them safely in Europe (65,000 phones in 2020).

#### Living wage bonuses



Fairphone pioneered the first living wage program in the electronics industry: we pay factory workers a bonus for each phone produced. This results in a 30% increase if you earn the minimum wage.

#### iFixit score: 10 out of 10



We offer the only smartphone in the world to be awarded a perfect score for repairable design.

### EcoVadis platinum medal



We're one of the most sustainabilityfocused companies in the mobile technology sector with a platinum Ecovadis medal, putting us in the top 1% of our industry.

#### Fairtrade gold integrated



The materials that go into your phone have an impact on people and the planet. Using responsibly sourced materials, we are the first and only smartphone company to integrate Fairtrade gold in its supply chain.

#### Fair Cobalt Alliance



In 2020, we partnered with the Impact Facility to create the Fair Cobalt Alliance, recently joined by big brands like Tesla and Volvo.

#### Indice de Réparabilité: 9.3 out of 10



Fairphone 4 has been awarded a score of 9.3/10, our highest score yet.











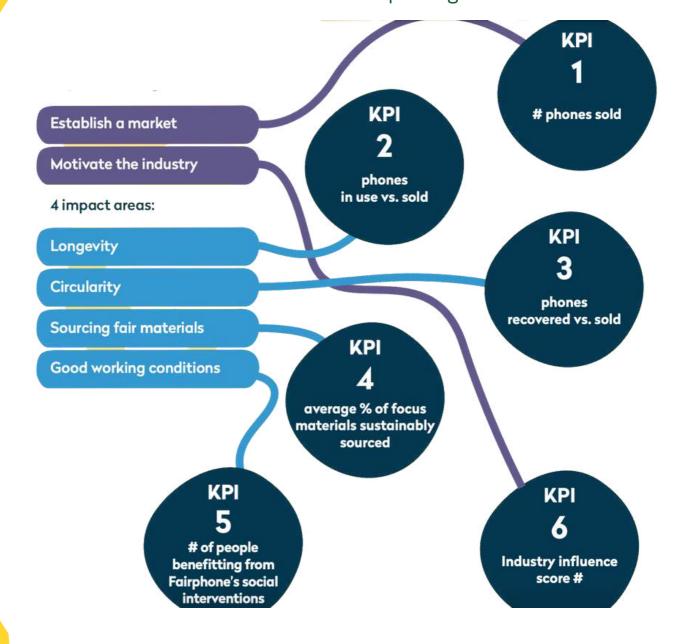
# **KPIs**

- Measure progress towards key business goals
- They have a high-level perspective
- They are relevant across different departments
  - ed for strategic decision-making

# Understanding KPIs (Key **Performance Indicators**)

Image source; Graph source

identifies Fairphone company KPIs that are key their mission and impact agenda.















### Let's see some numbers!

- **Smartphones** sold: with 25.310 smartphones sold in 2017, the numbers increased to 125.000 in 2021.
- Smartphone life span: Fairphone's goal was to have Longevity scores of 4.5 years. The lifespan of Fairphone 3/3+ and 4 is predicted by combining the product's measured actual lifetime with their expected lifetime. The goal was exceeded in 2021, with a result of 5.5 years.
- Recycling: Over 17.000 phones were recycled in 2020, when Fairphone had a target of compensating for at least 14% of the phones sold by collecting old devices through their EU recycling service, having reached 18%. In 2021, the goal was to collect the equivalent to at least 45% of the sold phones.
- 14 fairer materials: Fairphone's ambition is to have 14 fair sourcing materials in the Fairphone 4, aiming to have 70% of these 14 sourced fairly by 2023.
  - So far: In 2021, 31% of the materials were fairly sourced in its Fairphone 4 supply chain, including 100% recycled plastics in its back cover, 98% aluminum from Aluminum Stewardship Initiative (ASI) Performance Standard certified vendors in its midframe, 86% recycled rare earth in its speaker and vibration motor and an increase of Fair trade gold integration into its board-to-board connectors supply chain, next to the PCB, battery PCB, battery connectors and speaker.













### Let's see some numbers!

- Recovering e-waste in countries that lack recycling infrastructure: in 2020, Fairphone shipped 5 tons of batteries from Nigeria and 1500 phones for responsible recycling to the EU.
- **Increased revenue:** In order to be an inspiring example to the industry and also financially sustainable, revenue and profit are some of the key drivers for Fairphone's business. Although seriously challenged by global supply limitations, Fairphone's revenue increased by a further €1 million, mainly driven by the higher sales price of the Fairphone 4 and expanding its accessory portfolio. Fairphone saw €36,961,604 of revenue in 2021, compared with €35,930,371 in 2020, proving that it has a scalable and profitable business model.

Result: In 2021, Fairphone avoided 668 tons of CO2 and another 8 tons of Ewaste, and improved the lives of 7,475 people (and 18,224 indirectly).

	Fairphone Impact KPIs 2020	Goal	Actual
1	# Phones Sold	110,373	94,985
2	% Phones in use vs. sold	68%	60.5%
3	% Phones recovered vs. sold	14%	18.1%
4	Average % of 8 focus materials sustainably sourced	70%	56%
5	# People benefiting from Fairphone's social interventions	9.000	10.717
6	Industry influence score #	18	31











THE GREEN IMPACT **MEASUREMENT** RESULTS DISSEMNIATION **METHODS** 

Take note! Are you thinking that "Being fair costs too much. You can't make a fair phone at a

profit."?

Then we have some news! In 2020, Fairphone became profitable at scale. They've proven that although disruptive, their idea created an ethical business model which can be viable. With a great product backed by a dedicated customer base and a strong and motivated team, in a pandemic year.

"If we can run a profitable company that's kinder to human beings and to nature, why can't vou?"

- Eva Gouwens, CEO, Fairphone

### Fairphone's channels to disseminate impact results:

- 1. One fundamental tool is the annual impact report that discusses measurements related to the KPIs and includes the key information of Fairphone's green impact.
- 2. Further publications are for example the full LCAs of the Fairphone 1 and 4, documents containing information on the supply chains of each product, research papers on different materials used in production or documents containing information related to the circularity of the products.
- 3. For more transparency on the supply chain, Fairphone has a world map on its website that shows all the locations related to a products origin.
- 4. Further information on their impact is briefly stated on Fairphone's website and for some topics further elaborated in blog posts.
- 5. To support other businesses in becoming more sustainable and transparent, Fairphone has included a Checklist they can use at the end of their impact report.













There are many points of learning that can be taken from Fairphone and can help other businesses become more sustainable.

Fairphone is setting an example that it is possible to and achieve high ambitions, like creating a and fair more sustainable electronics sector.

## **Learning points:**

- 1. Setting priorities is an important step. Looking at where the greatest impact can be realized is a good starting point.
- 2. It's not necessary to do and measure everything now, but what you do and how you measure it should be done in a good, accurate way.
- 3. The collected information should then be made easily accessible, so that those who are interested can find and use it.
- 4. With its modular system, Fairphone encourages others not to be afraid of being different than the rest in the industry, as well as to make sure that the foundations of a business model is sustainable in order to be sustainable throughout all operations.
- 5. Using the Checklist for People and Planet (p. 54) is a good starting point to start measure your impact.













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International project (2022-2023)

# Green Impact Measured







# **MUD JEANS**

Financed by:



Nordplus













**MUD Jeans:** Frontrunners in Circular Denim

MUD Jeans was founded in 2012 with the goal of addressing the factory workers' extremely demanding situation as well as the endless demands for material and the consequences for our planet. The main intention was to do things differently by incorporating circular principles and sustainability awareness into their products and production.

## What makes MUD Jeans a special case?

Jeans has become an exemplary circular fashion company, one of the world's first B Corps, pioneering the Lease a jeans model since 2013 and consistently putting the circular economy principles into practice".

## Their focus is on **jeans**.

Why? Because jeans are one of the most polluting items in fashion. Over 1 billion jeans are sold yearly, jeans that typically require uses 7.000 litres of water per pair, while toxic chemicals and dyes are routinely used in their production. In fact, Less than 1% of material used to produce clothing is recycled. Thus, MUD Jeans recognizes and explores the impact of recycling jeans and using organic cotton.













"Our mission is for the fashion industry to be driven by circular production and conscious consumption. We pioneer with jeans, by taking positive action, being transparend and supporting sufficiency."

MUD Jeans aims to produce denim articles in a way that is mindful of nature and the people affected by their production. Their strategy is based on three pillars:

**Circular Economy** - The goal is to always keep the fabrics at their highest value and make them re-enter the production process once they are no longer used. What otherwise would be waste turns into new value.

**Fair Factories** - The wellbeing of the farmers and workers producing the jeans needs to be ensured. They need to be safe during the production process. Persticides, insecticedes or toxic chemicals, which may put them in danger, are used

**Positive Activism** - MUD Jeans shares their knowledge and is transperent. Thereby, they aim to inspire others to walk the same path.













MUD Jeans was founded in 2012 by Bert van Son. At the time, van Son had 30 years of experience in the fashion industry and knew exactly the challenges and practices that are hurting people and planet in the industry. Their headquarters is based in Laren, Netherlands

Here are some of the partners of MUD Jeans:

- BCorp: MUD Jeans is a certified B Corp (for-profit companies that use the power of business as a force for good) and signed the Declaration of Interdependence in 2015, officially embedding their ambition to create economic, social and environmental value in the statutes of the company.
- Social and Labour Convergence Program (SLCP): MUD Jeans completed its first SLCP audit in the fall of 2020, which assesses social and labor conditions, allowing more efficiency, transparency, and opportunities for improvement.
- Ecochain: Ecochain is an Environmental Intelligence Platform that support and verify the environmental impact calculations of MUD Jeans. They have been calculating the environmental impact of every jeans style in their collection













- They are part of projects with the **Ellen MacArthur** Foundation (EMF). In 2017 EMF launched the 'Make Fashion Circular' initiative that aims to create collaboration, partnership and guidance to incentivise a new textiles economy based on circularity principles. MUD Jeans has been involved in case studies, projects, working groups, research and reports. Their most recent participation with EMF is with their Jeans Redesign Project aiming to create guidelines to help jeans brands become more circular.
- Circle Economy: MUD Jeans have been long term partners with Circle Economy, having collaborated in projects, research, and reports. Circle Economy is an Amsterdam based social enterprise that strives to accelerate the practical and scalable implementation of circular economy both in businesses and cities.
- Sea Shepherd: MUD Jeans has teams up with them and created a capsule collection of which the profits will go to support their mission against illegal fishing and plastic pollution.
- They are also running partnerships with like-minded companies, such as Fairphone, Tony's Chocolonely, and Moyee Coffee.













Their main sold products are Jeans. Resorting to a circular philosophy, their goal is to design products that can be reused, recycled and upcycled easily.

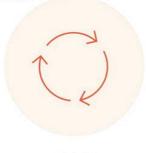
# 311 mio

We saved 311 million litres of water in 2021



824,000

We avoided 824 thousand kilos of CO2



61,667

We saved 61,667 jeans from landfill and incineration in the last 6 years

## What does that mean?

- They don't use leather labels, but printed ones instead.
- Their yarn is made out of worn out jeans that are shredded, cut into pieces and blended with virgin cotton.
- They save water by using a rainwater-only factory where 95% of water is recycled
- They create a desirable worn effect by using lasers instead of potassium permanganate
- They get a stonewash effect by using abrasive parts inside washing machines rather than polluting pumice stones
- They work with suppliers who are energy self-sufficient
- They get a bleach-wash effect using oxygen converted into ozone - afterwards, the ozone is turned back to oxygen













### How does MUD Jeans' business model work?

Their green strategy is based on three factors:

- Circular Economy
- Fair factories and short supply chain
- Positive activism
- 100% of MUD Jeans' style is circular. This allows them to recycle, reuse, or upcycle the returned jeans.
- Lease your Jeans: MUD lease jeans for a monthly fee of €9,95 for 12 months. After that, the payments stop automatically and the jeans are yours. Until you decide to send them back for recycling. Free repairs are included during the first 12 months of the leasing period.
  - After leasing for a year, there are three options:
    - Swap your jeans for a new pair and continue leasing for another year.
    - Keep the jeans and wear them for as long as you like you can send them back at any time for recycling.
    - End the relationship and send the jeans to MUD to get a voucher for a new purchase.











# THE GREEN IMPACT OF THE **ENTERPRISE**

### **Overall**

Almost **50.000 pairs of jeans** sold in 2021

Compared to the environmental impact of the industry standard, MUD Jeans uses 94% less water (one pair uses 393 litres of water to be produced, 6,607 litres less than the average jeans) and 75% less CO2 (Producing one pair of MUD Jeans emits 5.9 kg of CO2). They also have 124.2 B Corp points, which is based on an assessment carried out every 3 years comparing companies that use business to do good. With a score of 74.1, MUD Jeans had the highest score in the Environment category worldwide in 2021. In 2021, MUD Jeans recycled 11512 jeans.

## **Partnership**

In 2021 they partnered with Ikea to developed their first circular denim cover made from 60% organic cotton and 40% postconsumer recycled denim. Each cover saves 27,000 litres of water and reduces its carbon footprint by 67%.

For every recycled jeans, a donation is made to the non-profit Justdiggit to regenerate one tree, reaching 11500 in total.

## **Educating the next generation**

MUD Jeans has designed an online certificate programme, to provide tomorrow's generation with the tools to make an impact.











# THE GREEN IMPACT **MEASUREMENT PROCEDURES** AND METHODS

MUD Jeans have worked together with Ecochain to measure the entire environmental impact of the company from cotton to end product. Their 2021 Sustainability Report can be found here.

- A <u>Life Cycle Analysis</u> is conducted every year with the support of Ecochain to calculate the water, Co2, land, energy and biodiversity use of every single style in their MUD-collection. This is used to understand their environmental impact and define how this can be further reduced.
- Traceability and transparency: MUD Jeans has full traceability of every item that goes into the making of the jeans. This means that they know where the materials come from, and who is making the jeans. Here is the breakdown of their supply chain:
  - Raw Material: OCS certified organic cotton, Turkey & India
  - Recycled Fibre: Recover, Spain
  - Yarn: Ferre, Spain Fabric: Tejidos Royo, Spain
  - Fabric: Bossa, Turkey
  - o Stitching & Laundry: Yousstex International, Tunisia
  - Sewing Yarns: Cucirini RAMA, Italy
  - Cotton Labels: Audeo, Tunisia (2021)
  - Buttons & Rivets: BERNING, Germany (2021)
  - Zippers: YKK, Tunisia

Partners:

o Wash & Care Labels: Etic Europe, Tunisia











THE GREEN IMPACT **MEASUREMENT** RESULTS DISSEMNIATION **METHODS** 

Making it easy for consumers to transparently check environmental impact

- 1. A short supply chain: Their production and distribution mainly involves a few suppliers with whom they want to build long-lasting relations. This makes their impact easier to track and working conditions easier to assess.
- 2. A Code of Conduct is in place and easily accessible. All of their main supply chain partners have signed it.
- 3. They've set three references that help them assess the situation at the factories they work with: Fair wages, working environment, and equality.
  - a. Note: the fair wages: this is assessed by audits conducted by the Fair Wear Foundation (2016) and the Social and Labor Convergence Program (SLCP) (third one completed in 2022).
- 4. **Ecochain**: MUD Jeans has conducted environmental impact assessments with the help of Ecochain, with the goal of understanding their impact and make data driven positive change and improvements to the product. Ecochain assesses the footprint of the product, the company itself and the whole value chain.
  - a. The results are shared and accessible, and they are used to set clear impact reduction targets for the future. Their Life Cycle Analysis and Sustainability Reports are available on their website.

Partners:













MUD Jeans is an example of how, with short supply chains, circular principles, and good motivation, a company can start small and grow to have a big impact. Starting simple and keeping it simple, the company has considerably collected awards and visibility worldwide for their green impact.

The journey of course does not come without challenges. For MUD Jeans,

"in order to make the circular economy an attractive proposition in fashion, recycled cotton would have to be cheaper than newly produced cotton, and not the other way around. However, this is not the case or rather, not yet".

Nevertheless, the company is there, directly addressing this challenge, wanting to be the pioneering brand showing the world that they can create a circular denim brand anyhow.

In summary, we can say that the secret is: keep it simple, make it traceable and transparent, partner up well, and focus on the circularity!













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International project (2022-2023)

# Green Impact Measured







# **ZOURI SHOES**

Financed by:



Nordplus











# **Zouri Shoes**

A Portugese footwear brand thoroughly committed to producing shoes by sustainable and ethical means only.

The main marketing point of Zouri shoes is making them out of the plastic that pollutes Portugese beaches. In fact, the recycled plastic is only a part of the shoe. It also features 'leather' made either of pineapple leaves (pinatex), apple peels, or corn waste, as well as organic cotton and natural rubber.

All parts of the design are made and assembled in Portugal, Guimarães, a city with a long history in the shoe making industry.















"We respect and promote the almost extinct craft of handmade shoes," says co-founder Adriana Mano.

The company owners and employees all work together in their small workshop and make design and construction decisions as they go. As the items are handmade, they also have better control of the sustainability of the production process.

All of the final product is 100% made in Portugal, abiding by fair and ethical production standards.











Plastic pollution in the oceans is an ever-pressing problem and the need for solutions is long overdue.

It affects every living thing, presenting a host of problems. It is dangerous on any scale from microplastics altering hormones in mammals to larger trash entrapping animals and getting stuck in their bellies, resulting in deaths of hunger.

It is best if the waste is not simply transported to landfills but rather recycled and put to good use.

By integrating plastic waste in their products, the company raises awareness of the plastic pollution disaster unfolding right now.















Zouri shoes promotes a new standard that hopefully normalises sustainable design to the extent that it is incorporated in mass produced items and circular economy might become the norm in the future.

It is also a part of a global mental shift in how we perceive waste. Zouri shoes regard ocean plastic waste as a resource instead as simply pollution with no function whatsoever.

Mano sums it up: "Our idea for Zouri, using design and creativity, is to take something useless and transform it into something valuable and possibly durable".











The company is founded by two Portugese shoemakers - Adriana Mano and Antonio Barros, who decided to use their knowledge of the craft to do something that would also help the environment and raise the awareness of ocean pollution.

To support the production costs, a crowdfunding campaign with the target sum of 20 000 dollars was launched on Indiegogo, where backers could pay a discounted price for a pair of shoes ahead of production. The campaign was very succesful and raised over 30 000 dollars.















Initially, the company did not receive any government funds or bank loans.

However, many partners were invested supporting the effort and helped with marketing, website and a large shoe mold company provided them for free.

In 2021, Zouri shoes reached the revenue of 400 000 euros.

In 2022, Zouri won an award from the European Investment Bank that will help them scale the business.











Zouri Shoes offers footwear for men, women and children. Right now they have two main designs sneakers and sandals.

As of 2022, the company is looking into expanding their operations into clothing and home goods like ceramics and furniture. Their goal is to be a be "a brand of plastic waste from the ocean applied in different areas."















In 2018, their first year of operation, the company aided in the collection of a ton of plastic waste from the shore of Portugal.

Volunteers were already collecting the plastic waste for years, but there was no use for it and all of it ended up in the landfill.

Therefore, these initiatives were very happy with Zouri's proposal to bring this untapped resource back into the supply chain.

Further, Zouri played the role of coordinating more than 600 volunteers from local institutions, NGO's and schools, as well as the transportation, sorting and preparing of the plastic for reuse.













Recycling plastic waste is actually a laborious and carbon-intensive process. However, Zouri shoes have foregone this costly step by simply using shredded plastic waste in a mix with natural rubber that results in the sole component of the shoe. Each pair reuses 6-8 plastic bottles.

This serves as an excellent example on how to integrate waste into new products at a relatively small cost.











The amount of of plastic pollution in the oceans is colossal - estimates vary, averaging at 20 million tons that enter the ocean every year. That is why the company also measures their impact in tons of waste collected.

After the volunteers collect the waste in bags, it is compressed in heaps with standard weight, so by counting the heaps they can determine the amount of plastic removed from the coast.

After separating metal and other unfit materials, they can use 600-700 kg of each metric ton of collected waste.













During 2018-2022, Zouri have collected 8 tons of plastic waste of which 400 tons have been transformed into shoe soles.

Cleaning up the Portugese coast is the company's main marketing point. Emphasizing their waste removal efforts and that each shoe contains 6-8 recycled plastic bottles is what separates them from other shoe brands.

When a client receives the order, a letter is included with all the materials and quantities used in the sneakers, the location of where the plastic was collected, as well as the name of the person who made the pair.













Efforts to create green impact is the very fundament of why the Zouri Shoe brand exists.

Their concept of removing plastic from the beach and integrating it into a new, appealing product is what attracted very successful crowdfunding backing to start a viable business.

Because they established a successful circular model where the plastic is a resource, volunteers were happy to help collect it knowing that it will not be put to sustainable use.













- https://www.worldfootwear.com/news/z ouri-awarded-at-the-social-innovationtournament-/4312.html
- https://www.eib.org/en/stories/plasticcollection-beaches
- https://www.indiegogo.com/projects/zou ri-sustainable-sandal-with-plastic-fromocean#/
- https://youtu.be/cqNZBWYyxek
- https://youtu.be/rSrI9LcDIBc
- https://youtu.be/ZSc\_HBOYpWY











International project (2022-2023)

# Green Impact Measured



### **ECOMMUNITY**

Financed by:



Partners:











#### **Ecommunity**

An Israeli factory for electronics waste recycling and refurbishing that operates since 2007. Electronic waste constitutes only 2% of all solid waste in Israel but produces about 70% of the total number of dangerous toxins, a problem the company succesfully addresses.

By giving meaningful jobs to people with disabilities, the enterprise successfully combines two under-adressed matters tackling the growing mound of e-waste and integrating people with disabilities in the job market.

The company sustains itself by selling the disassembled parts and refurbished devices.











As per the company founder Danny Kogen, one of the goals of Ecommunity is transform electronic waste from an ecological hazard to a natural asset".

If simply left to disintegrate in landfills, every device - from a mobile phone to a fridge leaks dangerous chemicals that gravely pollute the earth, air, water and wildlife.

Since many large Israeli-based corporations change their electronic hardware every year, the country has massive amounts of e-waste. In 2019, Israel generated 160,000 tons of electronic waste.















Social inclusion is the second pillar of Ecommunity.

Not only about 80% of the employees are people with special needs, but also the working of Jews along Arabs is fostered, thus easing religious tensions in the country.

More than a third of Israel's residents with special needs are capable of working. By giving them employment at Ecommunity, they are invested with a sense of purpose and the opportunity to feel like full members of the society. By becoming skilled workers they can pride themselves in having mastered a craft.













Danny Kogen, the CEO of the company, founded Ecommunity after his third son was born with autism spectrum disorder. Envisioning his son's future, Kogen came up with an idea that would ensure employment opportunities both for his son and for other people with physical and mental disabilities. The corporation is equally owned by the company "Ecology for a Protected Community", and the European Recycling Platform (ERP), headquartered in Italy. ERP is founded by some of the largest electronic equipment manufacturers in the world (Sony, HP, P&G, Electrolux).















Ecommunity is a "social corporation" that does not intend to distribute profits to the shareholders, but to invest it in lowering the handling fees for its services and improving the process of collection, control and management of the collection of e- waste, as well as to benefit as many special needs people as possible by scaling to a national level.

What started as a modest electronics disassembly shop in 2007, has now grown into an established business and a leader in its field, looking to expand as far as the United States.













Ecommunity offers various goods and services.

Because of the "Electronic Waste Law", all electronics retailers in Israel have to recycle a certain portion of returned used goods. In this, they can use the services of companies like Ecommunity.

From the devices received, precious metals and good parts are extraced, which can be sold further.

In the 'lab' section of the plant, advanced employees refurbish appliances. These are then sold at 1/3 of the original retail price.

They also collaborate with local artists that make jewelery from the precious metals extracted.











The precendent of such a factory that combines electronic waste disassembly and employment of people with disabilities prompted the Israeli government to devise corresponding legislation via the "Electronic Waste Recycling Law", which came into effect in 2014.

Since 2021, the law requires electronics device manufacturers and importers of goods to recycle 50% of the total weight of electronic devices they sell.

Likely drawing inspiration from the success Ecommunity, all electronic-waste recycling factories must include special needs individuals as part of their workforce in order to receive accreditation.











Weight is the main measurement that regulates electronic waste recycling in Israel by law, therefore weighing is the main measurement procedure.

After the devices have been picked apart, the pure components, e.g., precious metals, are weighed again to see how much of each kind is extracted.

Counting devices is another method to determine impact. Calculations are done by counting devices of each kind multiplying by average weight of the respective appliance.

The refurbished appliances that are sold are also counted to account for substituting purchases of brand new goods.











Ecommunity's mission is to push for evergrowing percentage of recycled electronics, therefore it is essential that they regularily share the relevant figures via its website and Israeli media.

In 2019, the company collected and recycled batteries and accumulators weighing 404 tons, 30,000 refrigerators, about 120,000 electrical appliances such as washing machines, dishwashers, ovens and dryers), 100,000 computers and about 480,000 small electronic devices.

The numbers of refurbished devices sold indicate how many purchases of electronics were avoided, this way stalling the accumulation of more eventual e-waste.











Putting in motion the legislature and culture of recycling e-waste in Israel is the largest impact of the company. Leading by example, a social entrepreneur driven by a personal motivation has shaped a thriving e-waste handling industry in the country, with other nations curious about the success.

This example is supported by strong figures of hundreds of thousands appliances processed every year.

Sharing the impact that circulation of refitted appliances has by substituting brand new purchases, helps to paint a picture for future businesses where refurbished goods are increasingly common.













- Diana Lapkis's visit to the Ecommunity facility
- https://tech.walla.co.il/item/3392301
- https://techtime.co.il/2020/10/13/ecom munity/
- https://ej.uz/about\_ecommunity
- https://www.jpost.com/Enviro-Tech/Special-needs-workers-open-ewaste-recycling-spot-314651
- https://youtu.be/3kzjUR4EWeY













International project (2022-2023)

### Green Impact Measured







### **Too Good To Go**

Financed by:



Nordplus

Partners:

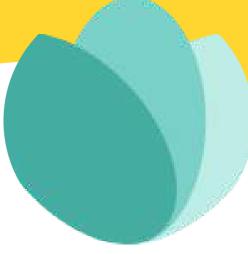








THE SOCIAL **ENTERPRISE (SE)** 



Too Good To Go is a service with a mobile application that connects customers to restaurants and stores that have a surplus of unsold food. The service covers major European cities, and in October 2020, it started operations in North America. In 2021 the app ranked #10 most downloaded app worldwide in the food and beverage category.

In 2022 Too Good To Go was the fastest-growing sustainable food app startup by the number of downloads. As of August 2022, it claims 164.000 businesses, serving 62 million users, have saved 155 million bags of food.















One-third of all food produced for human consumption never makes it to our plates, and this is a massive problem for the planet. As it decomposes in a landfill or is incinerated, the food we waste contributes 8-10% of all greenhouse gasses being emitted into the atmosphere. Too Good To Go was founded in 2016 as a solution to the global food waste issue. To fight it, the Too Good To Go app connects businesses with surplus food at the end of the day, with users able to collect it during a specified window. The app is available in 14 European countries and, as of 2020, the United States. Fighting food waste goes further than the tech - Too Good To Go builds partnerships with policymakers, governments, and food producers to enact real changes to policy and legislation. This includes an ongoing 'often good after' campaign, which has seen several producers implement new wording to best before labels to fight food waste happening in the home, and educational partnerships across Europe.

As CEO and co-founder Mette Lykke describes it, Too Good To Go "creates a marketplace for what would normally end up in the bin".















The company was created in 2015 in Denmark by Brian Christensen, Thomas Bjørn Momsen, Stian Olesen, Klaus Bagge Pedersen, and Adam Sigbrand In 2017, Mette Lykke (co-founder of Endomondo) joined as CEO.

The application was co-founded in Switzerland and Austria by Jörgen Munter, in France by Lucie Basch, and in the United Kingdom by Chris Wilson and Jamie Crummie.

In February 2019, the company raised an additional 6 million euros in a new round of investment. In August 2019, Too Good To Go was relaunched in Austria.

In September 2019, Too Good To Go acquired the Spanish startup weSAVEeat and merged it into its brand.

In November 2019, the offer of Too Good To Go was extended to plants through a partnership with the French retail plants' company Jardiland.

In December 2019, Too Good To Go partnered with the French grocery retail store Intermarché, and donated 60K euros to the French charity Restaurants du Cœur.

In October 2021, British actress Bonnie Wright teamed up with Too Good To Go to drive the initiative to reduce food waste.















Food outlets must notify the TGTG company about what they have available each day, stating what sort of food they have (baked foods, meals, produce, vegan food), and the price for a 'magic bag', whose contents they determine; the user cannot choose, but the original prices will be three or more times the TGTG price. Notification is made early based on the quantity predicted to be left over, not at the end of a selling period.

Users must register to use the service. A mobile phone with an Internet connection running Android or iOS is needed. The user runs the TGTG app, which lists outlets available within a chosen distance and time range. The customer can then order and pay for a 'magic bag'. The supplier can cancel an order at any time if the expected surplus is not available — the purchaser is notified by text message and the purchaser can cancel with two hours' notice. The phone must be taken to the food supplier in a specified pickup time window, often 30 or 60 minutes long, and the transaction is finalized by swiping the app—connected to the Internet — to confirm collection.













#### Food waste and climate change

In 2021, Siberia reached a mind-blowing 48C, severe hurricanes invaded US shores, and wildfires caused havoc across Southern Europe. According to the latest report by the IPCC, these events would not have happened without climate change. Thankfully scientists have highlighted one of the most effective ways to show warming, turning the tides on climate change for good. Reducing food waste is the number one solution to combating climate change.

A 2020 review by Project Drawdown revealed that reducing food waste is the most effective thing we can do to curb climate change. And when you think about it. that makes total sense. Imagine the carbon released while cutting down trees for farmland, the fuel we burn for ships and trucks, the amount of electricity used in production, delivery, and service, and the methane emitted by food in landfills.













The potential impact of reducing food waste is huge. By redistributing surplus food, ensure that none was produced in vain.

Their #FLWDay campaign marked the lead-up to the most important climate conference in many years- COP26 in Glasgow. Initially, Too Good To Go mentioned being happy to see some of the progress made at COP26, including

- All nations remaining committed to keeping the 1.5C total warming goal alive.
- The Glasgow Leaders' Declaration on Forests & Land Use, stresses the importance of biodiversity and sustainable land use for a greener, cleaner future.
- The Global Methane Pledge, promises to cut emissions by at least 30% by 2030.
- The Glasgow Declaration is supported by us, pushing city governments to adopt sustainable food policies.









THE GREEN IMPACT **MEASUREMENT PROCEDURES** AND METHODS



Too Good To Go is proud to be B corp certified, meaning that their business is recognized not just for its ability to make money, but also for its ability to do good. This is not a "one-and-done' process. In December 2021, they took a mock assessment to check their progress and see how they can do better. Despite moving up a size category and assessment questions changing, they landed a draft score of 84.3, a significant improvement from 81.6 in 2019. They are currently working towards 100 points in 2022.

It is also worth mentioning that the median score for ordinary businesses completing the assessment is 50.9.

Certified B Corporations are legally required to consider the impact of their decisions on all of their stakeholders - a model known as stakeholder governance. The B Corp legal framework allows companies to protect their mission and ensures that the company will continue to practice stakeholder governance even after capital raises and leadership changes. The legal framework also provides more flexibility when evaluating potential sales and liquidity options.

The legal requirement ensures that B Corps remain legally accountable to all of their stakeholders - workers, communities, customers, suppliers, and the environment - not just shareholders.













#### Why this matters

Because of legal precedents and cultural expectations, businesses are often expected and required to make decisions exclusively through the lens of profit maximization for the benefit of the owners and shareholders - a concept known as shareholder primacy. B Lab considers shareholder primacy to be an obstacle to creating long-term value for all stakeholders, including the owners and shareholders themselves. We believe overturning shareholder primacy is integral to making our economy work for everyone.

But how do we overturn shareholder primacy? Integrating stakeholder governance into a company's DNA ensures that it stays legally accountable to a broad purpose and a commitment to consider the interests of all stakeholders. Stakeholder governance demonstrates that a company is not only committed and accountable to creating lasting value for all stakeholders but is credibly using its business as a force for good.











THE GREEN IMPACT **MEASUREMENT RESULTS** DISSEMNIATION **METHODS** 

> Too Good To Go spoke at many events, lit up Toronto's CN Tower in their colors, and was featured on trams, buses, metro lines, and even morning TV shows.

> During COP26 in Glasgow, they realized food waste was again neglected from the major talks. Therefore, they drew Londoners' attention to the link between food waste and climate change with an installation along the Thames, then kickstarted a petition asking PM Boris Johnson to consider food waste in climate targets. The petition was signed by over 20,000 people and was hand-delivered to 10 Downing Street.











**POINTS OF** LEARNING FOR **GREEN IMPACT MEASUREMENT** 

- Too Good To Go is one of the best examples of social enterprises around the world. With their main mission, they were able to connect many restaurants and stores with people in need. Due to the app's effective structure, people can easily use it and contribute to the prevention of food waste.
- Too Good To Go is working with many startups from different countries and extending their partnerships to reach more people.
- Despite having many quantitative data, Too Good To Go is aware of the importance of measuring their impact. Every year, they work to improve and get better results at assessments. B corp certified, meaning that their business is recognized not just for its ability to make money, but also for its ability to do good.











International project (2022-2023)

# Green Impact Measured





### Community Wood Recycling

Financed by:



Nordplus

Partners:













Community Wood Recycling is a nationwide network of 30 social enterprises that have been recycling wood since 1998, collectively forming Community Wood Recycling and collecting around 20,000 tonnes of wood every year. They are helping our planet by saving carbon and fighting unemployment by giving workplace opportunities to disadvantaged people.















Around 5 million tonnes of waste wood is produced every year in the UK. Conventional wood recycling via skips results in the destruction of this valuable resource. Without readily available affordable reclaimed wood consumers turn to virgin timber for their DIY needs. Skip-based collection methodology results in multiple movements of heavy vehicles with attendant CO2 and particulate emissions.

Community Wood Recycling collects waste wood and sorts it for reuse. This means that the timber that can be used again is saved, while that which has no reuse value is recycled by chipping. As the only large-scale commercial alternative to the wholesale chipping of unsorted wood, it promotes the circular economy. The collection service uses lightweight 3.5-tonne trucks, resulting in a reduction in emissions of both CO2 and pollutants over conventional skip-based services. It estimates that each tonne of wood rescued saves 499kg of CO2 and that the saving per journey because of our smaller vehicle is 3.2kg.

The social enterprise model gives people who have faced long-term unemployment or social isolation the chance to develop the skills and confidence they need to get back into work, benefitting individuals and communities.















#### e wood from the tre



Founder Richard Mehmed first realized the potential of waste wood in 1998 when he was building a playhouse for his daughter. He spotted some ideal wooden sheets piled outside a local factory, and when he asked if he could take a couple of them for his playhouse he was shocked to find the pile was just a fraction of the excess wooden packaging they had waiting to be incinerated. Richard came up with a plan to cycle more wood out of the waste stream, and the Brighton and Hove Wood Recycling Project (later to be known as The Woodstore) was born. The project quickly attracts media attention, and more volunteers become involved.

Richard realizes that many of them have faced challenges and that volunteering in a community wood recycling project can be a path back to work and self-confidence. This leads to the second part of the recycling project's mission - to give opportunities to disadvantaged people and help them back into employment.













"Working together is the best way to advance our goals of a fairer and more sustainable society".

- Process CIC: Protecting the mental health of THEIR workers, who often come from groups at higher risk of mental illness and emotional strain, is one of their key priorities. The process is a mental health support service for Community Wood Recycling staff and volunteers.
- Social Enterprise UK: Social Enterprise UK is the biggest network of social enterprises in the UK and a leading global authority on social enterprise, coordinating with industry and government bodies to advance the cause of social business in the UK. Community Wood Recycling is a member of SEUK and participates in initiatives such as the Buy Social campaign.
- Wood Recyclers Association: The WRA is the trade association for the waste wood recycling sector and works on behalf of its members to represent their needs at the highest level within the Government and provide advice and support on issues affecting them.
- Social Firms Europe CEFEC is a European network of Social Firms, Social Co-operatives, NGOs, and organizations that all share the objective of creating paid work for disabled and disadvantaged people, working to promote the model of social business at EU, national and regional levels.















They provide a commercial waste wood collection service, working with most of the country's top construction companies and with businesses in all sectors that produce timber or pallet waste. Their wood stores stock everything from timber for DIY to furniture for your house or garden – they even make bespoke products to order. There are 30 Community Wood Recycling stores across the country,

stocking a wide range of good quality, competitively priced reclaimed timber for all your DIY and building needs. Many of their enterprises provide shop fitting services including custom tables, seating, displays, flooring, wall paneling, and more.

In addition, they work with local people, bringing men and women who are marginalized into a supportive workplace. They become part of their team and gain training and work experience. They see them flourish, moving from social isolation, loneliness, and lack of confidence to paid work, shared achievements, and the sense of camaraderie that comes from working together to help the environment.













Their environmental mission is to build toward a circular wood economy and reduce greenhouse gas emissions.

In 2020 the UK generated around 4.5 million tonnes of waste wood. Around 90% of this was processed by the high-volume wood recycling industry into biomass for power stations, composite sheets like MDF, animal bedding, and landscape surfaces, and the majority of the rest went to landfills. Although it's great to see how far recycling in this country has come in recent decades, they believe it can get better.













### How Community Wood Recycling meets its environmental goals

Efficient transport

Their lightweight collection vehicles consume only a quarter of the fuel used by skip lorries per tonne of wood collected. They also minimize travel distance by hand-loading to maximum capacity whenever possible, reducing the number of trips required.

### No landfills

When wood rots it creates methane, a potent greenhouse gas, with each tonne of wood in a landfill creating the equivalent of 800kg of CO2 in methane emissions. They divert wood away from general waste streams, and they don't send any of what they collect to landfills.

#### Reuse

Recycling is better than landfilling, but chipping wood limits its use to heavy industries like biomass and chipboard manufacturing. By sorting the wood, they salvage everything that can be reused as-is, putting it straight back into the resource loop without the need to recycle it.













### How Community Wood Recycling meets its environmental goals

### Upcycle

As well as reclaimed wood for reuse, it can be 'upcycled' into more complex products rather than 'downcycled' into raw materials. Their workshops and customers find ingenious ways to turn waste wood of all kinds into quality furniture and products.

### Displace logging

Around a million cubic meters of illegal wood enter the UK each year, both as timber and wooden products. Reusing the wood that's already here helps reduce the need to import it from sources contributing to deforestation, a major driver of climate change.

#### Local

There are only a handful of bulk wood recycling locations in the UK, meaning a lot of wood waste has to be hauled across the country or shipped overseas. With a network of small hubs focussed on local reuse, they minimize travel distance and associated congestion and pollution.



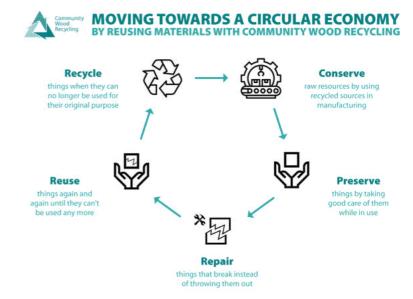












### The circular economy

In conventional economics, raw materials are extracted and transformed into products, which are then used and thrown away. This is a linear economy, going in one direction, so it's unsustainable – eventually, everything will end up as waste. The circular economy is a vision for eliminating waste by looping all resources back into the system in a self-sustaining cycle similar to a natural ecosystem. Finding this balance may take time, but by following a few simple rules, they can move much closer to this kind of sustainable circularity.













I contacted Elizabeth Green who is Development Manager at Community Wood Recycling to learn more about the way their measurement process. Here is her response:

"We have bespoke computer software which allows our members to upload their statistics on a monthly basis, and this gives us the data we need for our impact reports. We don't use any external tools or programs. We email impact reports to our clients on a quarterly basis and produce site-specific impact reports on request. We also produce reports for each of our member enterprises. These reports and our national report are publicized on social media and marketing materials". In response to increasing standards for environmental and waste safeguards amongst their clients, they produce reports showing not only the quantity of waste collected from each site but what it was used for. This page on the website shows they calculate their impact. https://communitywoodrecycling.org.uk/our-measures/











THE GREEN IMPACT **MEASUREMENT RESULTS** DISSEMNIATION **METHODS** 



Community Wood Recycling has been very active in media and in encouraging other people and businesses on their very important mission. Even from the very beginning of their work they quickly attracted media attention and won the newly inaugurated National Social Enterprise of the Year Award. With funding from WRAP and the Esmee Fairburn Foundation, Richard launches the National Community Wood Recycling Project (NCWRP) to franchise the model nationwide. Due to their hard work nationwide, they won various awards throughout the years.

In 2012, they were finalists in the London and South East category of the Construction Excellence Awards, semi-finalists in the NESTA Waste Reduction Challenge, 'Cut the Carbon' Finalist in the Construction Skills Building Awards, Materials Recycler of the Year (SME) at the National Recycling Awards and many others.

In 2014, at the 28th Social Firms Europe CEFEC Annual Conference in Switzerland, Richard Mehmed presents the Community Wood Recycling model and urges European social entrepreneurs to develop similar ways of tackling wood waste in their countries.

In 2020, while visiting EMERGE to recognize the Manchester-based social enterprise's work supplying food to local people during the coronavirus crisis, they had an opportunity to meet with the Duke and Duchess of Cambridge.











There are several key points of learning - from the first years of the business, Community Wood Recycling has been actively participating in competitions, events, and awards. It is a great example of the importance of networking and establishing your presence, especially as a social enterprise in the field.

Secondly, in relation to the mentioned above - the importance of stakeholder engagement by involving stakeholders, such as employees, customers, and suppliers, in the measurement process can provide valuable insights and increase buy-in for sustainability initiatives.

And finally, a need for a holistic approach: Green Impact measurement should take into account a wide range of factors, including environmental, social, and economic impacts.







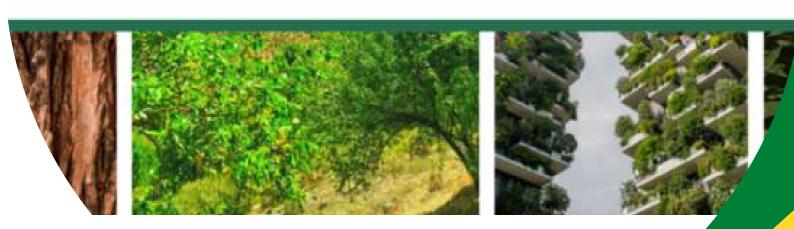






International project (2022-2023)

# Green Impact Measured



## **MOTATOS**

Financed by:



Partners:











Motatos are made from an imperfect variety of tomatoes. But why omit a letter and misspell "tomatoes"?

According to Motatos, the domain was affordable and readily available. It aligns quite well with their core belief that being completely awesome doesn't require being completely normal. Just because something is imperfect shouldn't cause it to be wasted.













Motatos make and always abide by the following three promises:

- On all fronts, they constantly strive to be better and more sustainable.
- They encourage customers to get in touch with any ideas or suggestions for how they might improve; and they guarantee a response.
- Eliminating food waste and all forms of waste is their long-term objective. They occasionally have to sell goods that are past their bestbefore dates. But never unsavory or inedible products.













The goal of Motatos is to make it simpler to combat food waste. They purchase food from producers directly that would otherwise be thrown away and sell it to customers at extraordinary savings. Being environmentally friendly is simple; all you have to do is place an order.

The decision to purchase from Motatos rather than from another vendor helps the environment avoid needless stress that would otherwise be lost. An order with Motatos typically prevents the emission of over 9 kg of needless CO2.













Food is thrown away a lot unnecessarily all over the world. A can of chopped tomatoes, the final sip of coffee, or pasta that is a few weeks past its best-before date.

Motatos' long-term objective is to eradicate food waste as well as waste in general. Sometimes selling food that has passed its best-before date is necessary. But the important factor is that Motatos never offer for sale food that has gone bad or is no longer edible.











Erik, Kalle, and Uffe, three friends from Sweden, founded Motatos in 2013. They had witnessed large amounts of food being thrown directly into the bin, despite the fact that there was nothing wrong with it. At the same time, the climate debate had gained traction in 2013. So saving a lot of food while also helping the environment was the ideal plan.

The three friends sensed it was the start of something big. They set up shop in their basement by creating an online platform, and it took off from there. As more and more orders came in, they found themselves spending days and nights packing shipments. Their idea grew into a movement that attracted climate heroes and bounty hunters from all over the world.











Motatos is an online-shop like any other you know. You add the items you would like to your basket, do the checkout and get your items delivered. Compared to items in a typical supermarket, some of their products have a shorter best before date. This is what is necessary to do to stop them from being wasted at the suppliers.

In order to stay ahead of the curve, supermarkets frequently demand long best before dates. This is because goods frequently travel through extensive logistics chains before they are placed on the shelves of the neighborhood supermarket. On Motatos' website it is possible for customers to find the type of products they are looking for, and to easily find the best before dates too.





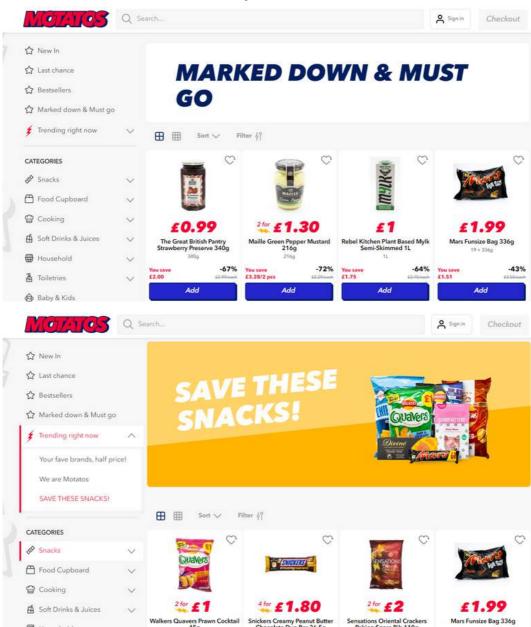








Examples from: www.motatos.co.uk



Financed by:

Partners:













As previously introduced with the case of Motatos, customers reduce the carbon foodprint when doing their shopping with them, but this statement must be backed up by the evidence. Motatos has therefore had the Swedish Research Environment Institute assess food waste and thereby also the impact of Motatos.

10.5 kg CO2e is how much an average order at Motatos saves the environment. It is equivalent to charging you mobile phone 1200 times.













Motatos believe that the magnitude of the task ahead is stark, but it does not have to be overwhelming. It is still far more important to do something than nothing. While there is still a need for new technologies and cleaner energy solutions, Motatos believe and prove that we can reduce emissions by shopping wisely and eliminating unnecessary waste, as food waste accounts for a staggering 10% of global greenhouse gas emissions.

Their green impact is therefore extremely important for the food consumption market, but also in changing the consumer's perception and shopping behavior.











THE GREEN IMPACT **MEASUREMENT PROCEDURES** AND METHODS

The Swedish Environmental Research Institute has calculated the green impact based on standard orders from all countries Motatos operate in: Sweden, Finland, Denmark and Germany. The UK calculations are still to be made.

These calculations are based on research that states that the impact of recycling is calculated as the difference between recycling and purchasing a product new. The production of a new product is avoided when a product is reused. However, the relationship is not entirely one-to-one because some energy could be recovered even if the product was discarded, such as through incineration or biodegradation.













Motatos purchase groceries in bulk and sell them online at a much lower price (20-90% lower). They are saved and delivered by Postnord. Motatos currently does not have any fresh products or in-house production. The goal of the green impact assessment was to inform Motatos customers about the amount of climate impact (CO2-eq) that is "saved" by purchasing food from their service. The expected outcomes are to achieve a better understanding of the environmental benefits of a food waste redistribution service. Simplified life cycle analyses (climate impact) of approximately 20 products were performed as part of the assessment.











THE GREEN IMPACT **MEASUREMENT** RESULTS DISSEMINATION **METHODS** 

Chocolate cakes, drinks, beans, dishcloths, sweets, honey, crispbread, pastilles, panty liners, and chips make up the Danish shopping cart. The total weight is 12.1 kg, and the estimated climate impact is 10.3 kg CO2eq (see Table 2). Motatos's service will result in a 9.1 kg CO2-eq gain. In the Danish shopping cart, it is the beverage with the greatest environmental impact and the greatest mass. The milkshake was also heavier than other goods, and its environmental impact was second only to beans and honey in the Danish shopping cart. Panty protection has the greatest environmental impact per kilogram of product, followed by packaged cooked beans and chocolate cakes.











Below is the table of calculations done based on the representative shopping carts in Denmark:

Amount	Package	Net weight [g]	total volume [ml]	other [nr]	Product example	Country	kg CO₂-eq	kg	kg CO <sub>2</sub> -eq
6	chokladkakor	35			Marabou Dark milk 35g	DK	1.67	0.21	0.35
10	flaskor dryck	500	500		Vitamin Well Forest Rush 500ml	DK	0.66	5.00	3.31
12	flaskor proteinmilkshak e	330	330		Nutra-Go Chocolate Milkshake 330ml	DK	0.65	3.96	2.57
5	paket bönor	150			Bonduelle økologiske sorte bønner 150g	DK	2.18	0.75	1.64
1	paket disktrasor	78.5		5	5-pak Mikroplastfri karklude	DK	1.20	0.08	0.09
1	paket godis	80			Kinder Suprise 80g	DK	0.60	0.08	0.05
2	paket honung	400			Økologisk & fairtrade honning 400g	DK	1.01	0.80	0.81
2	paket knäckebröd	240			Frukost Knækbrød	DK	1.18	0.48	0.57
6	paket pastiller	25			Dent Crush Solbær 25g	DK	0.60	0.15	0.09
2	paket trosskydd	38		20	Always fresh & Protect 20pack	DK	3.03	0.08	0.23
3	påsar chips	150			Sörlands Havsalt & Peber Chips 150g	DK	1.09	0.45	0.49
4	påsar Fruktsnacks	25			Frugtfiduser Banan 25g	DK	0.70	0.10	0.07

Climate benefits of using Matsmart's services (ctfassets.net)

Motatos's environmental benefit is thus calculated as net climate impact, which is the difference between the climate impact of food production and the potential energy recovery during digestion:

#### Production\_Impact - Energy\_Recovery = Net\_Climate\_Impact

Whereas Production\_Impact represents the climate impact of the production stage, such as primary production, retail, packaging, and transportation, and so on. If a product is not used during its useful life, it will be sent to incarnation or digestion. Energy\_Recovery is similar to energy recovery through digestion or incineration. The difference between climate impacts from production and potential energy recovery is calculated as Net\_Impact, which resembles a product's final net climate impact.













Motatos is a great case of a company with a green mission and proven green impact. Calculating green impact is not an easy task or project, which is why it is advised to use companies with proven experience in this to avoid misleading customers. The report done by the Swedish Environmental Research institute also had some concluding remarks:

- For individual products with similar properties, there is frequently a link between the highest weight and the greatest climate impact.
- Chewing gum, socks, cotton tops, and panty liners stood out the most in terms of kg CO2 equivalents per kg of product. There is a chance that the consumer will switch to more resource-efficient products.
- Further research could establish a link between calorie and nutritional content and climate impact.
- Continued research into consumer behavior and rebound effects would improve business transparency.













International project (2022-2023)

# Green Impact Measured





### **TAKATAKA**

Financed by:



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Takataka is a Ugandan company that converts plastic waste into high-quality, low-cost building materials. They are creating jobs, improving the environment and public health, and completing a circular economy loop.

Because polyethylene terephthalate (PET) bottles have a very low recycling value, discarded plastic soda and water bottles are burned and littered across streets and fields in Uganda. Because of the chemical properties of PET, no industries in Uganda can use recycled PET flakes. Ugandan government officials say they are "really stuck and desperate" because they have no solution for PET waste since China and other Southeast Asian countries have stopped importing plastic waste.











Takataka solves this problem with locally manufactured, cutting-edge technology that converts plastic waste into marketable goods. They concentrate on the construction sector because Uganda has an 8 million-unit housing shortage and the \$3 billion Ugandan construction industry is growing at a rate of more than 10% per year.

Takataka's first-generation wall tiles are more than twice as durable as comparable traditional ceramic tiles, and their first-generation pavers outperform concrete pavers by a factor of more than 14.

Similar issues with plastic waste and building supplies exist in Uganda and other East African nations. Because the cost of the locally made machines is only 1/4 that of imported machinery, Takataka is able to expand by setting up shop in cities all over the developing world.













Takataka has one vision: to transform the world into a place where waste is a resource and communities are getting stronger. They believe that a circular economy approach is important, where eliminating waste can also create more jobs. Takataka highlights 8 different values that their enterprise is focusing on:

- Community and compassion
- Innovation and teamwork
- Transparency and accountability
- Integrity and professionalism
- Loyalty and passion
- Generosity and service
- Humility
- Environmentalism











### FOUNDERS, STAKEHOLDERS, BENEFICIARIES

Takataka is founded by Paige and Peter. Paige began researching plastic waste when she began graduate school at UC Berkeley in the fall of 2017 because she wanted to work on issues that affected her friends in Uganda. She collaborated with Gulu University students to survey more than 200 people and assess the city's plastic waste. Paige also met Peter, who was educating people about plastic waste through the AfriGreen Sustain organization he founded. Together, they formed Takataka Plastics, which opened its doors in January 2020 with the hiring of three employees, construction of a prototype machine, and receipt of Takataka's first order. Currently, Takataka Plastics cannot produce enough of their wall tiles to meet demand, so we are working to expand operations in Gulu City.













Takataka, which is Swahili for "waste," offers a recycling service that is currently lacking, generates income for the marginalized, and lessens environmental and health risks in areas where waste is currently burned or left lying around. They are creating opportunities for healing for trauma survivors while also creating ground-breaking technology to safely process plastic waste in Uganda. They are also changing people's perceptions of plastic waste from untouchable, filthy "rubbish" to a potential resource impacting their environment.

Takataka's main products are recycled PET tiles, which they manufacture on a large scale. The tiles are stunning and extremely durable. People are praising them and finding it hard to believe that they are made from soda bottles and waste water. Compared to the current ceramic tiles, theirs are much more resilient and won't crack when dropped.







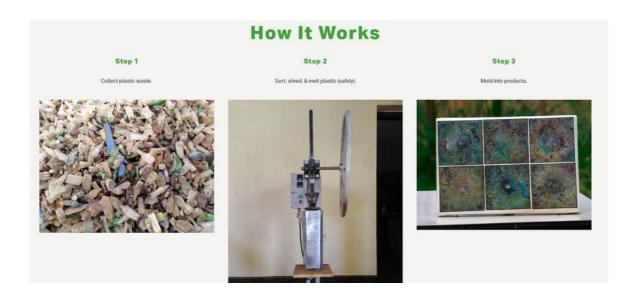






Examples from: www.takatakaplastics.com



















Takataka is focusing on the Triple Bottom Line in their impact approach: People, Planet and Profits. They are providing job opportunities to the vulnerable youth through early intervention and basic life skills. They provide a new recycling service which previously didn't exist in Uganda, and are with the service reducing CO2 and plastic waste. They are furthermore creating incomes for vulnerable groups and both support and boost local businesses. The environmental and economic impacts in the local community are equally important to Takataka.













Motatos believe that the magnitude of the task ahead is stark, but it does not have to be overwhelming. It is still far more important to do something than nothing. While there is still a need for new technologies and cleaner energy solutions, Motatos believe and prove that we can reduce emissions by shopping wisely and eliminating unnecessary waste, as food waste accounts for a staggering 10% of global greenhouse gas emissions.

Their green impact is therefore extremely important for the food consumption market, but also in changing the consumer's perception and shopping behavior.













2022+Impact+Report.pdf (squarespace.com)

### **Impact Since** 2020



from entering the environment







**ONLY** recycler of PET plastic waste in Uganda



26 of whom are vulnerable youth sales, and donations (On avg support 5 dependents)









Takataka is a different type of business, because their model is entirely local and therefore no transportation for long-distances. Their technology ensures the safety of their employees and a low cost model. Their impact measurement methods are fairly simple as shown in the model above. They are keeping track of all measures, both people, planet and profit.





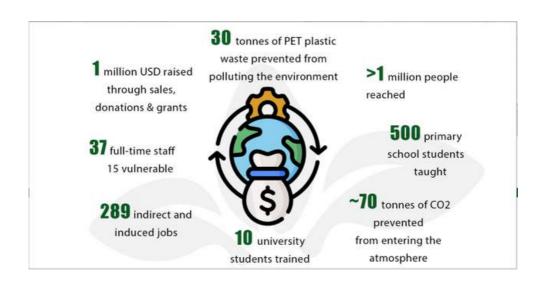








Takataka have dissiminated their impact results on both their website and a full report made for 2022, including their ambitions for the upcoming year. They focus greatly on this in all section of their website, and it proves that their awareness of their impact is high and so is the importance of disseminating it.

















Takataka is a newer company on the market, but it definitely is a case of a company with a green impact and more potential to come. They are targeting a huge global problem of plastic waste and recycling and they are the first company in East Africa to recycle PET, which makes them innovative and unique.

Their methods to green impact measurement are so far simple, but important and clearly defined and disseminated. Their awareness around impact reports and measurement is noticeable. A learning from this case is also that green impact is not only about green products - it is also about green education.





















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