

Impact Report



QUADIA CAPITAL
REGENERATED

Supporting the Transition Towards a Regenerative Economy

March 2020



Table of Contents

1. Messages from... p. 5
2. Our Vision Transitioning Towards
a Regenerative Economy p. 8
3. Our Theory of Change p. 10
4. Our Sectors of Focus p. 11
5. Our Impact Management Framework p. 15
6. Impact Across Portfolio p. 19
7. NourriTerre p. 20
8. Case Examples p. 22

1. Message from... The Managing Partners & the Founder

Left to right

AYMERIC JUNG

Managing Partner

DANIEL VON MOLTKE

Managing Partner

GUILLAUME TAYLOR

Founder



“

At its inception in 2010, the purpose of Quadia was to generate positive impact through purposeful investing. Nearly ten years on, the reasons for what we do and why we do it have not changed, even if **2019** has been a year of great evolution for us.

At the core of this evolution is our shift to focus our impact and investment approach towards a new economic model that moves away from the current, degenerative take-make-dispose model, to one that is **regenerative by design**. Rising inequality, climate change, social disruption, and increasing pressures on ecosystems lead us to realize that incremental change is not enough. Through our investments, we can support impactful companies operating in key sectors that are helping to create this transition to a **regenerative economy**. This will contribute to the realization of the United Nations Sustainable Development Goals (SDGs), and create a more resilient, equitable society that can live within the limits of one planet.

”

This report describes our theory of change, our new impact approach, and the key sectors of focus for our direct equity and debt investments. We also highlight impact creation across our portfolio, which will be reported on more systematically from 2020 onward, as we introduce our current approach across the existing portfolio.

We sincerely hope that you enjoy reading about Quadia's evolution and our shift to base our impact investing framework on supporting the transition to a regenerative economy.

- During the past year, **we launched a joint impact investing fund** with the Belgian Bank Degroof Petercam, focused on the **regenerative economy**;
- Defined our **Theory of Change** around the support of the transition towards the regenerative economy;
- **Updated our impact framework** based on four core impact objectives: fostering circular production and consumption, improving natural resource use, promoting fair value chains and supporting local communities;
- **Added to our team** which now comprises more than ten people, supporting impact, investment, communications, and investor relations.

2010
Founding of Quadia

200

EUR million invested

4

Impact Objectives to accelerate the transformation towards a regenerative economy

+40

Companies, Projects, and Funds

↑21

Staff, Board members and Advisers

HIGHLIGHTS

1. Message from... The Chair of the Quadia Impact Committee

CHERYL HICKS
Executive Director, The Toilet Board
Coalition
Member of Quadia's Board of Directors
and Chair of the Impact Committee



“

We need transformation across many sectors to meet the United Nations Sustainable Development Goals (SDGs).

Today, sustainable management of resources and development is no longer enough. We are facing a global gap in the resources needed just to sustain current production and consumption patterns, and an even bigger gap when we consider rates of population growth and the economic development that will end poverty. In the next decade we need to not only sustainably manage existing resources and materials, we need to **regenerate** them. There is a new wave of innovation and business solutions applying a circular and regenerative approach - regenerating resources and materials. These businesses will win in tomorrow's markets. Financing the regenerative economy is critical to future business growth and sustainable development. Quadia's investment strategy to support companies to become regenerative and the innovations that will enable regeneration has unique potential for significant impact.

Quadia's Impact Committee brings together global experts across the regenerative economy - in the areas of circular economy, energy, food, health and development - to ensure Quadia's investments reflect the best opportunities to support a regenerative economy.

We are pleased to present the **2019 Impact Report**, highlighting Quadia's truly transformational approach to supporting the transition to a more inclusive, distributive and regenerative economy within the limits of one planet.

”

2. Mission, Vision & Values

Quadia is a pioneer investment company allocating private and institutional capital into investment strategies that create positive social and environmental impact.

The concept of Impact is becoming increasingly used in politics, economics and finance, sometimes bringing inconsistencies and confusion at a terminological level. It not only relates to how we select companies that bring impactful solutions but also involves informed communication on our Theory of Change as well as support in the field.

Our vision is **of a circular and regenerative economy within the means of one planet**. We invest across all asset classes, providing financing to companies and funds. We actively support investees to further **scale-up their business models and their impact creation**. By using the regenerative economy as our framework, we help to enable an economic system that can meet human and social needs within the means of one planet, achieving qualitative growth, autonomy, resilience and efficiency.

This framework provides a compelling answer to the increasingly recognized need for systemic change. We believe in more than just sound financial investment. Our vision is of **capital regenerated**, from a holistic view, building also human and natural capital, which are constituents of the new paradigm shift.

Since its founding in 2010 in Geneva, Switzerland, we have invested EUR 200 million and actively manage a diversified portfolio of more than 40 companies, projects, and funds.

At the heart of Quadia are our core values of integrity, authenticity and intention, inspiration, collaboration and respect for living beings and nature.

2. Transitioning to a Regenerative Economy

Humankind has long bypassed the biological carrying capacity of the planet. According to the Global Footprint Network, we are now consuming the biological resources of 1.7 planets a year. In fact, May 10, 2019 was Earth Overshoot day in Europe. By this date Europe's population had already used up a year's worth of resources in just over four months and is the remainder of the year living outside the planetary boundaries.

As the global population expands, development rises, and more people join the middle class, we know that the consumption of goods and services also grows, utilizing more of the earth's precious resources. Over the last four decades, the global use of materials almost tripled, from 26.7 billion tons in 1970, to 92.1 billion tons in 2017. In order to sustain the production and consumption patterns of the nearly 10 billion people we will have on Earth we are forecast to require over 180 billion tons of materials by 2050.

And yet, even though we overconsume the earth's resources, we cannot currently meet the basic human needs of the entire population. For example, globally one-in-nine people currently go to bed hungry, while one-third of food produced is wasted.

Accenture estimates that today's business practices to sustain our existing production and consumption patterns will create a global gap of eight billion tons between the supply available and demand needed for natural resources by 2030. This translates to \$4.5 trillion USD of lost economic growth by 2030 and as much as \$25 trillion by 2050.

We believe a new economic model is needed. The support and guidance of key thought-leaders and impact partners is essential in shaping this refining vision, such as Guibert del Marmol, who is an author, Co-Founder of the Lunt Foundation and Chair in Regenerative Economy at the Louvain School of Management. He has helped guide our impact and investment approach on supporting a new economic model that is regenerative by design.

5 Elements of the Regenerative Economy



Local
Empowering local production and consumption systems, creating partnerships in local communities, and being close to consumers



Collaborative
Fostering peer-to-peer exchanges and rethinking proprietary access to be based on mutual trust



Circular
Redesigning innovative production chains to eliminate waste, all reusable in other production chains, and closing material and product loops



Functional
From an ownership model to a usage model which values long product life cycles



Bio-inspired
Using natural cycles as inspiration for business models

3. Our Theory of Change

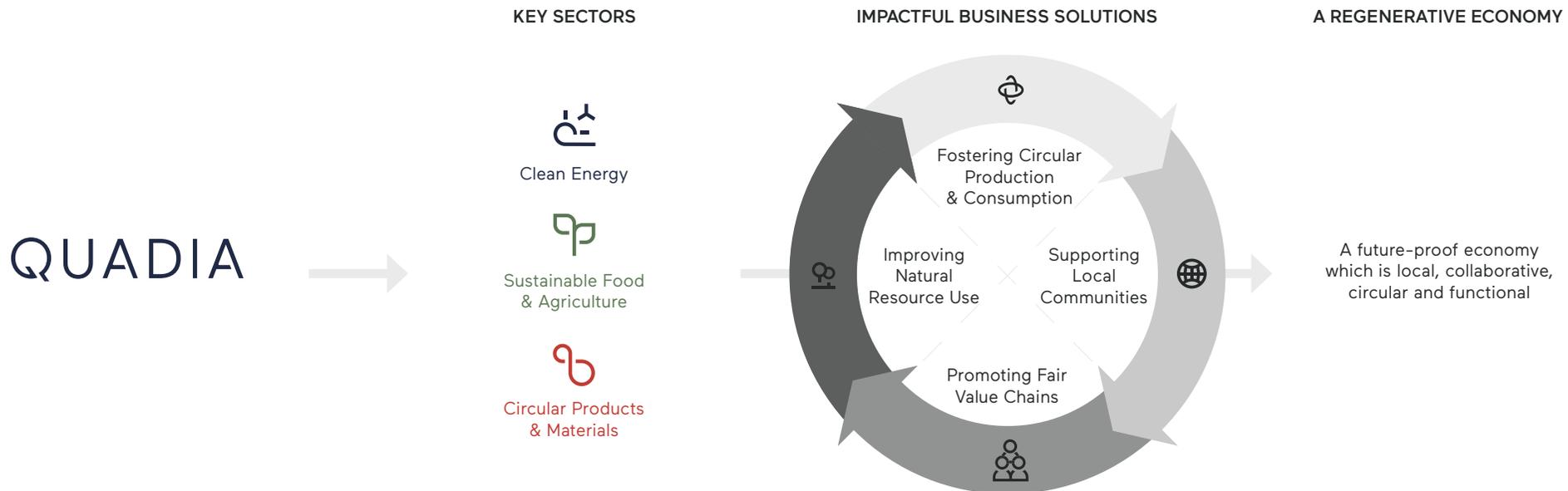
Economic growth aspirations are outpacing global resources supplies and creating significant global challenges. Our belief is that a new economic model is needed – one that moves away from the current, degenerative linear take-make-dispose model, to one that is regenerative by design.

By using a bottom-up approach, we invest in transformative companies that provide impactful and innovative business solutions that strengthen the transition towards a regenerative economy and a one-planet world.

This transition will be led by companies that are re-inventing key sectors that meet critical societal needs. Generating clean energy, producing sustainable food, and favoring circular products and materials are fundamental to this shift, these sectors are also characterized by dynamic and growing markets.

We take an active and engaged role with our investees to collaborate and contribute to shaping, directing and maximizing impact creation over the duration of our investment period.

Quadia... ... invests in transformative companies in key sectors that are reinventing our economy... ... and that provide impactful business solutions... ... while strengthening the transition towards a regenerative economy within the means of one-planet.



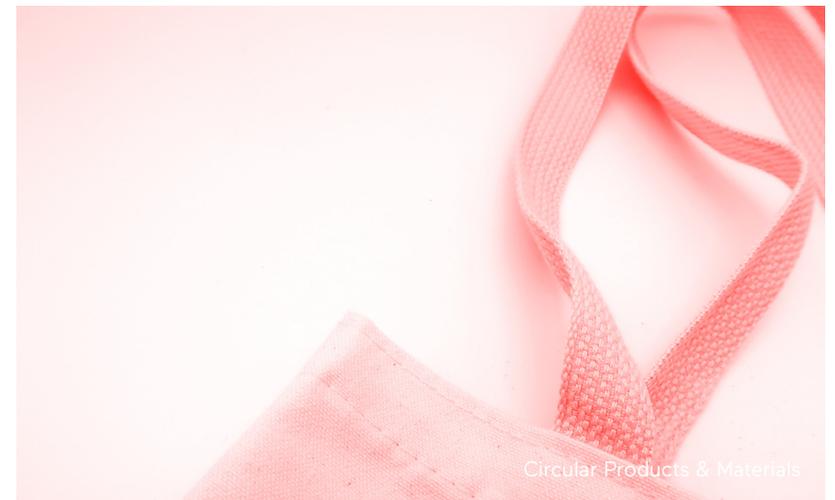
4. Our Sectors of Focus



Sustainable Food



Clean Energy



Circular Products & Materials

Clean Energy

5

Companies supported

+7

Sub-sectors include energy, efficiency, renewable energy, energy storage, alternative fuels, smart grids, smart homes, and e-mobility

The adoption of the United Nations Sustainable Development Goals (UN SDGs) in 2015 outlines actions for universal energy access, and to substantially reduce air pollution. The Paris Agreement of 2016 further delineates the ambitious climate goal to limit global warming to “well below 2°C” above pre-industrial levels, and to pursue efforts to limit warming to 1.5°C. This requires scaled-up, rapid implementation, particularly in the energy sector which generates around two-thirds of global greenhouse gas emissions. Decarbonizing the power sector is a fundamental step to reduce global emissions, especially in an increasingly electrified world.

The International Energy Agency believes the world needs a clean energy revolution in order to break the dependence on fossil fuels. Such a revolution would enhance global energy security, promote enduring economic growth, and tackle challenges such as climate change. It can break the long-standing link between economic growth and CO2 emissions.

Clean energy includes renewable energy, electric vehicles, biofuels, and smart energy systems in which renewable energy production, infrastructure, and consumption are integrated and coordinated through energy services, active users and enabling technologies. Clean energy promotes cost-effective, sustainable and secure energy systems and enables technologies central to the energy transition, based on decarbonizing, decentralizing and digitalizing the energy sector.

Our focus in this sector is on energy efficiency, renewable energy, energy storage, alternative fuels, smart grids, smart homes and e-mobility.

CO2 emitted from coal combustion was responsible for over 0.3°C of the 1°C increase in global average annual surface temperatures above pre-industrial levels in 2018. This makes coal the single largest source of global temperature increase.

14% of the global population did not have access to electricity.

The share of renewables in meeting global energy demand is expected to grow by 1/5 in the next 5 years.

Sustainable Food

31

Companies supported

+5

Sub-sectors include regenerative agriculture, local food systems, nutritional quality, alternative protein, and food waste

In order to feed the nearly 10 billion people on earth by 2050, we will need to radically transform the agriculture and food systems. The food system is currently putting pressure on several planetary boundaries including greenhouse gas emissions, nitrogen and phosphorous flows, biodiversity loss, and water consumption.

Sustainable food and agriculture trends are favoring the development of local food systems, backed by numerous certification and labeling schemes designed to support consumers in their food purchasing decisions. This increased awareness among consumers is leading to dietary shifts towards alternative protein sources and healthier functional food with higher nutritional quality. Flexitarian and vegetarian diets are rapidly expanding in developed countries and constitute an essential part of the solution to feeding a growing and wealthier global population without further depleting our natural resources.

Due to increasing urbanization, food security and access to high-quality fresh food is becoming more of a priority. With the use of technology, innovative companies are tackling these challenges by bringing food production closer to consumers and implementing scalable solutions that address food waste.

We are convinced that prioritizing food quality and biodiversity, combined with a better logistic and more balanced diets (seasonal and plant based) is critical to the solution to sustainable food systems. These approaches increase the resilience of food systems across the entire value chain and help shift consumers towards more local, healthier and high-quality food. By doing so, we can support the reduction of greenhouse gas emissions, help strengthen communities, promote fair business practices, and support local employment opportunities.

Our focus in this sector is in regenerative agriculture, local food systems, nutritional quality, alternative protein sources and solutions that address food waste.

Agricultural activities contribute approximately to 13% of the world's total GHG emissions, the second largest source of emissions by sector.

A major driver of biodiversity loss is habitat loss to make way for agriculture production, intensive monoculture of crops, and livestock production.

1/3 of the food produced in the world for human consumption every year gets lost or wasted. This amounts to roughly US\$ 680 billion in industrialized countries and US\$ 310 billion in developing countries.

1/3 of fish stocks are overfished, more than half have reached their sustainable limit.

Circular Products & Materials

Circular business models have the potential to be instrumental in reducing resource use and mitigating climate impacts, given that 63% of global greenhouse gas emissions are related to the extraction, processing and manufacturing of goods to serve societal needs. Yet, the Circularity Gap report indicates the global economy is only 9% circular today. Therefore, decoupling economic growth from environmental degradation presents an enormous opportunity to transform production and consumption patterns to be in-line with planetary boundaries.

Circular Materials and Products promote products and services that reduce energy and materials use, minimize ecological impacts by decoupling economic growth from environmental degradation, and apply circular economy principles to support a shift in consumption patterns.

Our focus in this sector includes waste recovery, re-use and upcycling, alternative packaging, sustainable fashion, alternative construction materials and consumer electronics.

5

Companies supported

+6

Sub-sectors include waste recovery re-use and upcycling schemes, alternative packaging, sustainable fashion, personal care, and consumer electronics

40% of all plastic packaging is used only once.

6% of global oil production is used to make plastics and only 9% of plastic is recycled.

Less than 1% of the material used to produce clothing is recycled into new clothing, equivalent to a loss of more than \$100 billion of materials a year.

Of total e-waste, 1/4 is made up of personal digital devices such as computers, displays, smartphones, tablets and TVs.

5. Our Impact Management Framework

We have updated our impact management framework to be more fit for purpose and align with Quadia’s theory of change and the transition we are supporting towards the regenerative economy. Quadia’s impact management framework is fully embedded within the investment process, from the sourcing of investment opportunities, through due diligence to investment execution and exits.

Our impact management framework reflecting our vision of impact, is based on regenerative economy principles, and considers the specific macro- and micro-economic context of the companies we invest in. It takes a systematic approach, is based on global standards, aligned with the UN SDGs, and goes beyond them to help steer impact creation towards a regenerative economy.

Quadia has worked with impact partner Steward Redqueen a leading specialized consultancy advising on impact and sustainability. Steward Redqueen has validated Quadia’s impact management approach.

4

Steps to Impact Management are

1. Vision

We filter companies based on alignment with Quadia’s vision, and opportunity to be transformational in our sectors of focus.

2. Impact Objectives

In due diligence, we use our impact indicators to assess the capacity of the company to create positive impact. We then set impact objectives with the investee.

3. Impact Potential

We make an assessment of a company’s risk-return-impact. We use our 4 impact objectives to assess current and future impact potential.

4. Impact Created

Throughout the investment we assess and report on impact, and we use our expertise to actively guide investees to realize their impact objectives.

SDGs Supported by Quadia’s Impact Management Framework and Theory of Change →

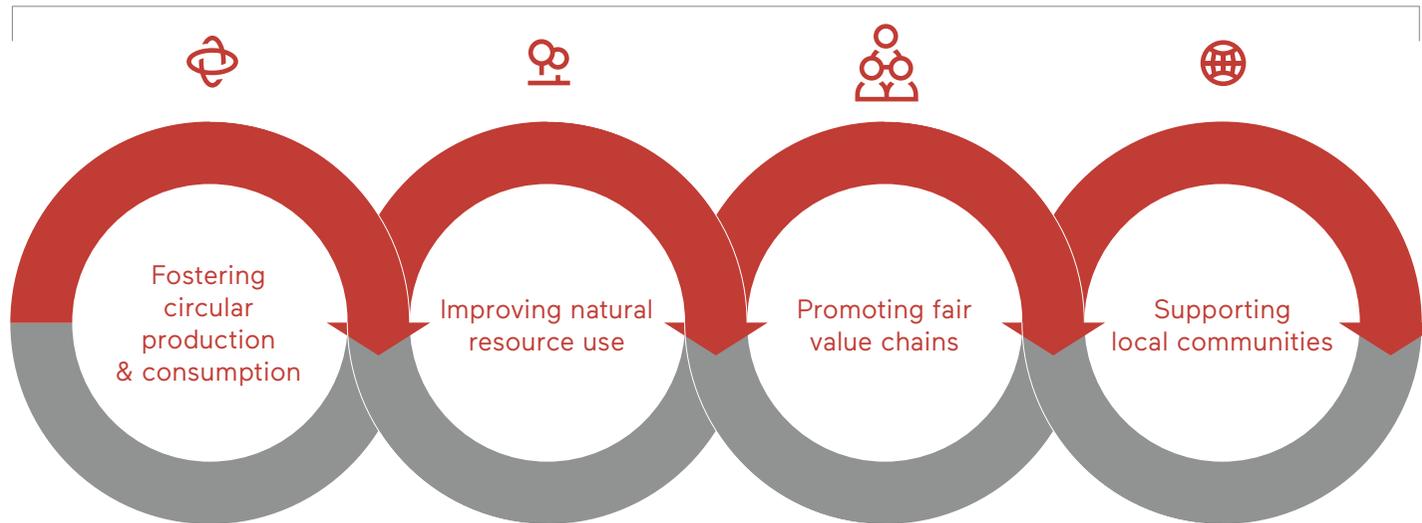


4 Objectives



● Impact Objectives & Indicators

Objectives



Indicators

<ul style="list-style-type: none"> → Circular Supplies → End of Life and Resource Recovery → Sharing Platforms → Product Life Extension → Product as a Service 	<ul style="list-style-type: none"> → Waste → Renewable Energy → Resource Efficiency 	<ul style="list-style-type: none"> → Fair Supply Chain Management → Gender Equity → Pay Parity 	<ul style="list-style-type: none"> → Local Sourcing → Community Development → Producers & Consumers Connections
---	--	---	--

● Quadia Impact Committee

To support the impact management framework's development, we have further extended our Impact Committee to bring together leading multi-dimensional experts to inform our view on the regenerative economy and impact creation across the investment strategy. Chaired by Cheryl Hicks, Executive Director of the Toilet Board Coalition, the committee includes members that each bring specific expertise in Quadia's key sectors and that take on a proactive role in identifying trends, opportunities, challenges, and impact potential. The Committee meets approximately three times per year and provides valuable insight and perspective to Quadia's impact approach.



CHERYL HICKS
Executive Director,
The Toilet Board Coalition
Chair of the Impact Committee



SITARA MERCHANT
Director Market Insights
& Analytics, Aga Khan Agency
for Microfinance



ALISON CAIRNS
Director, Food Reform for
Sustainability and Health
Program (FReSH) & WBCSD



CÉDRIC CHRISTMANN
Chairman of the Board,
Aventron AG



JOSSELYN BLÉRIOT
Executive Officer,
The Ellen MacArthur Foundation

● Our Portfolio

As one of the leading impact investment companies in Europe, we have built a unique portfolio, investing the equivalent of EUR 200 million in over 40 highly impactful companies, projects and funds.

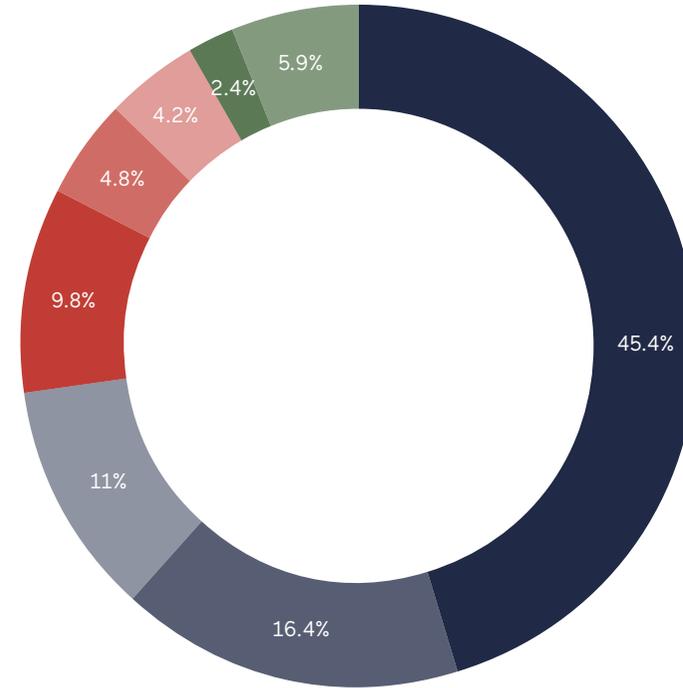
In addition to Quadia’s direct investments highlighted in this report, thematic investment programs such as NourriTerre are also part of the portfolio.

NourriTerre is an investment programme which provides financing and supports entrepreneurs in the agricultural and food sector demonstrating a clear alignment to the principles of organic and sustainable agriculture. By reinforcing the production, transformation, and distribution of healthy, local and organic food, NourriTerre contributes to an innovative, fairer and sustainable economic model able to feed people while taking care of the Earth. NourriTerre’s portfolio is balanced between direct debt investments into companies including Quadia’s innovative approach through indexed debt and royalties and robust and well-managed debt impact investment funds. More details on NourriTerre’s approach and impact can be found at the end of this section.

Partnership with Degroof Petercam

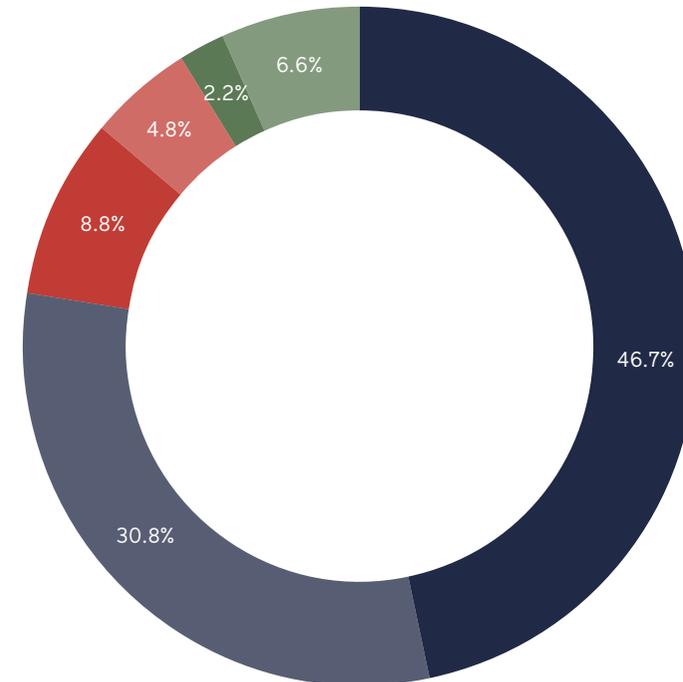
In March 2018, we entered into a partnership with the largest Belgian private bank, Degroof Petercam in order to jointly offer impact investing advisory and investment opportunities to private and institutional clients. This partnership has led to the launch of a dedicated impact investing fund focused on the regenerative economy.

The Fund provides unique access to impactful companies which, through their products and services, contribute to solving today’s social and environmental challenges and to advancing a regenerative economy. The first of these investments, OPES Solutions, and Les Côteaux Nantais are highlighted as case examples in this report. As further investments are made by the fund, as well as through Quadia’s club deal programme, we will report more extensively on the impact of this fund, and across the wider direct investment portfolio. A snapshot of the impact across the existing portfolio is provided in the next section.



PORTFOLIO BY COUNTRY (HQ)

- Switzerland 45.4%
- France 16.4%
- Netherlands 11%
- United Kingdom 9.8%
- Sweden 4.8%
- Germany 4.2%
- Luxembourg 2.4%
- Other 5.9%



PORTFOLIO BY THEME (HQ)

- Smart Energy 46.7%
- Sustainable Food Systems 30.8%
- Alternative Financial Services 8.8%
- Circular Products & Materials 4.8%
- Biodiversity & Conservation 2.2%
- Other 6.6%

6. Impact Across the Direct Investments Portfolio

SUSTAINABLE FOOD

	Kombucha drinks & organic plant-based desserts producer	+90% of packaging are in glass bottles 17% of reduction in food resources used as inputs in the production process
	Socially minded organic bakeries	42 socially inclusive jobs created
	Healthy & sustainable casual food company	80% plant-based vegetarian menu
	Corporate foodservices operator	30% of food is organic, with an 80% medium-term target 60% of food is locally sourced
	Indoor farm modules	Zero food mile → By placing farming units directly in stores and restaurants, greater connections are made between producers and consumers
	Short food Supply Chain Marketplace	83.3% of the product price to go the producer (vs. 15 to 20% in mass retail model)
	Biodynamic fruit producer & processor	40 varieties of apples grown +80% in water savings for fruits cleaning thanks to new machines & processes
	Bio-refinery insects for agro-industries	Zero waste → Policy and low ecological impact goal

CLEAN ENERGY

	Renewable energy producer	476 Megawatts of renewable energy produced in 2018
	High performance electronic components	7,5 million kWh are saved per year thanks to Cavendish components
	Cleantech Company	123 000 households per annum expected to use electricity from waste heat thanks to Orcan technology
	New generation LED manufacturer	1 TWh projected energy saving per year, equivalent to 1.6bn barrels of oil consumed
	Off-grid solar module manufacturer	5 million solar modules sold for applications in Africa, Asia and Europe

CIRCULAR PRODUCTS & MATERIALS

	Smartphone producer	5 years through modular design, phone lifetime is extended to 5 years instead of the three-year average
	Food sharing App	2 km maximum perimeter in which 60% of all items are shared
	Smartphones reconditioning	870 000 Kg of raw materials saved 100% of the collection & refurbishment made locally
	App Digital Food Waste Mgmt	26 194 tonnes of CO2 emissions saved

7. NourriTerre

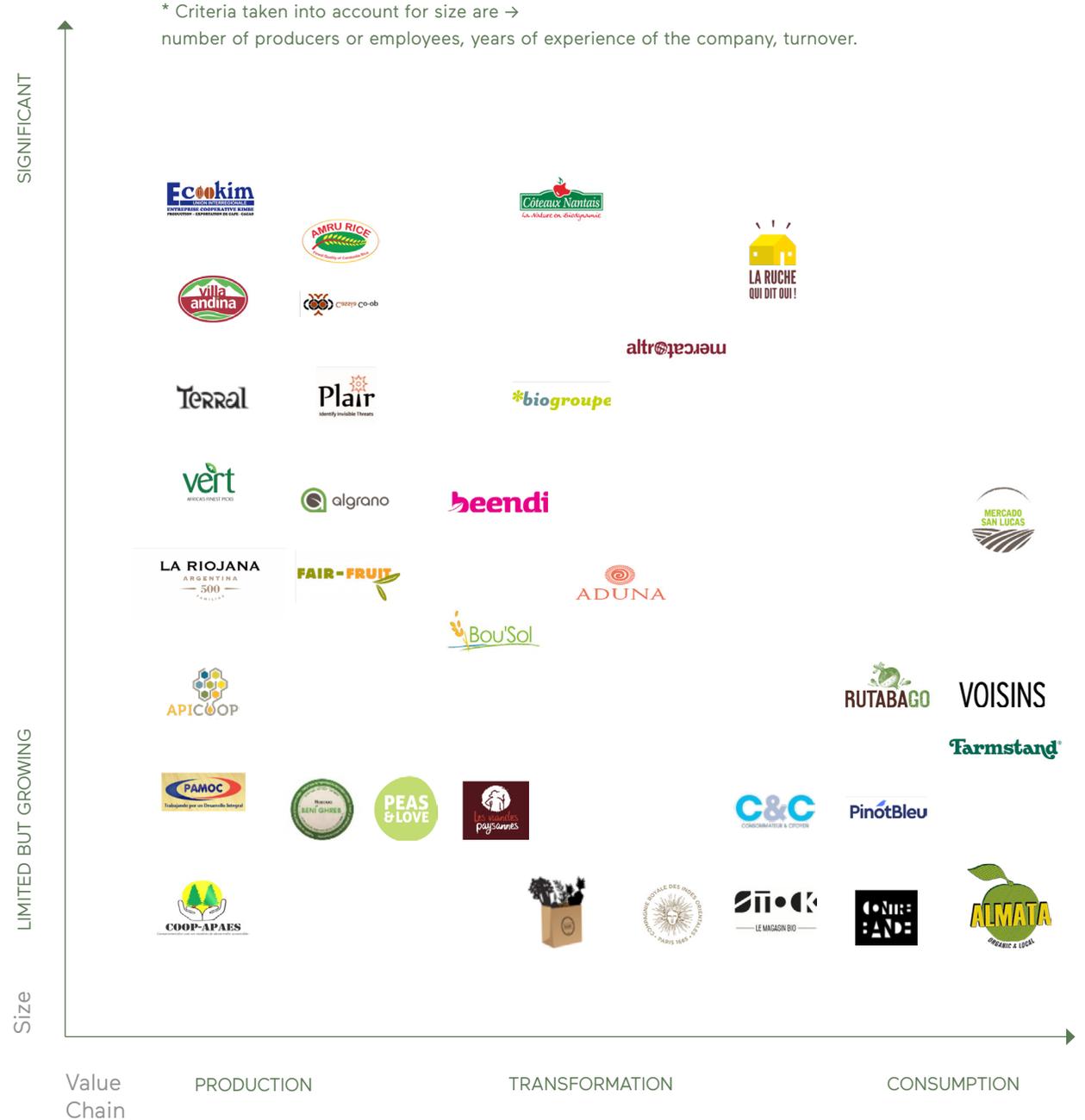
Quadia believes that the agri-food sector is experiencing a complete revolution driven by a shift of consumer preference and demand. We consider that entrepreneurs and their new businesses will react and adapt better than traditional industry “giants” to this new paradigm. Throughout the entire value chain, from the field to online distribution and consumption, entrepreneurs are shaping a new economic model that takes into account sustainability issues and the preservation of natural resources. Integrating environmental and social impact in an investment strategy reduces future risks and allows the portfolio to contribute to a fair economy.

Quadia’s investment programme Nourriterre finances companies in the agri-food sector which demonstrate clear respect to the principles of organic, healthy and sustainable food and agriculture. The portfolio is diversified with direct investments in companies and investment funds that follow the same principles.

Nourriterre’s proprietary Impact Management approach adds value at every stage of the investment cycle and is adapted from Quadia’s Impact Management tool thus showcasing its flexibility. The six impact objectives and indicators outlined below are based on the areas we believe will create the biggest impact towards a sustainable food system.

Our Investees Across the Value Chain

To-date, 32 companies have received direct investments from our Nourriterre programs and the portfolio is diversified across countries, value chain position and raw materials. NourriTerre is also invested directly in funds such as INOKS. NourriTerre has previously invested in the Impact Finance Fund and the responsibility Fair Agriculture Fund.



● NourriTerre’s Impact Objectives & Indicators

88%

of investees contribute to soil regeneration and have a positive impact on biodiversity

87%

of investees commercialize products of superior nutritional qualities

89%

of investees engage with civil society to contribute to change

Impact Milestones Across the Portfolio

NourriTerre’s portfolio directly aligns with 7 of the 17 SDG



91%

of investees use locally produced raw materials

98%

of investees pay local producers at fair price

Objectives



Indicators

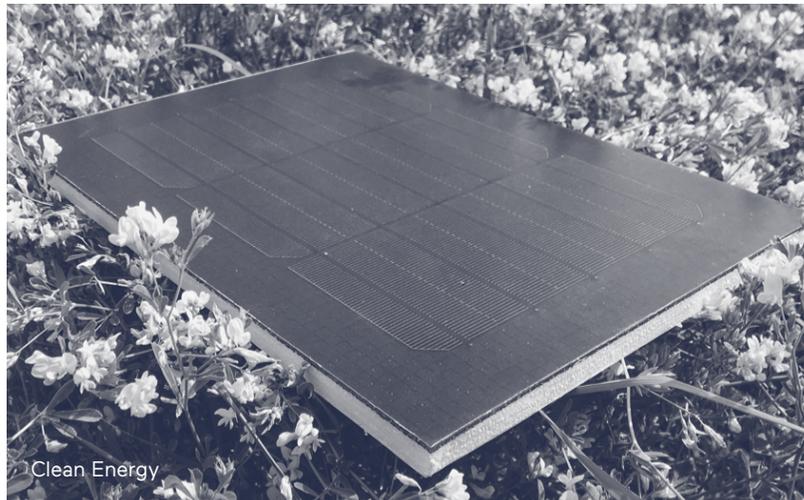
<ul style="list-style-type: none"> → Circular Supplies → End of Life and Resource Recovery → Sharing Platforms → Product Life Extension → Product as a Service 	<ul style="list-style-type: none"> → Waste → Renewable Energy → Resource Efficiency 	<ul style="list-style-type: none"> → Fair Remuneration → Fair Supply Chain Management → Corporate Governance → Lead for Change 	<ul style="list-style-type: none"> → Local sourcing → Community Development → Development of related local sectors 	<ul style="list-style-type: none"> → Soil preservation → Agro-ecological production methods → Animal welfare 	<ul style="list-style-type: none"> → Nutritional quality → Healthy diets → Product accessibility
---	--	--	---	---	---

8. Case Examples

OPES SOLUTIONS
Off-grid solar PV panels manufacturer

LES COTEAUX NANTAIS
Biodynamic and Organic Fruit Producer & Processor

FAIRPHONE
Fair and Modular Smartphones



Sector → Clean Energy

4%

of growth of global energy demand in 2018

360M

of people that benefited from OGS generated energy in 2017

740M

of people that are expected to benefit from OGS in 2022

USD 9.2bn

expected market value of the solarbike industry by 2022

Sector Context

→ The production of energy is a significant source of greenhouse gas (GHG) worldwide. Global energy related emissions grew by 1.7% in 2018, reaching a historic high of 33.1 Gt CO₂. Such increase is the largest since 2013 and is 70% higher than average. This trend will likely not decrease as rising income, economic growth and population expansion will push up global energy demand by more than a quarter in 2040.

→ In this light, there is an urgent need to contain energy-related GHG emissions. The production of low-carbon energy devices such as off-solar grids is the best solution to this issue. In 2017, approximately 28.6 million tons of GHG emissions have been avoided through the reduced use of traditional lighting sources.

→ The off-grid solar market highlights an explosive growth with 60% CAGR, USD 3.9 billion generated since 2010 and a potential market of 434 million households in 2017.

→ Additionally, off-grid solar (OGS) solutions can be applied to the fast-growing smart city and green mobility industries. OGS can be used for high potential solutions like solar street lighting, solar bikes, and customized modules.



Sector

→ Clean Energy

Environment & Social Challenges in the Value Chain

Raw Materials

Rare metals used to produce solar panels. 93% of the world's rare elements are produced in China, where regulations are low or inexistent.

→ Use of hazardous and critical materials for solar panels (e. g. Silicon Tetrachloride): risk for the workers, the public and the environment.

Distribution | Transport

→ High transport GHG emissions (generally long distance with manufacturing site).

Storage

Storage problem.

→ Electricity is not stored. As solar power depends on nature, one could lack of electricity when needed. On the other hand, overproduction leads to waste of energy.

Decommissioning | End of Life

Worldwide solar panel waste could reach 78 million metric tons by 2050.
→ Materials used are not easy to recycle.

→ No proper scheme to recycle as most products did not attain end of life

→ If no step taken, waste will become a black eye for a low carbon industry.

Manufacturing of OGS devices

Solar panels needs to be manufactured at 2.000 degrees, requiring the use of fossil fuels energy.

→ Energy used in the manufacturing process: the production of PV panels is very energy intensive

→ Manufacturing market very concentrated in areas where it is not well regulated with lower operational costs, weaker environmental regulations and challenged labor practices: China. On the contrary, stricter regulations in Europe (WEEE Directive).

Customers

The OGS industry represents in 2017 an untapped market of 361 million households.

→ Provide energy access at household level.

→ Face load demand: difficulties for renewables to meet demand as solar power depends on nature.



Company
→ **OPES Solutions, Off-grid solar PV panels manufacturer**



Headquarters
→ **Hong Kong & Germany**

Sector
→ **Clean Energy**

Company

→ OPES Solutions is the number one global player for off-grid application solar modules, differentiating through R&D and manufacturing innovation from Germany combined with competitive, partially automated manufacturing with a high end-product customization degree. The company targets energy access in the developing world, small solar home systems, smart cities (e.g. solar street lamps and parking meters) and clean mobility (bike-sharing).

Mission

→ OPES aims to provide power for lighting and appliances to off-grid and unreliable-grid connected populations in developing countries (mainly Sub-Saharan Africa and Asia). The company's mission is also to facilitate the transition to smart cities and mobility solutions through clean energy.

Solution

→ Design, production and commercialization of solar modules centred around four targeted segments: Solar Home Systems, Solar Street Lighting, Bike Sharing and Customized Modules.

Impact Positioning

→ OPES Solutions is creating positive social and environmental impact by providing clean electricity in developing and developed markets. The company's products support the electrification of rural populations that do not yet have access to energy, and reduce GHG emissions through renewable energy technologies. The company also provides smart city and mobility solutions that support the clean energy and mobility transition in industrialized markets. OPES aims to be a leader in its industry, pioneering new approaches to material take-back, resource efficiency, and the use of secondary solar materials in production as "circular supplies".



Company
 → **OPES Solutions, Off-grid solar PV panels manufacturer**



Headquarters
 → **Hong Kong & Germany**

Sector
 → **Clean Energy**

Economic Benefits Generated by Impact Creation

High Growth in Off-Grid Solar ↓

Frontier Markets

The Off-Grid Solar market electrified 434 million households (nearly 2.2 billion people) in 2017. The market shows high growth (60% GAGR since 2010) and OPES Solutions supplies 6 of the 8 top companies active in frontier markets.

New Market Opportunities ↓

Modularity for Growth in Smart Cities

Customized modules show a high market potential as innovative applications are needed for smart cities and mobility. For example, OPES Solutions provides solar street lighting and solar solutions for bike sharing schemes.

Secondary Materials ↓

Secondary High Value Materials

OPES is committed to reducing e-waste and saving materials by finding opportunities to re-furbish existing products and utilize high-value secondary materials from solar systems (PV panels, batteries, etc.) as raw materials in new products.



Foster circular production & consumption

Active in industry groups that are finding circular solutions to the growing e-waste problem from the solar industry



Improve natural resource use

5 million solar modules have been sold to produce clean energy in Africa, Asia and Europe



Promote fair value chains

Commitment to collaborate with supply chain to ensure fair labor practices



Support local communities

Committed to bringing energy access to rural areas and mobile applications

SDG Contribution

Opes Solutions contributes significantly to the following UN SDGs →



Sector

→ Sustainable Food

EUR
9.7bn

2018 sales of organic food & drinks in France

+70%

of French people claim they consume organic food at least once a month in 2018

+20%

Increase of worldwide organic farmland between 2016 and 2017

SUGAR CANE, BEETROOT & GLUCOSE

production generates biodiversity loss & deforestation

Sector Context

→ Worldwide industrial agriculture can be considered one of the greatest threats to our planet, as it is the second biggest polluter in the world and is highly energy-inefficient. Agriculture and related land use activities account for a quarter of the world GHG emissions in 2018.

→ In recent decades, the nutritional food quality has largely deteriorated, causing many intolerances and allergies and being one of the driving forces for many public health issues.

→ Consumers, increasingly aware of these negative impacts, are praising organic products, both at home and in the catering sector. In France, the organic market grew by 15.7% in 2018.



Sector

→ Sustainable Food

Environment & Social Challenges in the Value Chain

Farming | Raw Materials

The livestock sector contributes to human-induced GHG emissions for 14.5% and is a large user of natural resources.

- Food and safety issues with the use of chemicals harmful for health, nature, soils and other living beings.
- Current industrial farming is one of the biggest GHG emitters worldwide.
- Social issues are constantly raised regarding labor conditions of producers and farmers.

Processing

The WHO recommends a sugar intake limited to 6 teaspoons per day while a can of soda contains up to 10 teaspoons of sugar.

- Use of preservatives, additives and other chemicals that diminish the quality and nutrition attributes of food can be harmful for human health.
- Non healthy food available to consumers including high sugar and salt levels.
- Unsustainable sourcing, with low valorization of local products.
- Overconsumption of water, energy and plastic.
- Food waste and inefficient recycling systems

Transportation

The distance traveled by food products to supermarkets in the conventional system averages 2.400 Km.

- High transport GHG emissions.

Distribution

In France, 31% of organic-labelled products available do not come from the French agriculture.

- High pressure prices in traditional mass retail system.
- Lack of transparency on product origin.
- Unsustainable sourcing, with poor valorization of local products.

Consumers | End of life

In Europe, per capita food waste by consumers is 95 to 115 kilograms per year.

- Health issues including malnutrition and obesity.
- Food waste in households.
- Overconsumption and poor recycling system of plastics and packaging.



Company

→ **Les Côteaux Nantais,
Biodynamic and Organic Fruit
Producer & Processor**



Headquarters

→ **France**

Sector

→ **Sustainable Food &
Agriculture**

Company

→ With +100-hectares of orchards farmed using biodynamic methods and a brand new 6,400 sqm production unit, Les Côteaux Nantais produces a wide range of 40+ apple varieties and a range of pears, kiwis, strawberries, rhubarb, quinces, and more. Unsold fresh fruits and purchased produce are used to make processed products.

Mission

→ Cultivate high quality fruits with biodynamic methods, giving future generations a chance to have access to affordable and varied healthy food, respectful of the environment. Sustain long-term local employment beyond the harvest season.

Solution

→ Fresh fruits sold and delivered to the main French fruit and vegetable markets as well as to other European partners. The remainder of the fruit production is processed at their own production facility based in Nantes, into a large range of organic products such as fruit compotes, jams and jellies, fruit puree, fruit juices, cider, and more.

Impact Positioning | Biodynamic Farming

→ For many years, Les Côteaux Nantais has been using biodynamic farming methods in its orchards and all along the production process. Biodynamic farming, based on a Demeter certification, is “a holistic approach to agriculture in which vitality has the highest priority” (French Demeter Association).



Company
→ **Les Côteaux Nantais,**
Biodynamic and Organic Fruit
Producer & Processor



Headquarters
→ **France**

Sector
→ **Sustainable Food &**
Agriculture

Economic Benefits Generated by Impact Creation

Biodynamic farming methods ↓

Mitigate climate risks

That allow Les Côteaux Nantais to limit production losses to less than 20% (vs. +30% for the other local producers) during the last harvesting period as soils, plants and fruits are more resistant to poor climatic conditions.

Vergers d'Avenir partnership with local producers ↓

Secures supply

As Les Côteaux Nantais commits to buy 80% of partners' apple production and train them on biodynamic farming methods to improve resiliency to climatic conditions and fruit quality.

Fair working conditions for seasonal workers ↓

Led to the creation of the fruit transformation business

In order to offer seasonal workers year-round employment opportunities. Today, the transformation business represents more than 55% of the company's turnover.



Foster circular production & consumption

Apple pulp from the pressing is re-used as compost in the orchards



Improve natural resource use

Bio-dynamic farming methods and +40 varieties of apples are cultivated and rotated



Promote fair value chains

Commitment to fair working conditions for seasonal workers



Support local communities

Vergers d'Avenir partnership with local biodynamic fruit producers to train them and increase supply

SDG Contribution

Les Coteaux Nantais contributes significantly to the following UN SDGs →



Sector

→ Circular Materials & Products

3.3bn

smartphones users worldwide in 2019,
expected to reach 3.8 bn in 2021

40%

expected smartphone users as
percentage of global population by
2021

908 Twh

of energy used to manufacture
smartphones from 2007 to 2017,
equivalent to the annual electricity of
Japan

103M

GHG emissions generated by main
smartphones manufacturers, equivalent
to annual emissions of Czech Republic

Sector Context

→ Consumer electronics is one of the most challenging sectors from a social and environmental perspective, mainly due to a complex global and interconnected value chain with multiple negative externalities.

→ The smartphone industry, as one of the fastest growing segment of ICT, largely contributes to this issue. Smartphones contain a high number of critical metal and hazardous substances. Mining, extraction and refinement of critical metals lead to a wide range of impacts on human health and the environment.

→ Key sustainability challenges extend beyond critical metals, to also include resource competition in the manufacturing process, damages of biodiversity due to the toxic discharges into the environment and greenhouse gases, electronic waste, and supply chain fairness.

→ The rapid development of mobile phones has led to a market based upon an almost equally rapid replacement of older devices, without any mitigation of environmental impacts. As an example, an iPhone 6s is estimated to create 57% more CO₂ than an iPhone 4.



Sector

→ Circular Materials & Products

Environment & Social Challenges in the Value Chain

Mineral Extraction

Smartphones are among the most resource intensive by weight on the planet. They contain more than 40 different chemical elements.

→ Electronic devices contain many substances regarded as critical raw materials and conflict minerals, including 3TG (tantalum, tin, tungsten, and gold) and Cobalt. This has both environmental and social impacts, as incidents of children and adults working in deadly conditions were reported in gold and tin mines. Tantalum is at the heart of fierce conflict in the Democratic Republic of the Congo.

Distribution

→ High transport GHG emissions

Consumer use | End of Life

Average smartphone lifecycle vary from 18 months to 2 years

→ Overconsumption from consumers driven by trends and promotions.

→ Companies have increasingly changed the design of their products in a way that accelerates the replacement cycle by making them difficult to service or upgrade.

→ Lack of take-back schemes and recycling process: less than 1% of smartphones are being recycled.

→ The world's e-waste problem continues to grow - 44.7 million metric tons. Beside being an environmental issue, this threatens the health of workers and local communities.

Component Manufacturing

Manufacturing the iPhone implies more than 200 suppliers

→ Multiple suppliers leading to lack of control and transparency on health, safety, pollution, work schedules etc.

→ Abundance of natural resources used: land, water material. In 2011, the global production of smartphones used up to an area of land more than twice the size of New York.

Assembly | Final Manufacturing

Over 70 to 80% of the carbon footprint during lifespan of IT device occurs during manufacturing

Significant energy used in the manufacturing process in countries heavily reliant on fossil fuels.

→ Problems of workers rights abuses: cases of forced labor, excessive working hours and harsh conditions widely reported in Chinese electronics manufacturing



Company
→ **Fairphone**
Fair and Modular Smartphones

FAIRPHONE

Headquarters
→ **The Netherlands**

Sector
→ **Circular Products & Materials**

Company

→ Fairphone is the leading electronics company of ethically produced smartphones, with a positive social and environmental impact throughout the phone's life cycle. Fairphone was founded in 2013 by Bas van Abel and is headquartered in Amsterdam. Five years later, Fairphone has sold over 150,000 phones and is the highest ranked electronics brand on sustainability in the entire sector, as well as a certified B-Corporation. Fairphone has developed a modular design phone which allows the user to customize, upgrade and repair the phone more easily, with the company goal to slow down obsolescence. The company's solution is a phone that is easier to repair and easier to refurbish, recycle and dismantle, bringing significant environmental, social and economic benefits.

Mission

→ Fairphone aims to shift the consumer electronics market towards fairness, transparency and circularity to create positive social and environmental impact from the beginning to the end of a phone's life cycle.

Solution

→ Design, production and commercialization of the first ethical smartphone based on a long-lasting design, fair materials, good working conditions across the value chain recycling and re-usability.

Impact Positioning

→ Fairphone aims to open up the story of what is inside mobile phones and how they are manufactured, in order to provide a positive impact on how phones are manufactured, used and recycled. The company has designed the world's first modular phone, built with reparability in mind. The phones are built to last, in both their original design and in designing their repair to be as easy as possible. Fairphone was ranked the highest by Greenpeace in their **Guide to Greener Electronics 2017 report**.



Company
 → **Fairphone**
 Fair and Modular Smartphones

FAIRPHONE

Headquarters
 → **The Netherlands**

Sector
 → **Circular Products & Materials**

Economic Benefits Generated by Impact Creation

First Modular Smart Phone Produced ↓

Fairphone 2 Sold Out

The modular, repairable smartphone, with a transparent supply chain containing fairtrade gold and conflict-free tin, tungsten and tantalum has sold out showing the electronics industry that a different production dynamic is in demand.

Client Retention & New Market Opportunities ↓

Modularity & Repairability

Fairphone is ideally suited to implement Product-as-a-Service circular business models because of the modularity of Fairphone devices. This shift from a one-off transaction to an on-going service will help to deepen relationships with clients.

2,5 million € raised in crowdfunding ↓

Community Growing

The Fairphone Community is now more than 160,000 people that support fair electronics. About 1800 people supported the Fairphone crowdfunding people supported the Fairphone crowdfunding campaign to raise 2.5 million Euro to support the growth of the company.



Foster circular production & consumption

Collected 10 tonnes of e-waste and use 50% of post consumer plastics in new phones



Improve natural resource use

30% less CO2 than the average smartphone due to long-lasting design



Promote fair value chains

Implemented worker welfare programs and has 25.37% of total weight of the eight focus materials are sustainable sourced



Support local communities

Working with artisanal and small scale mines to create jobs and a better future for miners and their families in vulnerable communities

SDG Contribution

Fairphone contributes significantly to the following UN SDGs →



Looking Forward



MUKUL KUMAR
Head of Impact Management



MARION SCHUPPE
Investment & Impact Manager



SANDRINE PFISTER
Impact & Financial Manager



ANDREA BROWN
Head of Impact Management
(Until 2019)

“

In 2020, Quadia’s impact team looks forward to deepening collaborations with our portfolio companies by continuing to introduce our theory of change, the updated impact management framework and supporting their growth and impact creation. By doing so, we will be able to report more meaningfully our impact on the transition towards a regenerative economy in 2020 and moving forward.

Quadia’s Impact Committee will also meet several times in 2020, strengthening our insights and positioning on impact creation in the energy, food, and circular economy sectors. Quadia values the commitment of these experts to share their knowledge and support the transition towards a regenerative economy.

We have important ambitions for the impact we help create at Quadia. We aspire to be a recognized leader in accelerating a regenerative economy through our impact and investment approach. Over the long term, we hope to leverage our portfolio companies in their sectors, and to provide insights on how through our investments, we are contributing to the creation of a sustainable, equitable and just economy.

”

QUADIA

Square de la Comédie 1
CH-1205 Geneva
T +41 22 888 12 09
F +41 22 888 12 01

QUADIA

CAPITAL
REGENERATED

