

Impact investing in the global food and agricultural investment space

Investing profitably whilst fostering
a sustainable and thriving agriculture



NOVEMBER 2018

EDITORIAL

We all know the challenges of our time are global and complex: climate change, the depletion of natural resources, persistent poverty and food security, to name a few.

Amid these challenges, the sustainable development agenda adopted by the United Nations and which set 17 Sustainable Development Goals (“SDGs”) to end poverty, protect the planet and ensure prosperity for all is a global call to action for positive change.

We believe that no industry is as relevant to the successful implementation of the SDGs as agriculture. Almost every single SDG has some linkage to agriculture: the development of sustainable agricultural practices, the efficient use of water, the protection of biodiversity, the development of rural areas, the reduction of food loss and food waste are among key challenges and opportunities achieving this agenda.

In this context, impact investing in the agriculture industry can play a pivotal contributing role, unlocking private capital to invest aligned with the SDGs and in that process, providing solutions to the many challenges we face.

While the food and agriculture investment space remains a niche category in the impact investment world, it is well recognized by impact investors, who are consistently increasing their allocations towards this important sector of our society.

Hence, our goal today is to raise awareness about the opportunities to invest for impact in this sector and to introduce a practical and comprehensive framework that presents seven key food and agricultural impact themes based on the pillars of planet and people.

Our framework also provides a large pool of actionable impact activities associated to the seven impact themes, and which can drive investments towards assets and projects that can make a measurable, beneficial social and environmental impact in our sector. Besides the impact, we believe these investment opportunities may be among the greatest in our lifetime and may serve to build a thriving and sustainable economy.

We hope you enjoy the reading and we look forward to exploring the vast opportunities for impact investing in the broad food and agriculture sector together with you. Please write to us or call us if you wish to speak further, thank you!

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- During the last few years we have observed strong growth in the awareness of global environmental and social issues.
- Many global initiatives are being developed to address these problems, including the 17 Sustainable Development Goals agreed by the United Nations, the Paris Climate Change Conference (COP21) and the 23rd Conference on Climate Change COP23.
- In this global context of growing awareness of climate change and the need for action to mitigate it, the private sector is becoming an increasingly relevant actor, acknowledging that investors, consumers and governments are demanding businesses to play a more active role in society.
- Institutional and private investors are increasingly demanding investment options that take into consideration the environmental and social outcomes of companies' activities and of products offered to society, and responsible finance and impact investments are gaining space.
- The availability of green investment options such as responsible finance platforms, green bonds and impact investment funds among others, are allowing investors to find a way to reconcile values with financial needs.
- According to The Global Impact Investment Network (GIIN) impact investments are: "Investments made into companies, organizations and funds with the intention to generate measurable social and/or environmental impact alongside a financial return".
- The emergence of the concept of impact investments defies the traditional binary nature of capital allocation. Impact investors' expectations on financial returns vary widely, while some impact investors expect to outperform traditional investments, others are willing to trade-off financial returns for returns generated by social and/or environmental impact.
- Until recently, agriculture has been on the sidelines of discussions concerning human-induced climate change. However, it is now recognized that agriculture lies at the heart of many fundamental global challenges faced by humanity including food security, economic development, social equity, environmental degradation and climate change.
- The broad food and agriculture sectors represent a growing investment space among global investment allocations. Over the last two decades, private and institutional investors have been deploying growing flows of capital to the sector's different asset strategies, driven by attractive, structural supply and demand trends.
- As of October 2018, there are 530 investment funds specialized in the broad food and agriculture sector, with aggregated assets under management of \$ 83 Billion. Investments managed by forestry funds and other vehicles add over \$100 Billion in AuM.
- Among the universe of investment funds tracked by Valoral Advisors, a review of their investment strategies and practices point to slow, but gradual growth in the number of investments with a genuine impact mandate. Combining all the food, agriculture and forestry funds tracked, 13% of them can be qualified as impact funds, with a wide range according to the specific asset strategy.

EXECUTIVE SUMMARY

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- Indeed, impact investments in agriculture have started to gain interest and relevance in recent years and more and more investment projects in agriculture are developed with impact objectives. According to the GIIN 2018 Annual Impact Investor Survey, 57% of respondents had allocations to food & ag impact investments, more than any other sector.
- Our study introduces a practical and comprehensive framework that presents seven key food and agricultural impact themes that positively influence the pillars of planet and people. The framework provides a large pool of actionable impact activities associated to the seven impact themes.
- Some agricultural projects can focus on practices that have stronger link with planet preservation, such as (i) Climate change mitigation, (ii) nature and biodiversity conservation, and (iii) sustainable food production.
- Other projects can be centered on (iv) industry innovation and agricultural technologies which lead to higher productivity and yields whilst care for our planet and/or people's livelihoods. And thirdly, agricultural projects can be centered on people care and contribute to (v) food security and climate change adaptation, build on (vi) social equity in agriculture, and/or provide people with (vii) nutritious, healthy and safe food.
- The study explores these seven food and agriculture impact investment themes and provides a description of the main impact activities that can be implemented to address each impact theme.
- As occurs with impact investments in general across all industries, to continue growing and building trust, it is critical that impact investments in agriculture implement standard measurement and reporting tools of social and environmental outcomes.
- There are several organizations that attempt to drive standardization of measurement and reporting and that can be very helpful when developing an impact investment project.
- In addition to environmental and social performance measurement and reporting, we see strong growth in the use of third-party certifications that add extra credibility to agricultural products in the areas of forest management, sustainable seafood and good agricultural practices.
- Impact investments in agriculture represent a huge opportunity to implement deep changes in farming methods and adopt new ways of producing food that help mitigate climate change through lower greenhouse gases emissions, help respect the environment and biodiversity, enhance food security and climate change resilience and promote social equity and fairer agricultural livelihoods.
- As Kate Raworth explains in her impressive book "Doughnut Economics", we need to produce in a way that supports the creation of a thriving economy and that allows us to live within the doughnut, where impact investors can develop agricultural projects that contribute to respect the higher boundary of the planet Earth's ecological ceiling and the environment in which we live in as well as the lower boundary of our social foundation through promoting greater social equity and better agricultural livelihoods.

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01.

Introduction

01. Introduction

During the last few years we have observed an increased awareness of global environmental and social issues. Most people now acknowledge what scientists have been telling us for a long time, that our activities are a major cause of environmental change which is threatening the subsistence of humanity on Earth if we continue to live as today. Climate change, ice melting, food security, biodiversity loss, plastic pollution, social inequalities among others, are mentioned every day in the news.

Many global initiatives are being developed to address these problems. In September 2015 the 17 Sustainable Development Goals were agreed by the United Nations and have become very popular among governmental policies and business strategies.

In November 2015 the Paris Climate Change Conference (COP21) was held, leading to the creation of the Paris Agreement which entered into force on November 4th, 2016, with the aim to strengthen the global response to the threat of climate change by keeping a global temperature rise well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.

Last year in November 2017, the 23rd Conference on Climate Change COP23 was held in Bonn, Germany, with the objective for governments to

implement the Paris Climate Change Agreement, and accelerate the transformation to sustainable, resilient and climate-safe development.

And very recently, in October 2018, the Intergovernmental Panel on Climate Change released a new report on Global warming of 1.5°C. The main finding of the report is the confirmation of the strong need to keep global warming below 1.5°C compared to the initial target of 2°C. The report stresses the responsibility of all productive sectors to scale up efforts and work together for rapid and far reaching change to reach deep emissions reductions. If the world continues to live as today we are on track for a rise of more than 3°C above pre-industrial temperatures, which would have severe negative consequences for our planet.

In this global context of growing awareness of climate change and the need for action to mitigate it, the private sector is becoming an increasingly relevant actor, acknowledging that investors, consumers and governments are demanding businesses to play a more active role in society.

Climate risks are becoming more and more visible and investors find the need to consider the long term health of their investments and are increasingly aligning their businesses with environmental, social and governance criteria. Many companies are becoming signatories of the

UN principles of responsible investments while others are becoming certified BCorporations by the nonprofit B Lab to meet rigorous standards of social and environmental performance, accountability, and transparency.

Institutional and private investors are increasingly demanding investment options that take into consideration the environmental and social outcomes of companies' activities and of products offered to society, and responsible finance and impact investments are gaining space. For example, in 2007 the green bonds market kicked off with the first green bond being issued by the European Investment Bank (EIB), as a structured bond with proceeds dedicated to renewable energy and energy efficiency projects.

Since then, the green bond market has continued growing and according to PwC Luxembourg, in 2017 the global green bond market surpassed USD 150bn of annual issuance. In addition, in 2016 the Luxembourg Green Exchange (LGX) was launched, a dedicated platform for green, social and sustainable securities. The market for impact investing funds has also been growing strongly.

According to The Global Impact Investing Network (GIIN) 2018 Annual Impact Investor Survey, based on an analysis of the activities of 229 of the world's leading impact investing organizations, survey respondents collectively manage over USD 228

billion in impact assets, a figure which serves as the best-available "floor" for the size of the impact investing market. The availability of green investment options such as responsible finance platforms, green bonds and impact investment funds among others, are allowing investors to find a way to reconcile values with financial needs.

Based on the increasing global environmental threats and social issues, and the rise of impact investments globally, the goal of this report is to raise awareness of impact investment opportunities in the food and agriculture industry.

We first explain what impact investments are in general and then we focus on understanding agriculture's role in global environmental and social problems to further understand the relevance and evolution of impact investments in the food agriculture industry. We then present a practical and comprehensive framework to help investors visualize, identify and prioritize the spectrum of impact investment themes and activities available within the food and agriculture industry, which positively influence the pillars of planet and people. And finally, we focus on the importance of impact measuring and reporting in the food and agriculture industries.



02.

The concept of
impact investing

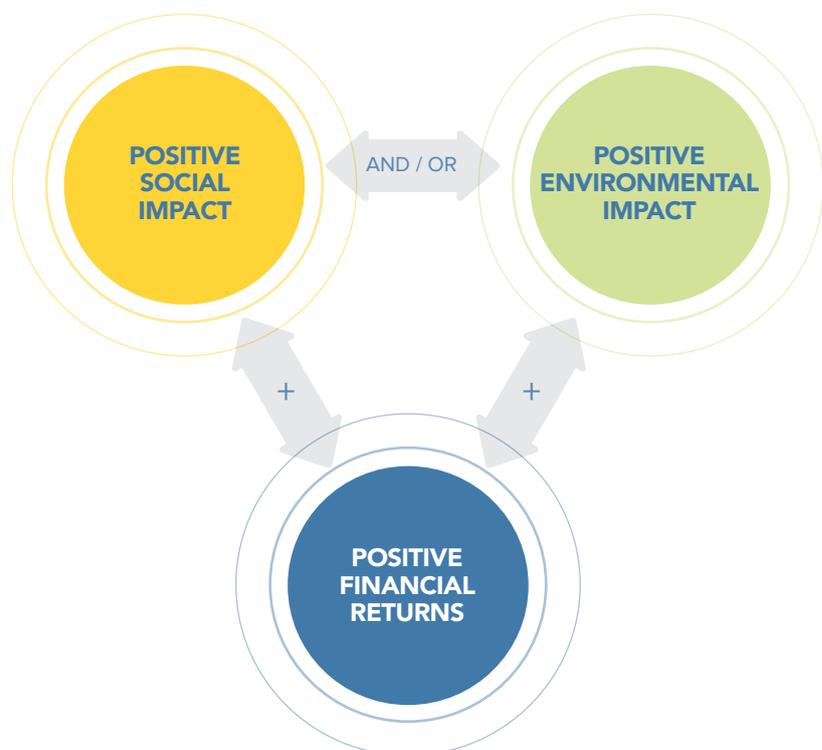
02. The concept of impact investing

Going back in time, the first ideas that led to the development of the impact investment concept appeared in the early 1900s, with the surge of economic activism as a means of addressing civil-rights and labour issues. In the 1960's the growing concerns among investors about reducing harmful activities led to the emergence of negative screening of investments. Further in the 1970's the microfinance concept was developed by Muhammad Yunus in Bangladesh and in 1983 he created the Grameen bank.

In the 1980's the first ideas of combining business activities with positive social change appeared, leading to the birth of the concept of impact investments in 2007, in a business meeting led by The Rockefeller Foundation and a group of investors. Since its birth the concept has become increasingly popular and the development of impact investments has been growing firmly.

According to The Global Impact Investment Network (GIIN) impact investments are: "Investments made into companies, organizations and funds with the intention to generate measurable social and/or environmental impact alongside a financial return".

FIGURE 1:
ILLUSTRATION
OF IMPACT
INVESTMENTS
DEFINITION.



Source: Valoral Advisors.

The practice of impact investing is further defined by the GIIN by the following four core characteristics:

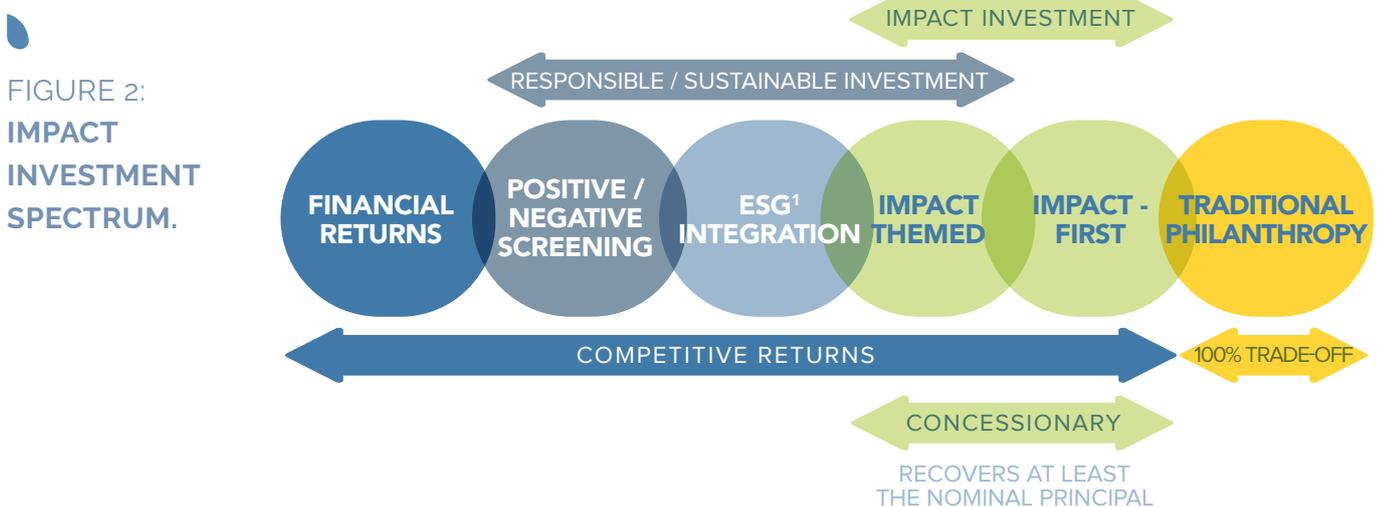
(I) INTENTIONALITY: an investor's intention to have a positive social or environmental impact through investments is essential to impact investing;

(II) INVESTMENT WITH RETURN EXPECTATIONS: Impact investments are expected to generate a financial return on capital or, at minimum, a return of capital;

(III) RANGE OF RETURN EXPECTATIONS AND ASSET CLASSES: impact investments target financial returns that range from below market (sometimes called concessionary) to risk-adjusted market rate, and can be made across asset classes, including but not limited to cash equivalents, fixed income, venture capital, and private equity; and

(IV) IMPACT MEASUREMENT AND REPORTING: a hallmark of impact investing is the commitment of the investor to measure and report the social and environmental performance and progress of underlying investments, ensuring transparency and accountability while informing the practice of impact investing and building the field.

The emergence of the concept of impact investments defies the traditional binary nature of capital allocation. As can be seen in Figure 2, there is a wide spectrum of investment options in between traditional investments with main focus on financial returns and charitable donations.



Impact investors' expectations on financial returns vary widely. While some impact investors expect to generate competitive returns and even outperform traditional investments, others are willing to trade-off financial returns and move to the concessionary spectrum while prioritising social and/or environmental returns. However, a concessionary impact investment should be expected to pay back at least the nominal principal.



03.

Why impact
investments in
agriculture are
important?

03. Why impact investments in agriculture are important?

Until recently, agriculture has been on the sidelines of discussions concerning human-induced climate change. However, it is now recognized that agriculture lies at the heart of many fundamental global challenges faced by humanity including food security, economic development, social equity, environmental degradation and climate change.

At the recent UN climate conference in Bonn COP 23, the sector experienced a step forward through an agreement among Parties that agriculture should be integrated into the Paris Agreement. The agreement establishes the Koronivia Joint Work on Agriculture to develop and implement new strategies for adaptation and mitigation within the agriculture sector, that will help reduce emissions from the sector as well as build its resilience to the effects of climate change.

It is now acknowledged that agriculture is a strong contributor to climate change, with a sector contribution of 19-29% of total global greenhouse gas emissions. According to the Food and Agriculture Organization (FAO), Agriculture, forestry and other land uses (AFLOU) have emitted a total of 10.6 gigatonnes of CO₂ equivalent in 2010. The main direct sources of GHG emissions in agriculture are not only carbon dioxide (CO₂), but also nitrous oxide (N₂O), mostly through the application of fertilizers, and methane (CH₄), essentially from livestock and rice cultivation. Deforestation and land degradation have also

reduced the sector's capacity to absorb or sequester carbon dioxide from the atmosphere.

Moreover, as has been stated in the report on "Strategies for mitigating climate change in agriculture" by California Environmental Associates and Climatefocus, April 2014, while governments, bilateral development agencies, and multilateral financial institutions are dedicating significant resources to increasing agricultural yields globally, less emphasis has been placed on making agriculture environmentally sustainable. Croplands and pasturelands already cover nearly 40 percent of the earth's land area, and agriculture consumes 70 percent of freshwater used by humans.

Agriculture is also the world's largest driver of species loss and habitat conversion and is a major contributor to toxic and nutrient pollution, soil degradation, and invasive species introductions. These pressures on our resources will only continue to grow as global population and income levels rise. It is important that the agriculture sector transforms itself and implements sustainable agricultural practices that allow it to become more caring of nature and of the environment that surrounds us.

At the same time, climate change is already affecting the agriculture sector in a multitude of ways, which can vary from region to region. For example, we have started to observe rising temperatures, loss of biodiversity, increased

prevalence of extreme weather events such as floods, cyclones and hurricanes and increased unpredictability of weather patterns.

Some regions are also expected to face prolonged drought and water shortages. The widespread melting of glaciers and snow cover in major mountain ranges, particularly in Asia, will affect the volume and timing of water flows, ultimately reducing the availability of irrigation water downstream. Increasing temperatures lead to changes in the location and incidence of pest and disease outbreaks. Greater frequency and intensity of extreme weather events, such as the El Niño-Southern Oscillation, will increasingly affect climate patterns and food production.

All these changes have deep consequences in the agriculture sector, and can be translated into harmed crops and reduced yields, reduced feed supply and carrying capacity of pastures and increases in animals' vulnerability to disease, which reduces fertility and milk and meat production, reduced fish stocks due to warmer water temperatures and reduced capacity of forests to provide crucial goods and services.

According to FAO, it is estimated that beyond 2030, the negative impacts of climate change on the productivity of crops, livestock, fisheries and forestry will become increasingly severe in all regions and we will see reduced agricultural incomes at both national and household levels, affecting also the world poor rural communities.

It thus becomes clear that agriculture needs to adapt to climate change and develop agricultural

production systems that are more resilient to risks, shocks and long-term climate variability to be able to maintain agricultural yields and feed a growing population.

Global population keeps growing and food security becomes a main concern. It is estimated that between now and 2050, the world's population will reach close to 10 billion people and FAO estimates that agricultural production will have to increase by 60 percent by 2050 compared to 2006 levels to feed this growing population. Therefore agriculture also needs to continue transforming itself to feed a growing global population.

Agriculture is an essential driver of economic growth in rural areas and least developed countries. According to FAO, most of the poor people in the world live in rural areas and depend on agriculture for their livelihoods and food security. Yet, because they lack the resources or knowledge to invest in their land or livelihoods, the poor often cannot benefit from the new technologies or access to markets that would boost their productivity and income.

So improved agriculture production combined with the promotion of more inclusive and equitable production systems provides opportunities to improve the rural people's livelihoods. The agriculture sector needs to help mitigate climate change and promote more inclusive societies by canalizing investments to projects with environmental and social impact.



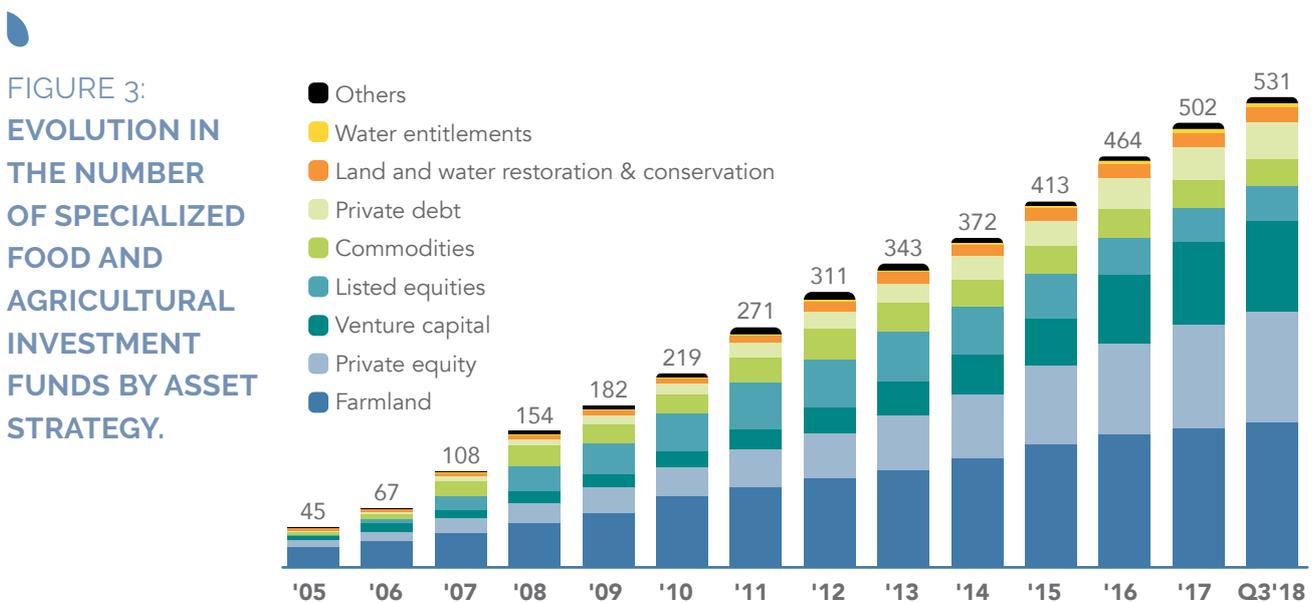
04.

Opportunity
set of impact
investments in
agriculture

04. Opportunity set of impact investments in agriculture

It is now well known that the broad food and agriculture sectors represent a growing investment space among global investment allocations. Over the last two decades, private and institutional investors have been deploying growing flows of capital to the sector's different asset strategies, driven by attractive, structural supply and demand trends.

As of September 2018, there are over 530 investment funds specialized in the broad food and agriculture sector, with aggregated assets under management of \$ 83 Billion. Investments managed by forestry funds and other vehicles add over \$100 Billion in AuM.



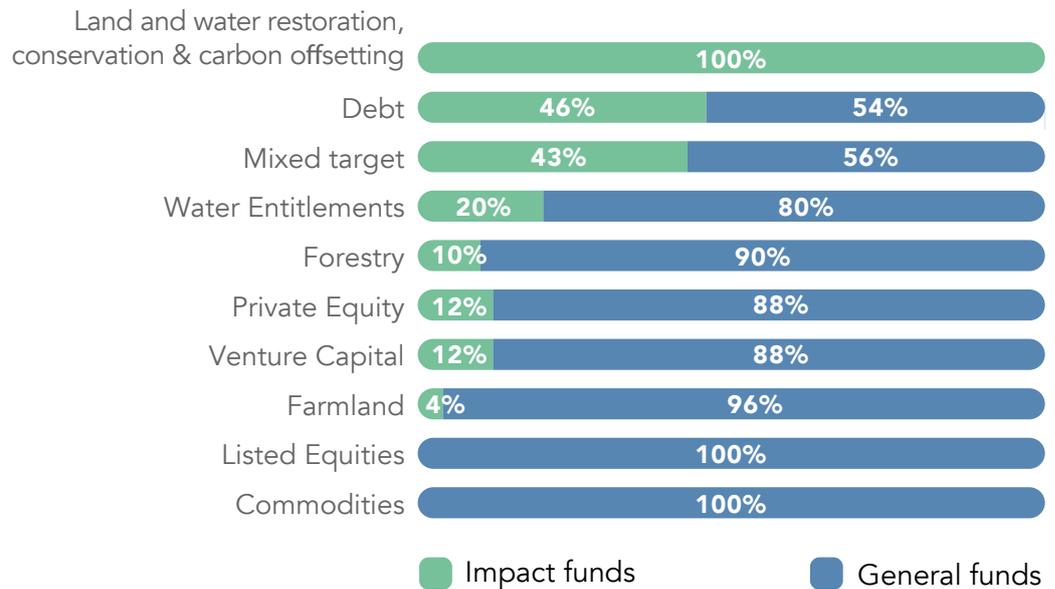
Source: Valoral Advisors.

Among the universe of investment funds tracked by Valoral Advisors, a review of their investment strategies and practices point to a relatively low number of funds with a clear impact mandate. Combining all the food, agriculture and forestry funds tracked, 13% of them can be qualified as impact funds, with a wide range according to the specific asset strategy.

The mix of impact funds differs substantially by asset strategy, which reflects certain focus on specific areas but also points to the sizeable opportunity to transform this investment space.



FIGURE 4:
**PERCENTAGE
OF FOOD AND
AGRICULTURAL
INVESTMENT
FUNDS
REGARDED AS
IMPACT FUNDS.**



Source: Valoral Advisors.

This general assessment among fund managers is indicative of the early stages of the impact investment universe in the food and agriculture sector and is compatible with various industry surveys.

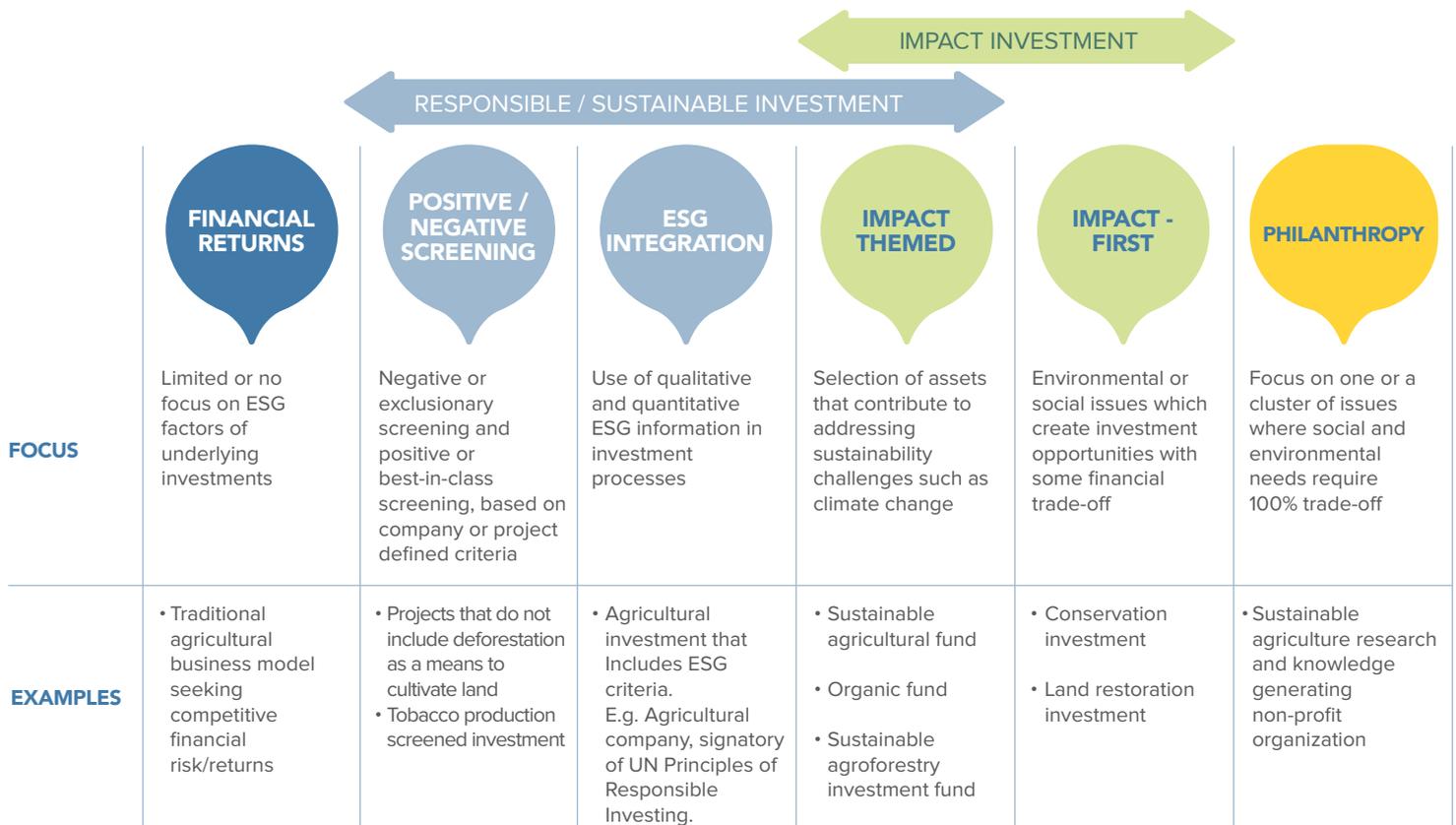
Indeed, Impact investments in agriculture have started to gain interest and relevance in recent years and more and more investment projects in agriculture are designed with impact objectives. According to the GIIN 2018 Annual Impact Investor Survey, 6% of total impact investing assets was allocated to food and agriculture in 2017, only after financial services (19%), energy (14%), microfinance (9%) and housing (8%).

When analyzing the 82 survey respondents that completed the survey five years ago and again this year, the impact investment industry has grown by a compound annual growth rate (CAGR) of 13% for their collective AUM. The food and agriculture sector has achieved the second highest CAGR of 23% within this industry in the last five years, only after Education with 33% CAGR.

Moreover, thirty-seven percent of respondents listed food & agriculture among the top three sectors to which they deployed capital in 2017, followed by financial services (excluding microfinance; 27%), energy (26%), and housing (24%). We find that these survey results are very positive and encouraging for the food and agriculture sector within the impact investments space.

Investments in agriculture can be allocated to projects with different degrees of environmental or social impact. Investors have now the opportunity to choose and develop agricultural investments by defining returns expectations and level of impact aimed to be achieved. Some examples are provided in Figure 5.

FIGURE 5:
EXAMPLES OF AGRICULTURAL INVESTMENTS ALONG
THE SPECTRUM OF INVESTMENT OPTIONS.



Source: PRI (Principles of Responsible Investment); Valoral Advisors.

Introducing the seven impact themes in the broad food and agriculture sector

Impact investments in agriculture can be directed towards projects that generate positive financial returns and at the same time implement agricultural practices that care about people's livelihoods and/or our planet.

Some agricultural projects can focus on practices that have stronger link with planet preservation, such as mitigating climate change, conserving nature and biodiversity and producing sustainably. Other projects can be centered on improving and developing new agricultural production methods and technologies which lead to higher productivity and yields whilst care for our planet and/or people's

livelihoods. And thirdly, agricultural projects can be centered on people care and contribute to food security and climate change resilience, build on social equity and/or provide people with nutritious, healthy and safe food.

Projects with a combination of these attributes can generate positive financial returns as well as contribute to key global challenges and influence on one or several of The United Nations Sustainable Development Goals, as illustrated in Figure 6.

FIGURE 6:
KEY AGRICULTURAL IMPACT THEMES AND THEIR LINK WITH THE SUSTAINABLE DEVELOPMENT GOALS.

IMPACT PILLARS	KEY FOOD & AGRICULTURAL IMPACT THEMES	LINK TO SUSTAINABLE DEVELOPMENT GOALS
PLANET	CLIMATE CHANGE MITIGATION	12 RESPONSIBLE CONSUMPTION AND PRODUCTION, 13 CLIMATE ACTION, 14 LIFE BELOW WATER, 15 LIFE ON LAND
	NATURE AND BIODIVERSITY CONSERVATION	6 CLEAN WATER AND SANITATION, 14 LIFE BELOW WATER, 15 LIFE ON LAND
	SUSTAINABLE FOOD PRODUCTION	6 CLEAN WATER AND SANITATION, 12 RESPONSIBLE CONSUMPTION AND PRODUCTION, 13 CLIMATE ACTION, 14 LIFE BELOW WATER, 15 LIFE ON LAND
PEOPLE (FARMERS & CONSUMERS)	INDUSTRY INNOVATION & AGRICULTURAL TECHNOLOGIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION, 13 CLIMATE ACTION, 8 DECENT WORK AND ECONOMIC GROWTH, 9 INDUSTRY INNOVATION AND INFRASTRUCTURE
	FOOD SECURITY AND CLIMATE CHANGE ADAPTATION	2 ZERO HUNGER, 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
	SOCIAL EQUITY IN AGRICULTURE	1 NO POVERTY, 4 QUALITY EDUCATION, 5 GENDER EQUALITY, 8 DECENT WORK AND ECONOMIC GROWTH, 10 REDUCED INEQUALITIES
	NUTRITIOUS, HEALTHY AND SAFE FOOD	3 GOOD HEALTH AND WELL-BEING, 12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Source: Valoral Advisors

In Table 1 next page we explore deeper into the food and agriculture impact investment themes and we provide a description of the main impact activities that can be implemented to address each impact theme.

We have tried to be as clear as possible in categorizing impact themes and activities. However, impact investment themes in agriculture are sometimes interrelated and one impact activity can affect more than one impact theme, so we have given priority to the strongest links among impact activities and themes when designing our framework.

For example, the activity ‘food loss and waste reduction’ has been included in the impact theme ‘Food security and climate change adaptation’ as there is a very strong link in the need to reduce food loss and waste to improve food security. However, it can also be linked to “Climate change mitigation” as the lost or wasted food requires energy to be produced and generates carbon emissions through the production and decomposition processes which could be avoided.

Impact investors in agriculture can choose to develop investment projects that focus primarily on one impact theme or on a combination of impact themes. For instance, many climate change mitigation opportunities in agriculture would generally desire to be aligned with productivity gains and with food security. Moreover, conservation or sustainable food production projects can be developed together with social equity objectives.

Other projects can be developed focusing strongly on one impact investment theme, or even on one or two activities within an impact investment theme, which could be the case of a mobile communications company in Africa that develops a project to provide mobile payments services to rural people.

TABLE 1: COMPREHENSIVE ANALYSIS OF KEY AGRICULTURAL IMPACT THEMES AND ACTIVITIES.

	IMPACT THEMES	IMPACT ACTIVITIES
PLANET	 <p>1. CLIMATE CHANGE MITIGATION</p> <p>Avoid greenhouse gas emissions (CO₂, methane and nitrous oxide) and increase carbon sequestration through agricultural production processes.</p>	<ul style="list-style-type: none"> · Forest action: <ul style="list-style-type: none"> - Afforestation and reforestation - Avoid deforestation · Soil carbon sequestration · Reduction of enteric fermentation emissions · Manure management · Optimisation of fertilizer application · Reduction of emissions in rice production · Energy smart food systems · Reduction in food and agricultural supply chain emissions
	 <p>2. NATURE AND BIODIVERSITY CONSERVATION</p> <p>Preserve natural capital. Protect and restore natural habitats and ecosystems, especially from the effects of human exploitation, contamination and industrialization.</p>	<ul style="list-style-type: none"> · Conservation of natural habitats, water related ecosystems and biodiversity <ul style="list-style-type: none"> - Land conservation easements - Payments for ecosystem services - Biodiversity offset credits - Carbon credits - Conservation-friendly certifications and labelling schemes
	 <p>3. SUSTAINABLE FOOD PRODUCTION</p> <p>Produce safe, high quality food and agricultural products in a way that conserves and improves the natural environment and preserves natural capital.</p>	<ul style="list-style-type: none"> · Sustainable crop production · Sustainable livestock production · Sustainable fisheries & aquaculture · Sustainable forestry · Pro-biodiversity sustainable agricultural investments
	 <p>4. INDUSTRY INNOVATION & AGRICULTURAL TECHNOLOGIES</p> <p>Develop technological innovations across the food and agriculture sector and accelerate technology adoption to enable more efficient and more sustainable agriculture and food systems.</p>	<ul style="list-style-type: none"> · Biological agricultural inputs and green chemistry · Digital precision agriculture · Precision machinery and robotics · Weather data and information technologies · Water management technologies · Traceability solutions for sustainable food supply chains · Blockchain applications for sustainable agriculture · Biomaterials · New alternative proteins · Sustainable urban and indoor agriculture
	 <p>5. FOOD SECURITY AND CLIMATE CHANGE ADAPTATION</p> <p>Help ensure food security so that all people have access to sufficient, safe and nutritious food. Develop resilient food production systems in response to climate change.</p>	<ul style="list-style-type: none"> · Climate resilient agriculture · Integrated production systems: <ul style="list-style-type: none"> - Agroforestry and silvopastoral systems - Integrated crop/livestock or rice/aquaculture systems · Reduction of food waste and food loss along the value chain · Increase in food production through sustainable intensification
PEOPLE	 <p>6. SOCIAL EQUITY IN AGRICULTURE</p> <p>Foster fairer, healthier and more inclusive agricultural livelihoods.</p>	<ul style="list-style-type: none"> · Financial access: microfinance and small commercial loans · Microinsurance and agricultural insurance · Fair trade & market access · Mobile communication technologies for social inclusion: <ul style="list-style-type: none"> - Mobile financial services - Mobile information platforms - Mobile trade platforms · Equality & empowerment in rural labour · Learning and knowledge sharing · Employment of local communities and indigenous farmers
	 <p>7. NUTRITIOUS, HEALTHY AND SAFE FOOD</p> <p>Produce high quality and safe food, that is produced in a more natural way, with lower exposure to chemicals and antibiotics, and that provides people the nutrients they need to maintain themselves healthy, feel good, and have energy.</p>	<ul style="list-style-type: none"> · Organic agriculture · Sustainable alternative proteins and plant-based foods · Sustainable grassfed meats · Biofortified nutritious crops

Source: Valoral Advisors



Climate change mitigation and carbon farming

To achieve climate change mitigation and carbon farming, many different activities can be implemented in various types of agricultural projects around the world. For example, forest action can generate strong environmental impact through afforestation and reforestation projects that capture carbon dioxide as biomass both above and below ground.

Carbon farming, the action of sequestering carbon from the atmosphere in agricultural soils, is another impact activity that has great potential in terms of climate change mitigation. This can be achieved through numerous soil and land management practices that aim to increase soil organic matter and the carbon content in the soil which result in the removal of carbon dioxide from the atmosphere. These practices generally have higher impact in areas where land degradation and soil erosion prevail, and normally include cultivated land conservation and restoration practices as well as improved carbon storage in grazing lands.

Methane emissions from enteric fermentation by ruminant animals such as cows and sheep are considered another big contributor to atmospheric greenhouse gases and climate change. The reduction of methane emissions from livestock can be achieved by meat & dairy production productivity increase, especially in areas where low productivity prevails.

Changes in animal feed and the provision of supplements and additives to ruminant animals to reduce methane emissions by changing the microbiology of the rumen are currently under research phase. And finally, from the consumers' perspective, the shift in human consumption patterns to low carbon products is very important, where meat substitute products and other sustainable protein sources are gaining space.

When analysing intensive livestock production, this often results in soil and water pollution, as the amount of manure and urine produced exceeds the capacity of surrounding land to absorb nutrients. Manure is the main source of greenhouse gases (GHGs) emissions in intensive operations and thus it is very important to implement a manure management system that prevents water pollution and reduces GHGs emissions. For example, by composting and by applying manure directly to agricultural lands. Manure can also be used as a resource to produce biogas and bio fertilizers, through anaerobic digestion.

Moreover, in land cultivated areas, the application of nitrogen containing fertilizers in excess of plant needs pollutes water and generates nitrous oxide emissions. The adoption of precision agricultural practices and the optimization in the application of nitrogen-containing fertilizers in terms of timing, type, amount and location is very important to minimize nitrous oxide emissions and help mitigate climate change.

Rice is one of the most important cereal crops in the world and has one of the highest carbon footprints as cultivating in wet systems produces methane emissions. When fields are flooded, the decomposition of material depletes oxygen in the soil and water, causing anaerobic conditions that generate methane emissions, which, according to FAO, account for 11 percent of GHGs emissions from the agricultural sector. Emissions during the growing season can be reduced by using various water management practices, such as mid-season drainage in irrigated systems. Improved management of rice straws can also provide significant emissions reductions.

All these activities can be combined with implementing energy smart food systems where the use of renewable energies prevails combined with the implementation of production improvements to attain higher energy efficiency.

Supply chain emissions' reduction is also important, where improvements can be made in the industrial production of fertilizers, especially in regions such as China where coal is still used as feedstock instead of natural gas, and where equipment is largely outdated and inefficient. Cold chains can also reduce their emissions by using low carbon refrigeration and hydrofluorocarbons-free systems.



Nature and biodiversity conservation

Nature and biodiversity conservation is the second impact theme in our framework. Investments in support of conservation provide benefits to society in the form of species and habitat protection, maintenance of working landscapes, enhanced provision of ecosystem services (such as clean water, timber, fisheries and carbon sequestration) and activities such as tourism, outdoor recreation and cultural observances.

According to i2 Capital impact investment firm and the Aspen Institute, global investment in conservation is estimated at USD 50 billion per year, and primarily comes from governments, multilateral agencies and philanthropic sources. However, this is not enough and in the last few years conservation projects are also looking for private capital and impact investments.

Impact investing in the field of conservation is in an initial phase but it aims to grow in the coming years. Project owners and asset managers are developing market constructs that allow to monetize the value of conservation investments, with the aim of generating financial returns to investors while expanding the base of capital available for conservation.

There are several different tools that can be implemented in conservation projects in order to generate income and, in this way, to be able to monetise those positive environmental externalities that are being originated by the conservation activity.

Land conservation easements, for instance, are a very useful tool when developing a conservation project. Normally a land conservation easement is a voluntary, legally binding agreement between a landowner and someone who is interested in the conservation of the property, such as a conservation organisation, through which certain rights to the property are permanently transferred in exchange of some form of payment.

In the case of an agricultural conservation easement these rights can generally relate to the protection of special natural features, such as lakes, rivers, mountains, wildlife habitat and biodiversity. The landowner retains ownership of the land and all rights not transferred through the easement, and continues to use the property as productive forestland, farmland, or home. This tool can be applied in several countries around the world. However, the United States has seen a dramatic increase in the use of this tool as conservation easements represent for many landowners an excellent alternative to a financial donation.

Payments for ecosystem services are another way for landowners or farmers to generate income from a conservation activity. They are generally monetary incentives offered to farmers or landowners in exchange for managing their land to provide some sort of ecological service. In economic terms, they seek to internalize the positive externalities generated by natural systems, creating incentives for landholder behavior that ensures service provision.

Ecosystem services normally include preservation of biodiversity habitats, watershed protection, and carbon sequestration. The European Union Agri-environment measures are a clear example of this scheme, by which the European Union and the Member States provide payments to farmers in return for environmental services. Farmers sign a contract with the administration and are paid for the additional cost of implementing their environmental commitments and for any losses of income (e.g. due to reduced production) which the commitments entail.

Biodiversity offsets are another conservation scheme to be considered in our analysis. New construction and development activities are essential for economic growth, yet under business as usual practices they often result in a significant loss of biodiversity. A biodiversity offset has the purpose of ensuring that an investment project is implemented in a manner that results in no net loss or preferably in a net gain of biodiversity.

Biodiversity offsets, according to the Business and Biodiversity Offsets Programme are measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from project development after appropriate prevention and mitigation measures have been taken.

Offsets can, for example, deliver biodiversity benefits (e.g. reforestation) through a transaction, where offset sellers (e.g. conservation NGO) sell offsets to developers (e.g. a mining company) who seek to compensate the residual biodiversity loss resulting from a development activity such as mining. Biodiversity offsets can be voluntary or compulsory by law.

Carbon offsets are another scheme available to investors that allows them to develop an investment project that produces certain greenhouse gas emission reduction which can be measured, verified and sold through a carbon offset market. In the last few years we can see an increasing number of individuals and companies willing to buy carbon offset credits or to invest in environmental projects around the world in order to balance out their own carbon footprints.

We can also find a compliance market where companies need to buy carbon offsets in order to comply with carbon caps or certain carbon emissions allowance. Carbon offset buyers need to ensure they are purchasing high-quality carbon offsets, so there exist several organizations that have developed various standards and certification systems that ensure the credibility of the emission reduction project. Some of these organizations are Gold Standard, Clean Development Mechanism (CDM), Voluntary Carbon Standard (VCS), Climate Action Reserve and Green-e Climate Protocol for Renewable Energy.

Finally, we can find conservation-friendly certifications and labelling schemes that encourage farmers to sign up to wildlife-friendly food production and in return these labels enhance the value proposition of their products face to their customers and final consumers. Two examples of conservation-friendly certifications are Conservation Grade Fair to Nature farming in England and Certified Wildlife Friendly originated in the United States but applied globally.



Sustainable food production

Sustainable food production is the third impact theme in our framework, which mainly includes the sustainable production of crops, livestock, fish and wood products.

According to the Sustainable Agriculture Initiative Platform, “sustainable agriculture is the efficient production of safe, high quality agricultural products, in a way that protects and improves the natural environment, the social and economic conditions of farmers, their employees and local communities, and safeguards the health and welfare of all farmed species”.

The main practices involved in the production of sustainable crops generally include the following activities:

- Avoid deforestation as a means to access to cultivating land,
- Minimize the use of chemical pesticides and herbicides and preferably rely on natural processes of predation or biocontrol of pest or weed problems through bio pesticides and bio herbicides,
- Optimise the use of fertilizers and preferably use biological fertilizers,
- Manage water use efficiently,
- Maintain fertile and healthy soils through soil conservation and restoration, zero-tillage, crop rotation, crop diversification and cover cropping,
- Ensure safe storage, application, and disposal of agricultural chemicals,
- Reuse and recycle waste,
- Maintain habitats to support wildlife and conserve biodiversity.



Sustainable livestock production includes a similar set of activities, such as:

- Avoid deforestation as a means to access to livestock raising land,
- Minimize the use of pesticides and herbicides in pastures,
- Manage water use efficiently,
- Maintain fertile and healthy soils,
- Optimize the use of fertilizers and preferably use biological fertilizers,
- Implement rotational grazing management to balance grazing pressures on land, which can improve grassland productivity and reduce land degradation,
- Enhance animal health while minimize the use of antibiotics and limit the use of artificial hormones,
- Ensure proper treatment of solid waste, manure, and waste water,
- Maintain habitats to support wildlife and conserve biodiversity.

It is generally expected that truly sustainable livestock farming requires the use of a pasture-based system.



Sustainable aquaculture is considered by the World Bank Group a dynamic concept and the sustainability of an aquaculture system will vary with species, location, societal norms and the state of knowledge and technology. According to the World Bank Group, some essential practices of sustainable aquaculture include:

- Mangrove and wetland conservation,
- Effective effluent management and water quality control,
- Sediment control and sludge management,
- Soil and water conservation,
- Efficient fishmeal and fish oil use,
- Minimize biodiversity and wildlife impact,
- Implement effective disease control systems,
- Minimal antibiotic and pharmaceutical use,
- Microbial sanitation,
- Maintain global standards for hygiene.



Investors can also focus on sustainable forestry. According to FAO, sustainable forest management refers to “the stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems”.

There are some main criteria used by The Programme for the Endorsement of Forest Certification (PEFC) to evaluate and attain best practices in sustainable forest management, including the following:

- Biodiversity of forest ecosystems is maintained or enhanced
- The range of ecosystem services that forests provide is sustained
- Chemicals are substituted by natural alternatives or their use is minimized
- Workers’ rights and welfare are protected
- Local employment is encouraged
- Indigenous peoples’ rights are respected
- Operations are undertaken within the legal framework and following best practices

Finally, impact investment projects in sustainable agriculture can be combined with a pro-biodiversity or Functional AgroBiodiversity perspective, as it is now understood that biodiversity and agricultural production need not necessarily be in conflict, but can potentially strengthen each other.

Functional agroBiodiversity has been defined as those elements of biodiversity at the scale of agricultural fields or landscapes, which provide ecosystem services that support sustainable agricultural production and can also deliver benefits to the regional and global environment and the public at large. Implementing sustainable agricultural practices that are pro-biodiversity is of key importance for a robust and environmentally friendly agriculture.



Industry innovation and agricultural technologies

Industry innovation and agricultural technologies is an impact theme with increasing interest among investors, including venture capitalists and entrepreneurs. Many impact investment opportunities are arising within this impact theme, as the agriculture industry catches up with the broader technological advances in the world. We consider within this impact theme ten main activity areas.

We first mention the development of biological products and green chemistry innovations for sustainable and organic farming, such as: biological fertilizers - including those produced with food waste -, biological pesticides, biostimulants, and biological seed treatments and seed coatings for better crop performance.

We then mention the development of digital precision agriculture and big data technologies that allow higher efficiency use of inputs and improved crop monitoring. This is followed by the production of precision machinery and robotics that enable farmers to be more precise in the application of inputs to avoid wastage or over application, and in some cases to use less power energy.

The fourth activity group includes improved weather and climate prediction data and information technologies to enhance resilience and better response to climate change. This is followed by the development of water management technologies and smart irrigation systems to optimise water use for agriculture. This includes technologies that monitor and measure water use and irrigation technologies that optimise the use of water.

We also have traceability solutions for sustainable food supply chains, which can be powered by technologies such as blockchain, artificial intelligence (AI) and the Internet of Things (IoT). Advanced traceability solutions and item-level traceability allow manufacturers to serialize each food product using a unique mark or identifier number, and food brands can prove that a specific and unique food item was made, stored, packaged and transported in a sustainable way. These technologies help to offer greater transparency to consumers.

Going to blockchain technology and sustainable agriculture, its main application areas include tracking and tracing in value chains as well as land ownership registration, payments for ecosystem services and index-based insurances and micro-finance. Some companies and industries have already started utilizing blockchain technology and it looks very promising for the food and agriculture industry.

The production and development of bio materials and bio plastics, which involves the agriculture industry working together with the chemical industry to develop raw materials to other industries as an alternative to oil based products, foster recycling possibilities and the rise of the circular economy. An example of this impact activity is the production of bio based packaging solutions made from industrial potato starch and cellulose fibers.

The development of new sustainable sources of protein is the ninth activity group. Some startups and venture capitals are developing very innovative projects in this area that includes two main categories. The first category is the development of new sustainable sources of protein for livestock production and aquaculture such as, for example, the production of protein feed, oil and soil enricher from flies and larvae.

The second category is the production of food from alternative proteins for human consumption, such as beef without cows (laboratory-grown meat), egg whites without hens and milk without cows. These products are currently under development phase and some are reaching commercial stages. They follow the idea of producing animal-free food, using less land and water inputs, while matching taste and nutritional values and being more environmentally friendly.

Finally, the tenth and last activity area within industry innovations and agricultural technologies is the development of sustainable urban and indoor agriculture. There are many investment projects around the world that explore this new way of growing food, mainly focused on green leaves. The three main areas to explore in this case are vertical farms, container farms and urban farming.

It is believed that when grown sustainably these farming systems consume less water and fewer pesticides. These farms are generally located closer to their end market and thus they generate less transport CO2 emissions. As indoor agriculture is fully enclosed indoors, it can largely control its environment and avoid the weather risk related to farming including extreme weather events resulting from climate change.



Food security and climate change adaptation

Food security and climate change adaptation are two great challenges that we must face and that are strongly linked together. According to the “Climate Smart Agriculture Sourcebook” from FAO, to attain food security FAO strongly defends the need to increase agricultural production through sustainable intensification, where more is produced with fewer inputs by applying appropriate inputs at the right time and in the right amount, while reducing waste.

According to FAO, sustainable crop production intensification is “a productive agriculture that conserves and enhances natural resources through an ecosystem approach that capitalizes on natural biological inputs and processes. It reduces the negative impacts on the environment and enhances natural capital and the flow of ecosystem services. Sustainable crop production intensification also contributes to increasing systems’ resilience, a critical factor, especially in light of climate change”.

Climate resilient agriculture is a key component to attain food security. This can be achieved by plant breeding and enhancement of genetic potential to increase productivity and to increase resistance to climate variability, diseases and pests. The development of integrated production systems like agroforestry and silvopastoral systems or integrated crop/livestock or rice/aquaculture systems allow to increase diversity and diversification of income and to develop climate resilient agriculture. All this can be combined with agricultural insurance services to protect farmers from main agricultural risks.

When thinking about food security it is very important to consider food waste and food loss reduction, as according to FAO estimates, approximately one third of all food intended for human consumption is lost or wasted. Food loss happens before it reaches the consumer through spoilage, spilling or other unintended consequences due to limitations in agricultural infrastructure, storage and packaging. Food waste refers to food that is intentionally discarded, usually during distribution (retail and food service) and consumption.

The reduction of food waste and the best use of waste produced along the food and agriculture value chain are strongly linked to fostering the concept of circular economy. With the aim of promoting circular economy in agriculture, there is now underway the AgroCycle project led by the School of Biosystems and Food Engineering at University College Dublin.

The AgroCycle project is a horizon 2020 research and innovation project that analyses the possibilities for recycling and valorization of waste from the food and agriculture industry. The results of this research project will provide valuable new ideas on how to achieve sustainable valorization of waste generated by food and agriculture.

However, we can still find today several opportunities to develop and reduce food loss and waste from an agricultural perspective, such as:

- Finding new uses to imperfect food, e.g. selling to consumers imperfect but nutritious and healthy fruits and vegetables at lower prices or use of imperfect fruits and vegetables as inputs to other processed food products;
- Reusing food waste for human consumption and/or animal feed, if food is not adequate for human consumption, it can still be used (safely and properly treated) as animal feed (e.g. for pigs), respecting animal feed regulations in this field;
- Producing fertilizers with food waste;
- Producing biomaterials;
- Producing biofuels made from food waste.



Social equity in agriculture

Social equity in agriculture is an impact theme that refers to developing agricultural activities that generate shared value and improve the lives of rural communities. The aim is to develop investment projects that generate positive financial returns as well as positive social outcomes and foster through their activities fairer, healthier and more inclusive agricultural livelihoods.

In all these cases, community engagement is key to develop deep and comprehensive understanding of the causes of inequality to be able to generate real social impact. We have identified seven main impact activity areas where agricultural impact investment projects can work on to contribute to building social equity and fairer agricultural livelihoods.

The first impact activity area is the provision of financial services to medium and low income agricultural communities, such as microfinance, agricultural credits and capital investments in small and medium enterprises and trade finance. Financial access can change the lives of many small and medium farmers and can have a real positive impact on rural communities. This is followed and can be combined with the provision of insurance and micro-insurance schemes to help farmers manage agricultural and climate change risks and build on climate resilience.

Fair trade and market access focuses on ensuring a fair compensation to small farmers, on connecting small and indigenous farmers to fair trade markets, and on strengthening the connection between family and small farmers with business supply chains. Some impact projects involve creating cooperatives of small farmers to better safeguard their interests in relation to other larger actors within the supply chain.

We then have mobile communication technologies for social inclusion, where companies can provide mobile financial services to rural communities, including mobile credit and insurance services to farmers and mobile payments, which have achieved effective results among agricultural communities in Africa. Other mobile communication services are mobile information platforms that provide climate and other agricultural information to farmers and also mobile platforms to enhance access to markets, such as mobile agricultural trading, tendering and/or bartering platforms.

Equality and empowerment is a very popular subject that has gained attention globally. Equality and empowerment in agriculture aims to ensure the provision of working opportunities to women and to provide women with increasing participation in decision making. Training and education programs for women are very helpful to improve women's participation, skills, knowledge and leadership qualifications.

Moreover, learning and knowledge sharing within rural communities is a very important activity area, and complementary to the previous ones. Agricultural companies can empower farmers with sustainable, efficient, affordable and replicable agricultural practices to help them improve their production results while at the same time become more sustainable. They can also provide training and education programs for farmers to enhance knowledge and skills. Information and communication technologies can be used to educate and train farmers through online courses and webinars. They can as well improve farmers' access to timely climate and agricultural information and help them make better investment decisions.

And lastly, the seventh activity area is the employment of agricultural local communities and indigenous farmers, as the provision of local employment is directly connected to social benefits and fairer agricultural livelihoods.



Nutritious, healthy and safe food

The last impact theme in our framework is centered on a shared concern among many people today: the provision and access to nutritious, healthy and safe food. Within this impact theme investors aim to produce high quality and safe food, that is produced in a more natural way, with lower exposure to chemicals and antibiotics, and that provides people the nutrients they need to maintain themselves healthy, feel good, and have energy.

Organic food production is the first activity area within this impact theme. The organic food industry has been growing fast during recent years, and according to Statista, the 2016 global sales of organic foods reached 90 billion U.S. dollars. This industry is expected to continue growing in the near future as consumers are increasingly buying organic because they believe it is better for their health and also for the environment.

Fruits, vegetables and grains labeled organic are considered healthier because they are grown without the use of most synthetic pesticides and herbicides or artificial fertilizers. Organic meat, milk and eggs are also produced without antibiotics and they cannot contain synthetic hormones, which have been linked to an increased risk of cancer. Studies have also shown that organic meat and milk can have about 50% more omega-3 fatty acids, a type of unsaturated healthy fat, and organic milk has less saturated fat than non-organic milk. Other studies have showed higher levels of vitamin C in organic plant products.

However, although it is clear that organic products have better nutritional values, the literature states that it is still difficult to scientifically prove a positive relationship between nutritional value and health effects and to come to sound conclusions from analytical data about the health effects of organic foods.

Organic food production is considered better for the environment as organic farming works on building soil health, and healthier soils are a good source for carbon storage and increased carbon dioxide sequestration. Organic food production that uses no agricultural chemicals also results in less water pollution and it is more beneficial to wildlife and biodiversity when compared to traditional farming.

Even though organic food production is better for the environment, it is still different from sustainable food production. Organic certifications do not explicitly demand certain agricultural practices that are required for sustainable agriculture, such as: (i) the need to avoid deforestation as a means to access to cultivating land, (ii) the use of renewable energy sources and the promotion of energy efficiency in food production and food transportation, (iii) the implementation of water use efficiency practices and technologies and (iv) the adoption of waste management practices in agricultural production processes. However, some organic farms are including some of these practices as part of their business models.

We thus consider that organic food production is beneficial for our planet and for humanity in general. However, when developing an impact investment project that has the aim of generating deeper impact, we think it would be desirable for this project to include in its mission another impact theme or activity from our framework, which could be related to social equity or to sustainable agriculture. In this way, an organic production project can be delivering deeper environmental and/or social impact.

The offering of sustainable alternative proteins is becoming more popular as people become concerned for their health, for the environment and for the welfare of animals, and decide to follow “green diets”, aiming to eat healthy and with less environmental impact. People that follow green diets tend to eat fewer meat-derived proteins and include other alternative proteins in their diets, which can be linked to plant, fungal, algal, and insect protein. Plant-derived proteins are a healthy option as they are generally high in fiber and low in fat. When compared to meat proteins, they are better for the environment, more efficient to produce and less expensive, which makes them more favorable to feed a growing global population, attain food security and mitigate climate change.

Even though animal derived proteins have higher negative environmental impact than other sources of protein, it has been proved that meat, milk and eggs from grass-fed animals have better nutritional values and less negative environmental impact when compared to industrial livestock production. For example, research has shown that grass-fed meat may have less total fat, more heart-healthy omega-3 fatty acids, more conjugated linoleic acid, a type of fat that is thought to reduce heart disease and cancer risks, and more antioxidant vitamins, such as vitamin E. Milk from grass-fed cows has higher alpha-linolenic acid, an Omega-3 fat. Therefore we believe that grass-fed animals are preferable compared to industrial livestock production.

Finally, our last activity group is the production of biofortified nutritious crops. These crops aim to have higher density of vitamins and minerals so that when consumed regularly they generate improvements in vitamin and mineral nutritional status. Biofortified crops are currently mainly produced in Africa with the aim of reducing malnutrition among its population.



05.

IMPACT MEASURING AND REPORTING OF AGRICULTURAL INVESTMENTS

05. Impact measuring and reporting of agricultural investments

As occurs with impact investments in general across all industries, to continue growing and building trust, it is critical that impact investments in agriculture implement standard measurement and reporting tools of social and environmental outcomes.

Some agricultural companies and investment managers are creating and applying their own measurement systems for impact investments, while others are relatively new and lack information on impacts achieved, qualitative and in particular quantitative. It is highly recommended that impact measurement should be integrated right from the beginning when structuring an agricultural investment project.

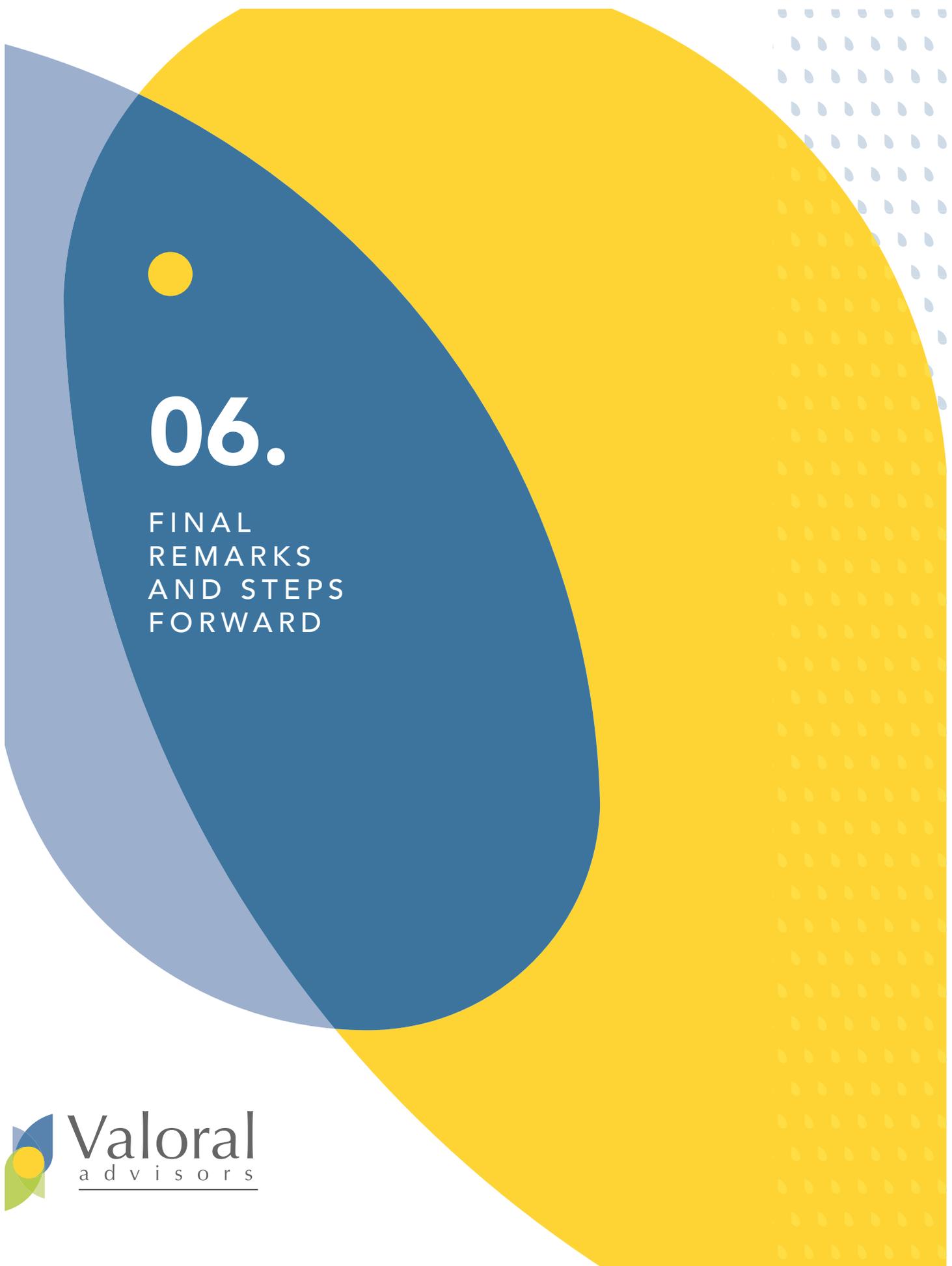
There are some organisations that attempt to drive standardization of measurement and reporting and that can be very helpful when developing an impact investment project. Some of these organizations are:

- The Sustainable Agriculture Initiative Platform, which has developed a set of tools and guidance to support global and local sustainable sourcing and agricultural practices, including agricultural sustainability indicators and metrics.
- B Impact Assessment, that provides a tool to assess a company's overall social and environmental performance;
- The Impact Reporting and Investment Standards (IRIS);
- The Global Reporting Initiative, that provides widely adopted global standards for sustainability reporting;
- The Alliance for Water Stewardship (AWS) standard, which defines a set of water stewardship criteria and indicators for how water should be managed at a site in a way that is environmentally, social, and economically beneficial,
- The SPI4, a free social performance audit tool for financial service providers.

A common language for social and environmental performance metrics will encourage transparency, credibility and comparability, just as the International Financial Reporting Standards (IFRS) provide transparency and comparability across financial performance reports.

In addition to environmental and social performance measurement and reporting, we see strong growth in the use of third-party certifications that add extra credibility to agricultural products in the areas of forest management, sustainable seafood and good agricultural practices.

Some examples of these certifications are: FSC Forest Stewardship Council; UTZ Certified for coffee, cacao and nuts; "Agriculture Biologique" in France; USDA Organic; Certified 100% Grass Fed; CO2Neutral; Fair to Nature; Fair Trade Certified; Non GMO Project; Animal Welfare Approved, among others. These certifications provide customers and consumers the assurance that the agricultural products have been produced under certain desired criteria.



06.

FINAL
REMARKS
AND STEPS
FORWARD

06. Final remarks and steps forward

We have now better knowledge of impact investments in general as well as deeper understanding of main impact investment opportunities within the food and agriculture industry.

We understand that the agriculture sector contributes significantly to climate change. Agriculture faces the great challenge and responsibility to mitigate climate change and to preserve our natural capital, while at the same time become increasingly resilient to climate change risks, increase food production to feed a growing global population, and foster social equity and caring for the poor rural livelihoods. Given this context, impact investments in agriculture become very important.

From our analysis we realise that impact investments in agriculture have started only recently but have been growing firmly during the last five years and will continue to grow in the future. We have developed a practical and comprehensive framework that describes the main impact themes and activities that can be addressed when developing an agricultural impact investment project, and that are aligned with the Sustainable Development Goals.

As all other impact investments, agricultural impact investments face the challenge to implement unified measurement and reporting standards for environmental and social outcomes, which help to compare and evaluate results, find areas of improvement and build trust among investors.

Impact investments in agriculture represent a huge opportunity to implement deep changes in farming methods and adopt new ways of producing food that help mitigate climate change, help respect the environment and biodiversity, enhance food security and climate change resilience and promote social equity and fairer agricultural livelihoods.

As Kate Raworth explains in her impressive book “Doughnut Economics”, we need to produce in a way that supports the creation of a thriving economy and that allows us to live within the doughnut, where impact investors can develop agricultural projects that contribute to respect the higher boundary of the planet Earth’s ecological ceiling and the environment in which we live in as well as the lower boundary of our social foundation through promoting greater social equity and better agricultural livelihoods.

As we reach the end of our study, we invite you to speak further about investing for impact in the broad food and agriculture sectors. Count on us to make it happen.

07.

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About Valoral Advisors

Valoral Advisors is an internationally recognized advisory Firm specialized in the global food and agriculture investment space. We work with fund managers, private & institutional investors, and business owners to help them invest profitably whilst fostering a better agriculture – more productive, more efficient, and more sustainable.

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