Impact Report 2022

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About this report

This report is prepared by SLM Partners, covering the activities of the firm globally for the year 2022.

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Executive Summary

Founded in 2009, SLM Partners has been a pioneer in natural capital investing for more than a decade. As a specialist real assets manager, we invest directly in land, currently managing over 289,167 ha of agricultural and forestry land across the USA, Australia and Europe. Our mission is to use capital to scale up regenerative farming and forestry systems. All of our strategies seek to generate market-rate returns and positive impacts on soils, biodiversity, carbon, water and rural communities.

Our world is faced with major environmental challenges: degrading soils, depleting water reserves, shrinking biodiversity and, perhaps most urgently, climate change. Industrial farming and forestry systems are major contributors to these problems. But there are ecological farming and forestry systems that can grow the food and materials we need, while rebuilding soils, preserving water, restoring biodiversity and absorbing carbon from the air. These systems are not just sustainable but "regenerative". In many cases, they can also generate better risk-adjusted economic returns, because they are less exposed to volatile input costs, more resilient to a changing climate and can tap into higher value markets. These systems need to be scaled up and we believe that investment capital can accelerate this.

2022 was a milestone year for SLM Partners, with a 117% YoY growth in assets-under-management, reaching a total of $435 million. As we scale, SLM Partners expands its reach; implementing proven, but not yet mainstream, regenerative land practices across more land. This year, we expanded our reach through new investments in both the USA and Europe. The land systems we invest in span row crops, permanent crops, grasslands, agroforestry and forestry.

Our impact is driven by changes in management practices we implement on our properties. In agriculture, we transition land away from conventional management (characterized by chemical fertilizers, pesticide usage, intensive tilling and monocultures) towards organic and regenerative systems. In forestry, we move away from conventional clear-felling regimes and adopt "close to nature" forestry, also known as Continuous Cover Forestry (CCF). These practices protect and restore soil fertility, enhance water quality, boost carbon storage and increasing climate resilience.

This is our third global impact report. It describes our approach to impact, our theory of change and key results achieved in 2022 for each of the land systems we invest in.

Scaling regenerative land management systems that enhance natural capital has been the mission of SLM Partners from the onset. We look forward to continuing our journey with investors, farmers, foresters and our other partners.

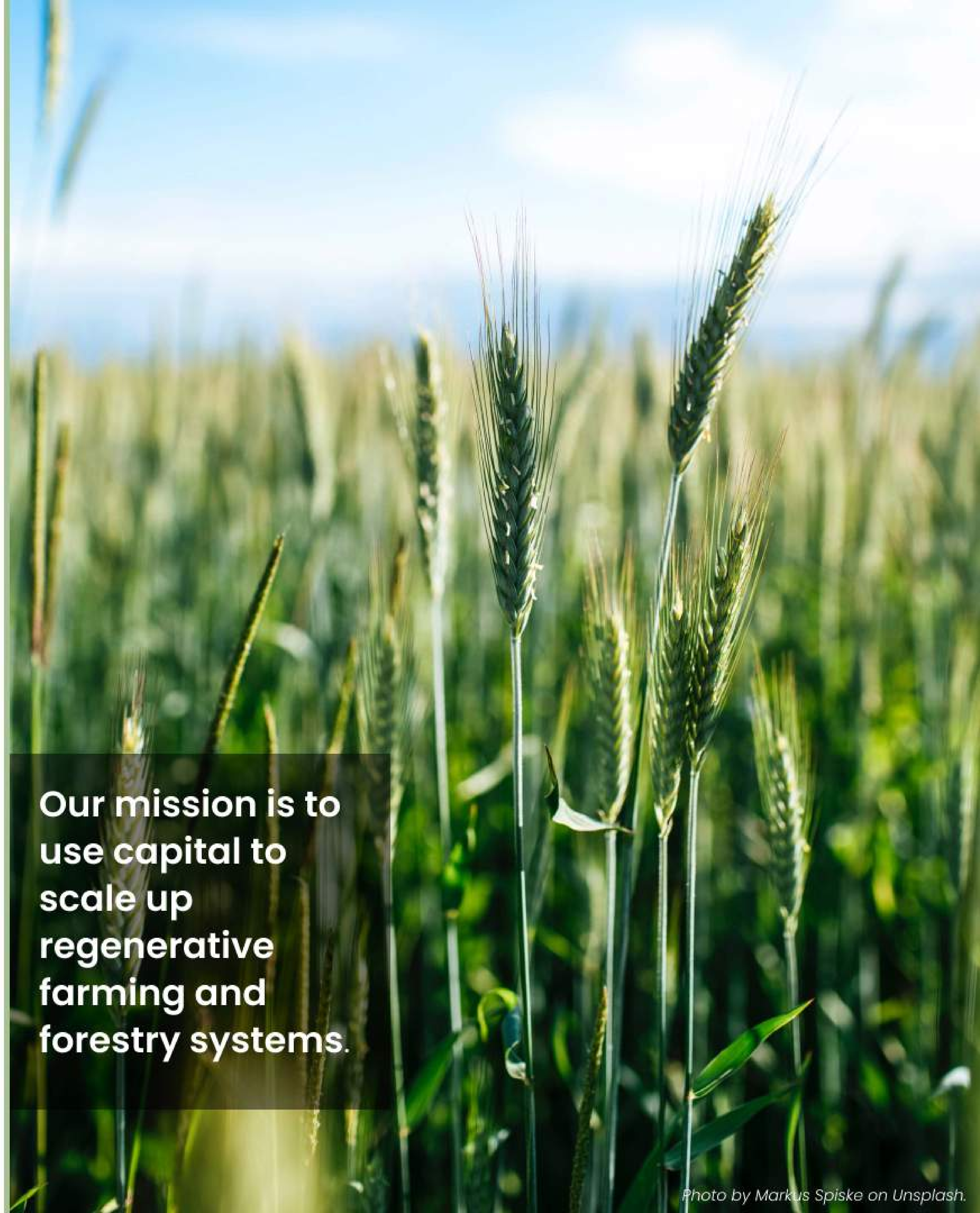


Photo by Markus Spiske on Unsplash.

01

Key Impacts

2022

Landscape with traditional olive orchards in Portugal.

2022 At a Glance...

289,167 ha
of Land-under-Management

$435 million
of Assets-under-Management

Photo by Marcia Cripps on Unsplash.

Land Use

100% of land under regenerative management practices

91% of cropland organic certified or in transition to organic certification

100% of cattle raised in natural grassland with holistic grazing management

66% of forestland managed under Continuous Cover Forestry (CCF)

Products grown

21,234 tonnes
of organic cereals and oilseeds harvested

690,350 kg
of fruits and nuts harvested

44,002m³
of timber growth

2,563,778 kg
of pasture-raised beef (liveweight) grown

01 Key Impacts
Five Impact Themes

Climate
Mitigation & Adaptation

Turning landscapes into carbon sinks and increasing resilience to climate extremes

- **20,440 tCO2eq** sequestered by our Irish forests in 2022, storing a total of 419,515tCO2eq;
- Pilot project in the USA demonstrating potential to sequester **1.45 tCO2 / acre / year** (or 3.6 tCO2eq/ha/year) in Illinois under organic cropping transition;
- **1,735,613 Australian Carbon Credit Units** (ACCUs) generated and sold from 2016 to 2022 from native woodland restoration, of which 100,912 ACCUs were sold in 2022.

Biodiversity

Improving species diversity on farms and in forests

- Less than **0.02% of the area** (53 ha) managed with pesticides;
- **99,543 ha**, totalling 34% of managed land dedicated to biodiversity conservation and restoration;
- **2,625 ha**, totalling 91% of total cropland managed, certified organic or in transition to organic certification.

Soils

Reversing land degradation and building healthy, living soils

- **100%** of farmland managed with regenerative practices;
- **Soil analysis performed** across all newly acquired farmland to establish baseline in soil health and carbon stocks.

Water

Increasing water use efficiency and reducing pollution of waterways

- **275 ha** of land managed with irrigation;
- **100%** of irrigation systems using efficient drip irrigation technology.

Society

Revitalising rural communities while growing safe, healthy products for consumers and supporting training and knowledge sharing

- **112 full-time equivalent** (FTE) direct jobs created across all operations;
- **81 local farmers** employed or partnered with;
- **Over 21,000 tonnes** of organic cereal and oilseeds grown.

15 LIFE ON LAND

13 CLIMATE ACTION

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

3 GOOD HEALTH AND WELL-BEING

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

6 CLEAN WATER AND SANITATION

8 DECENT WORK AND ECONOMIC GROWTH

2 ZERO HUNGER

SDGs Impacted

The management practices we implement across our properties contribute directly to SDG 15: Life on Land. Across the land under our control, 100% is managed regeneratively, less than 0.02% is treated with pesticides and 34% is dedicated to protecting and restoring biodiversity.

Our strategy also directly support SDG 13: Climate Action by building nature-based carbon capture solutions in trees and soils. As of 2022, our Irish forests store 419,515 tCO2eq and the timber harvested from those forests supplies the market for more sustainable building materials (SDG 9: Industry, Innovation and Infrastructure). In Australia, we developed 4 carbon projects covering 163,733 hectares. The projects support the regeneration of native vegetation, namely native Mulga trees, to regenerate the land naturally into forest. The total amount of carbon sequestered under this project over 25 years is forecasted to be 4,508,731 tCO2eq (ACCUs), a sum that equate to 10,438,665 barrels of oil consumed .

In 2022, we grew a total of 21,234 tonnes of organic cereals and oilseeds and 690,350 kg of fruits, directly supporting SDG 1 ZERO Hunger and SDG 3 Good Health and Wellbeing. To grow this food, we supported the activities of 112 (FTE) farmers, contributing to SDG 8 Decent Work and Economic Growth. By supporting the transition to organic and regenerative systems, moving away from synthetic fertilizers and building back soil health, our practices also impact SDG 6: Clean Water and Sanitation by reducing the risk of pollution in waterways and restoring the soil's ability to capture and retain water.

Photo by Etienne Girardet on Unsplash.

02

About SLM Partners

SLM Partners property in the US Midwest.

What we do and why we do it

The pitfalls of conventional agriculture and forestry today...

Agriculture and forestry cannot be dissociated from nature; they are highly dependent on it. However, conventional food and timber production systems tend to exploit, rather than work with, nature. This exposes them to many risks. They rely heavily on external inputs, which can be expensive and volatile, eroding margins. They degrade the natural capital – soils, water and biodiversity – on which they depend. Over-specialised landscapes with few species are more vulnerable to a changing climate and more susceptible to pests and diseases.

3 out of the 5 biggest drivers of nature loss are directly linked to industrial agriculture and forestry [1]. Current mainstream agricultural and forestry practices fail to address the pressing challenges of today and contribute to carbon emissions, soil degradation, water depletion, pollution and biodiversity extinction. These negative environmental externalities – such as water pollution – will be increasingly taxed or regulated. As consumers wake up to their environmental impacts, consumption trends are shifting, leaving traditional operators exposed.

.....and the rise of regenerative systems as the attractive alternative

There are alternative ways to manage land that can minimise these risks, generate a positive environmental impact while increasing profitability.

All around the world, there are brilliant farmers and foresters who have developed profitable regenerative systems. Their systems build soil health, minimise external inputs and production costs, recycle nutrients and energy, embrace produce diversity, create carbon sinks, restore biodiversity and produce high value food, fiber and timber. Their systems enhance and protect their natural capital instead of depleting it, addressing altogether our need for food and materials, climate change adaptation and mitigation and biodiversity.

These farmers and foresters need capital to grow and transition more land to regenerative systems. In developed countries, where we focus, investors can directly assist by acquiring or leasing land and placing it in the hands of these expert operators. Successful investment strategies involve long-term partnerships between investors and carefully-selected farmers and foresters, acting as stewards of the land with aligned incentives.

We believe that regenerative land systems can deliver superior risk-adjusted returns, while generating tangible positive environmental impacts at scale.

Photo by Teona Swift on Pixels.

02 About SLM Partners

Our Investment Approach

SLM Partners integrates impact into the core of its investment strategies. Through a combination of top-down and bottom-up analysis, we design strategies that deliver positive environmental impacts within a robust financial context.

We believe that we can only achieve truly sustainable financial returns when the underlying natural capital is also thriving.

Top-down analysis

As part of our pre-investment research, we select low-risk, stable geographies that possess competitive agricultural and forestry sectors. We identify specific products and markets that are aligned with our regenerative land management philosophy but also have attractive supply-demand dynamics and good growth prospects. We then pick regions within selected geographies that offer a favourable combination of attractive land values and suitable soil and climatic conditions for growing our target products. We also assess climate change risk and understand how this can be mitigated by improved land health.

- Focus on lower-risk developed countries
- Target competitive agricultural and forestry regions
- Identify attractive commodity markets
- Understand land markets and economics
- Perform climate impact assessment

Bottom-up analysis

This part of our process happens concomitantly with the top-down analysis. Our starting point is identifying regenerative land management systems that deliver superior profits and clear environmental benefits and that can be scaled. We rely on the local knowledge of farmers and foresters who have a strong track record in managing such systems. We then select the best operators to partner with, thus reducing our execution risk. Local partners also play a key role in originating deals, finding off-market opportunities and assisting in due diligence when purchasing properties.

- Identify profitable and scalable regenerative systems
- Partner with best-in-class land operators
- Assess environmental and social impacts
- Develop pipeline and investment opportunities

SLM Partners organic grain property in the US Mid West.

02 About SLM Partners

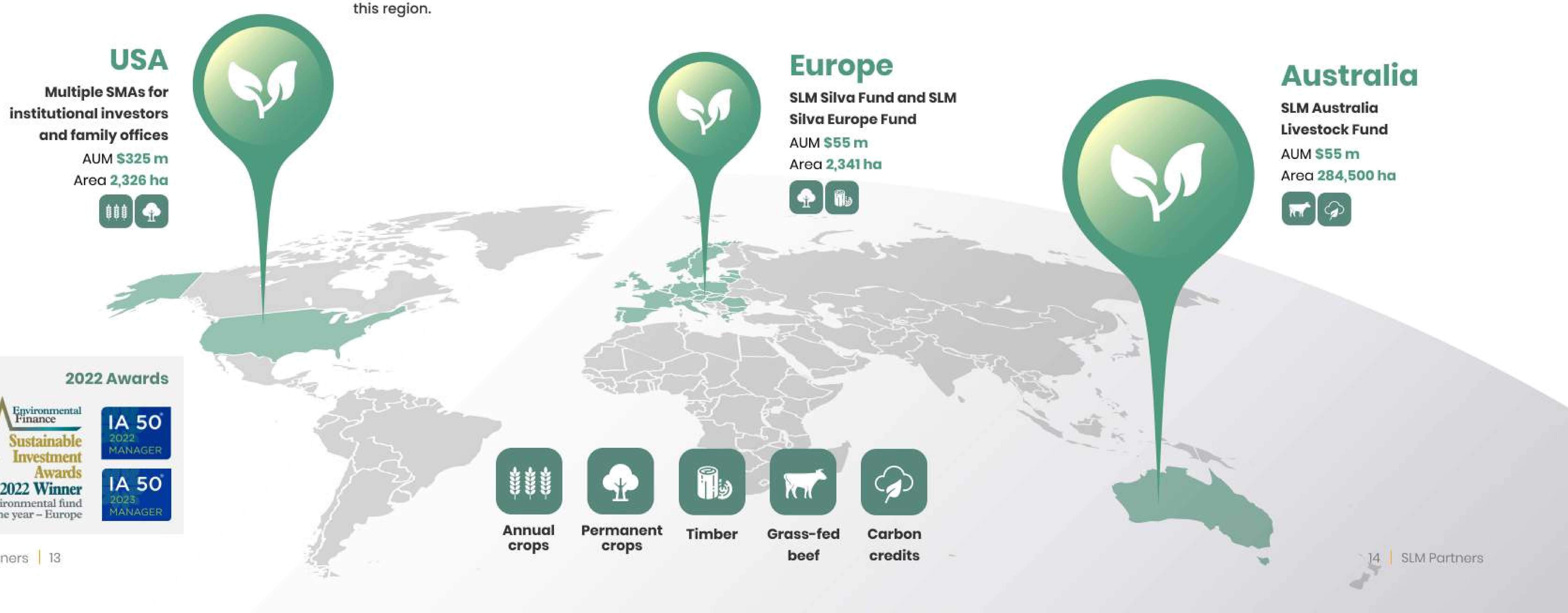
Our Strategies

As of December 2022, SLM Partners manages a total of $435 million in assets across the US, Australia and Europe investing in farmland and timberland.

In the US, our business grew substantially in 2022 with the creation of a new Separate Managed Account (SMA) to invest in organic irrigated specialty crops. With this new mandate, SLM Partners expanded its reach across more regions within the US, including California, Washington and Oregon, and more varieties of crops – namely citrus, nuts, berries and other specialty crops. We also more than doubled the size of our existing SMA that invests in organic row crops in the US Midwest and increased deployment in this region.

In Europe, the focus this year has been on SLM Silva Europe Fund - our latest fund launch. The Fund targets productive tree crop systems for the production of nuts, olives, timber and cork oak, primarily in Spain, Portugal and Ireland. The Fund had a first close in December 2021 and completed 3 acquisitions this year. The Fund will continue to be open for investments until the end of 2023.

In Australia, our focus was on operating the existing assets of the SLM Australia Livestock Fund. Benefiting from favourable weather conditions and strong beef markets, we continued to rebuild the cattle herd and strengthen our farm management team. We also took advantage of developments in Australian carbon markets to increase revenues from our carbon projects.



2022 Awards

Environmental Finance Sustainable Investment Awards 2022 Winner Environmental fund of the year – Europe

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02 About SLM Partners

Our History

2022
Establishment of new $125m US Organic Permanent Crop SMA & expansion of US Organic Row Crop SMA to $200m

2021
1st close of SLM Silva Europe Fund

2020
Establishment of $75m US Organic Row Crop SMA

2018
1st close of SLM Silva Fund, anchored by European Investment Bank

2017
Development of US organic farmland strategy

2016
JV with Irish forest company to develop SLM Silva Fund

2012
Launch of SLM Australia Livestock Fund AU$75m

2010
JV with Australian management partners to develop beef cattle strategy

2009
Establishment of SLM Partners


Cork oak forest in Iberia.


SLM Partners continuous cover forestry site in Ireland.

03

Our Impact Approach

Impact themes

Climate
Mitigation & Adaptation

The Challenge

The way we use land and grow food are major contributing factors to climate change, the greatest environmental challenge of our time. A report published by Nature Food estimates that food systems accounted for 34% of global greenhouse gas (GHG) emissions in 2015 [2]. The world's soils store vast amounts of carbon: between 1,500 and 2,400 Petagrams (Pg) of organic Carbon [3]. This equates to three to four times the amount of carbon in vegetation and twice to three times the amount in the atmosphere. As soil degradation advances across the globe, it is estimated that around 1.32 PgC of soil organic carbon is released into the atmosphere annually [4], representing 11.4% of annual anthropogenic emissions in 2019 [5].

Aside from being a key contributor to climate change, agricultural and forestry systems are vulnerable to changes in climatic patterns as extreme weather events such as droughts and floods have negative impacts on crop and forest productivity [6].

Our Solution

Natural climate solutions are one of the most practical and cost-effective climate change mitigation strategies available. The conservation and restoration of natural habitats, combined with improved land management actions across global forests, wetlands, grasslands and agricultural lands, can provide up to 37% of the emission reductions needed by 2030 to keep global temperature increases under 2°C [7].

Implementing regenerative land management actions, such as reduced tillage [8], diversified crop rotations, [9], cover cropping [10], sound grazing management [11], compost and manure application, and whole orchard recycling, all contribute to building healthy soils with greater carbon sequestration potential.

Our farms also reduce their dependencies on fossil-fuel based inputs, namely synthetic nitrogen fertilisers, which is a large contributor to emissions in conventional farming. Farmers can also reduce nitrous oxide (N2O) – a potent greenhouse gas – emissions by introducing nitrogen-fixing cover crops, manure and compost.

In our forests, we can increase carbon stocks in soils and standing trees through better management practices, while also increasing the production of long-lived wood products (e.g. construction material) for longer carbon storage.


Photo by Aaron Burden on Unsplash.

> These practices also strengthen resilience to climate change and offer a path towards climate adaptation.

These practices also strengthen resilience to climate change and offer a path towards climate adaptation. For example, increased soil carbon is the key driver for enhancing soil health, improving water cycles and promoting microbial diversity. More biodiverse farms and forests can better withstand extreme weather.

Biodiversity

The Challenge

Our planet depends on biodiversity to support critical biological processes, underpin ecological functions, drive environmental resilience and ultimately sustain life. Yet, the world is facing a dangerous and accelerating loss of biodiversity as natural habitats are displaced to make way for agriculture [12], commercial forestry, and urbanization. The global rate of species extinction is at least tens of times, and possibly hundreds of times, higher than the average rate over the past 10 million years [13]. It is estimated that the population sizes of mammals, birds, fish, amphibians and reptiles has declined 68% on average since 1970 [14].

The production of food has been the primary cause of biodiversity loss globally in the last 50 years [13]. This is mostly driven by the conversion of natural habitat to agricultural production, the intensification of agricultural systems, and the proliferation of single-species forest plantations. The heavy reliance on synthetic fertilisers and pesticides undermines biodiversity at the farm and forest level and can lead to nutrient and chemical runoff into waterways and ultimately into oceans [15]. This negatively impacts wildlife (i.e. mammals, birds and reptiles), insects, pollinators and aquatic life but also vital macro and microorganisms that live below the ground.

Our Solution

To halt, and potentially reverse, biodiversity loss, a rehaul of land use is required. This means not just protecting natural habitats but promoting biodiversity-friendly practices on agricultural and forest land as well. Of the 104 million km2 of habitable land, 50% is devoted to agriculture, 37% to forest, 11% to shrub and grassland, and only 1% to urban and freshwater, each [15]. As such, promoting the restoration of biodiversity on agricultural land and managed forest sites is of the utmost importance.

The shift to regenerative management can take many forms, depending on the context. It includes:

1. Reduce or remove chemical inputs to increase the presence of beneficial insects (e.g. dung beetles and bees) and protect soil microbiology,
2. Introduce cover crops in both annual and permanent cropping systems to control for soil erosion and support biodiversity above and below ground,
3. Transition away from monocultures to longer and diverse crop rotations or polycultures,
4. Adopt holistic planned grazing that promotes a diverse set of perennial grasses, legumes and forbs, with deeper root systems,
5. Protect the forest habitat by avoiding clear-felling and promote natural understory forest regeneration,
6. Adopt more resource efficient practices for nutrient management (e.g. composting and pruning residue management).

The benefits from these practices range from reduced soil erosion and nutrient runoff [17], reduced pest and disease pressure on crops [18], large increases in the presence of macro and microorganisms on farms [19], greater wildlife and beneficial fungi in forests [20], enhanced soil microbial activity and the maintenance of diverse perennial grasses, legumes and forbs in natural grasslands [21].

Photo by Benjamin Balazs on Unsplash.

Soil profile from SLM Partners recent acquisition in Portugal.

03 Our Impact Approach

Soils

The Challenge

Land degradation is one of the most pressing, and lesser known, risks that humanity faces. Soils underpin the biogeochemical processes required to sustain the necessary expansion of food, timber and fibre production for a growing population, as well as providing ecosystem services, such as carbon sequestration, nutrient supply and water regulation, that are necessary for life on earth [22]. Ancient civilisations evolved, and subsequently failed, by exploiting soils for food and energy until reaching a breaking point [23].

According to the UN Food and Agriculture Organisation (FAO) most of the world's soil resources are currently in fair, poor or very poor condition with 33% of land being considered moderately to highly degraded [24]. This is caused by destructive land management practices in arable, grazing and forestry systems, which results in erosion, compaction, acidification, salinisation or loss of soil microbiology, and a rapid decline in soil health.

Our Solution

The good news is that this process can be mitigated, and in many cases reversed, through the adoption of regenerative land management practices [25].

By adopting more diversity of crops, year-round ground cover, biological fertility and a reduction in chemical inputs, our farmers can improve soil microbiology and gradually increase levels of soil organic matter. Reducing tillage and avoiding clearfelling events, helps reduce soil disturbance and compaction in our farms and forests.

Integrating a number of these context-specific regenerative crop and pasture management practices can help soils sequester atmospheric carbon and turn it into soil organic carbon (SOC), which is fundamental to sustain soil health and soil fertility [26]. The benefits of increased SOC range from improving soil structure and aeration [27] and enhancing water cycles [28], to restoring microbial functions that support agricultural and other terrestrial life systems.

For farmers and foresters, the practical benefits of improving soil health are clear. Healthy soils have improved nutrient cycles [29], lower compaction [27], and abate soil-borne diseases [30], allowing for the reduction of external fertilisers and chemical inputs. Healthy soils can also mitigate the impact of droughts and floods because of improved water infiltration and water holding capacity [28], leading to higher yields [31] and more stable production. Ultimately, healthy soils allow for a substantial improvement in resource efficiency [27] while sustaining or improving agricultural and forestry output.

Pruning residue from organic olive orchards mulched and left onsite to support soil health.

Water

The Challenge

Water is a critical input for all agricultural systems. The United Nation Food and Agriculture Organisation (UN FAO) estimates that agriculture irrigation accounts for 70% of water use worldwide. In some climatic contexts, irrigation is the only viable method to produce food. Left unchecked, and supported by poorly regulated water markets, water scarcity has become a real global issue with 3.2 billion people living in agricultural areas with high to very high-water shortages or scarcity [32]. This trend will be further exacerbated by climate change, with rainfall patterns becoming less reliable and extreme events more common [33].

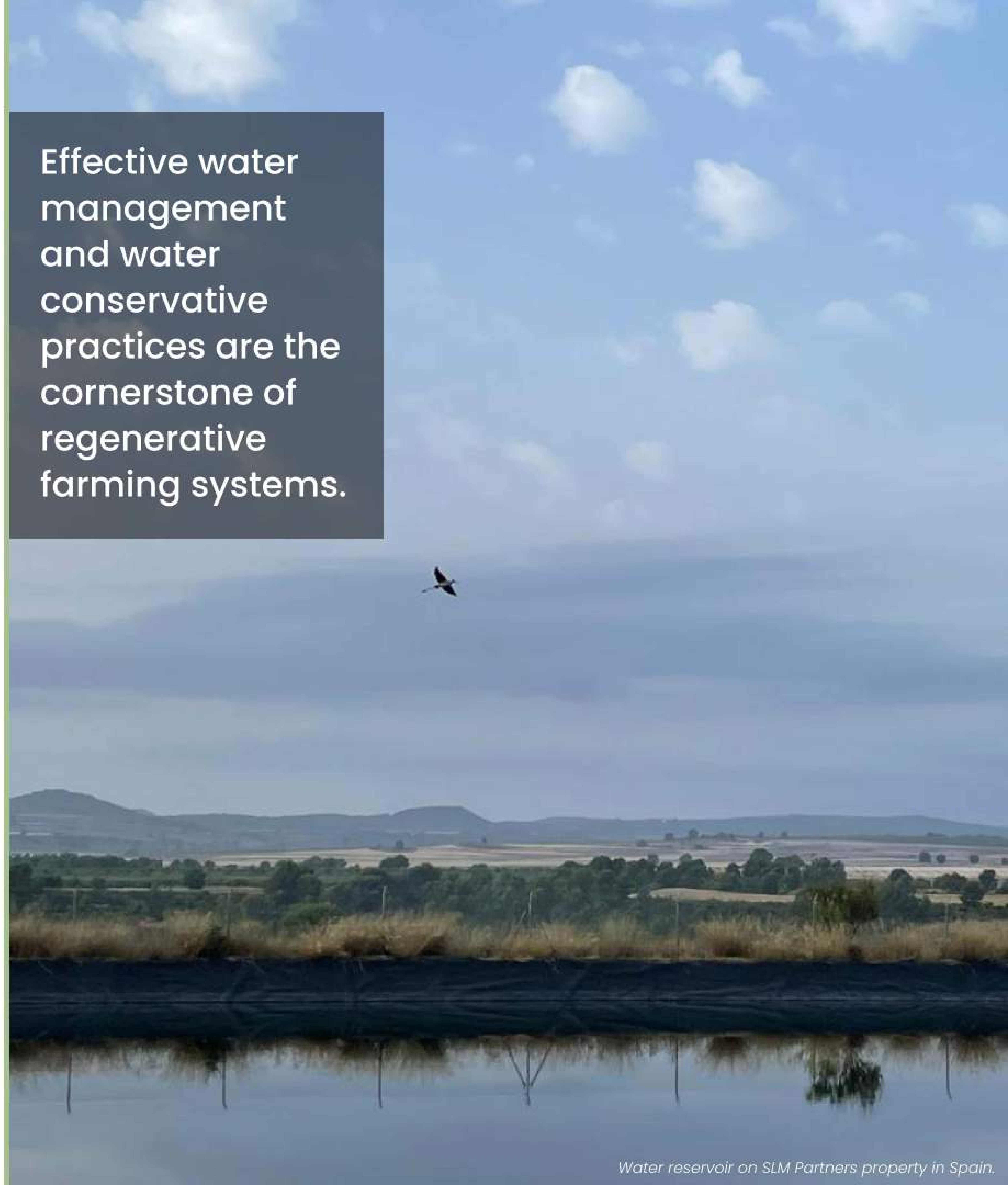
Beyond the challenge of water scarcity, water quality has also become a broader societal issue. As mentioned in the biodiversity section, soil erosion and nutrient runoff has led to the eutrophication of water bodies, loss of freshwater biodiversity and creation of coastal dead zones. Yet, the excess loading of fertilisers and chemicals into rivers and groundwater is also posing risks to drinking water quality even with conventional water treatment [33]. Many of these pollutants are also bio-accumulated through the food web and are toxic to living organisms, including humans and wildlife [34].

Our Solution

Effective water management and water conservation practices are the cornerstone of regenerative and nature-based farming systems. The same practices that promote soil health such as maintaining year-round ground cover, minimal soil disturbance and proper crop rotation also help to regulate the flow of water on the landscape with improved water infiltration and retention in the soil profile, thus reducing the impact of droughts [35].

Enhancing water cycles is of particular importance to dryland farming and forestry solely dependent on rainfall. This also leads to greater water quality by reducing nutrient run-off and sedimentation of waterways. In our US farms, the elimination of synthetic fertilisers and the introduction of cover crops minimises the run-off of nitrates and phosphates into streams - a major issue in the US Midwest.

For irrigated systems, the adoption of these soil and water conservation practices is also paramount and they remain the most effective strategy to address nutrient management, water quality and irrigation efficiency challenges.



Effective water management and water conservative practices are the cornerstone of regenerative farming systems.

Water reservoir on SLM Partners property in Spain.

Society


Stone fruit orchard

Our organic farms grow nutritiously-dense and chemical-free food.

The Challenge

Rural areas across the developed world have suffered from loss of livelihoods and depopulation, as economic growth has been focused on urban areas. Those who decide to stay on the land are now older and often struggle to find successors. According to the Australian Bureau of Statistics (ABS), the average farmer in Australia is 56 years old. Similar patterns can be observed in most of the developed world. Beyond the age problem, those who are young and want to start a journey into regenerative farming are held back by knowledge and funding gaps.

Conventional agricultural and forestry systems, while efficient and highly productive, can create negative externalities for society [36]. In the drive for yield, the nutritional value of vegetables, grains, meat and dairy products, represented by key minerals, vitamins and proteins, has declined by up to 40% over the last 50 to 70 years [37]. Suboptimal diets are leading risk factors for poor health globally and responsible for up to 45% of all cardio-metabolic disease deaths in the US. The overuse of pesticides leads to an increased level of chemical residues in many foods, with proven negative consequences for human health [38]. In commercial forestry sites adopting monocultures and clear-felling, the amenity value of forests is low and is often unpopular with local communities

Our Solution

At the most basic level, the pursuit of regenerative farming and forestry can create new economic opportunities for farmers and foresters, helping to revitalize rural communities. Public and private sector initiatives can help bridge the knowledge and financial gap required to support rural operators, in transition to more ecological production systems. Through our activities, we support targeted education initiatives by partnering with external consultants, NGOs and universities, including SelectFor, ESMC, The Rodale Institute, Regeneration Academy and Wageningen University.

All of our investments are rooted in long-term partnerships with regenerative farmers. Our presence in the market offers improved access to land for regenerative and organic farmers, as well as greater availability of suitable financial products such as longer-term and flexible loans attached to environmental outcomes.

Our farms grow healthy, nutritiously-dense, and chemical-free food with clear health benefits for consumers.

Regenerative farms and forests also promote healthier environments for workers and for local communities. By avoiding clear-felling, we can develop forests with greater aesthetic and amenity value for local communities through time.

03 Our Impact Approach

Measuring & Reporting

From the ground up...

Through our land management choices, we have a direct impact on land, soils, water, carbon, biodiversity and local communities. It's up to us to ensure that we collect the necessary data needed to appropriately monitor, manage and report on this impact.

Data collection

We collect primary data directly from the farms and forests that we operate, by partnering closely with our local operators. This includes data points around land-use, biodiversity actions, inputs used, crops planted and results from soil analysis. Our objective is to maintain a cost- and time-efficient process that delivers decision-useful information for our investors, our investment teams and, most importantly, our farmers and foresters.

Third-party expertise and verification

Where possible, we leverage external consultants to provide more technical datasets, for example, hiring a local ecologist to perform an ecological survey of wild flowers and birds in and around a farm. We also rely on partnerships with NGOs and carbon developers to verify our carbon methodologies and analysis (e.g. our partnership with ESMC). For some of our assets, data collection and analysis is facilitated by research grants or partnerships with research institutions such as Regeneration Academy. Thanks to a technical assistance grant funded by EU LIFE, scientists from ETH Zurich are collecting data from our Irish forests to study the microbiomes of forest soils (check out this TedTalk to learn more). Finally, certification processes are also key to ensure independent third-party verification of our claims and results achieved on the ground.

Portfolio Reporting

After collecting data from the farms and forests, we aggregate the data into key impact metrics within accepted reporting standards. To do this, we leverage two high-level frameworks: the Global Impact Investing Networks (GIIN) IRIS+ and the UN Sustainable Development Goals (SDGs). The IRIS+ database offers industry-specific metrics through which we can assess and monitor our aggregated impact performance, zooming into what is most material for our asset base. The IRIS+ metrics we measure and report on are presented in the next pages. Each IRIS+ metric is also mapped to one or more SDGs.

USDA Organic

All of our farms in the US are certified USDA organic or in transition. This process requires verification from certified agents to inspect the fields, soil conditions, crop health, fertilisers used, approaches to management of weeds and other crop pests, water systems, storage areas and equipment.

EU Organic

Our organic farms in Europe follow strict rules on methods of production, namely around the use of synthetic fertilisers and other chemical inputs. These organic producers are verified once a year by a control agent to ensure proper adherence to the standard.

PEFC and FSC

We are committed to having 100% of our Irish forests certified under the most relevant certification scheme for our forestry product, Programme for the Endorsement of Certification (PEFC), or the Forest Stewardship Council (FSC).

Photo by Yusuf

03 Our Impact Approach
Selected IRIS+ Metrics

GIIN IRIS Metrics	Description	Type	Reporting Format	Primary Impact Category	Other Impact Categories	SDGs
Crop Type	Type of crop(s) produced by the organization during the reporting period.	Qualitative	Selection	Agriculture	Biodiversity & Ecosystems, Employment, Health, Land	2, 6, 8, 9, 12, 15
Livestock/Fish Type	Type of livestock product(s) produced by the organization during the reporting period.	Qualitative	Selection	Agriculture	Biodiversity & Ecosystems, Employment, Health, Land	2, 6, 8, 9, 12, 15
Land Directly Controlled: Total	Area of land directly controlled by the organization during the reporting period.	Quantitative	ha	Agriculture	Biodiversity & Ecosystems, Employment, Health, Land	2, 6, 8, 9, 12, 15
Land Directly Controlled: Cultivated	Area of land directly controlled by the organization and under cultivation (i.e. minimum-till, seeding).	Quantitative	ha	Agriculture	Biodiversity & Ecosystems, Employment, Health, Land	2, 6, 8, 9, 12, 15
Land Directly Controlled: Sustainably Managed	Area of land directly controlled by the organization and under sustainable cultivation or sustainable stewardship.	Quantitative	ha	Agriculture	Biodiversity & Ecosystems, Employment, Health, Land	2, 6, 8, 9, 12, 15
Land Directly Controlled: Treated with Pesticides	Area of land directly controlled by the organization and treated with pesticides.	Quantitative	ha	Agriculture	Biodiversity & Ecosystems, Employment, Health, Land	2, 6, 8, 9, 12, 15
Biodiversity Assessment	Indicates whether the organization has undertak en biodiversity-related assessments to evaluate the biological diversity present on the land that is directly or indirectly controlled by the organization.	Qualitative	Yes/No	Biodiversity & Ecosystems	Biodiversity & Ecosystems	2, 6, 8, 15
Greenhouse Gas Emissions Strategy	Indicates whether the organization implements a strategy to reduce greenhouse gas (GHG) emissions.	Qualitative	Yes/No	Climate	Air, Energy, Land, Pollution	3, 8, 9, 12
Greenhouse Gas Emissions Avoided Due to Carbon Offsets Sold	Amount of greenhouse gas (GHG) emissions avoided through carbon credits sold during the reporting period.	Quantitative	Metric Tons of Quantitative co_2 equivalent	Climate	Air, Energy, Land, Pollution	3, 8, 9, 12
Greenhouse Gas Emissions Sequestered	Amount of greenhouse gas (GHG) emissions sequestered by the organization during the reporting period.	Quantitative	Metric Tons of Quantitative co_2 equivalent	Climate	Air, Energy, Land, Pollution	3, 8, 9, 12
Greenhouse Gas Emissions Mitigation Types	Indicates greenhouse gas emissions mitigation types applied by the organization during the reporting period.	Qualitative	Selection	Climate	Air, Energy, Land, Pollution	3, 8, 9, 12

03 Our Impact Approach
Selected IRIS+ Metrics

GIIN IRIS Metrics	Description	Type	Reporting Format	Primary Impact Category	Other Impact Categories	SDGs
Forest Management Plan	Indicates whether the organization implements Qualitative a forest management plan.	Qualitative	Yes/No	Land	Agriculture, Biodiversity & Ecosystems, Employment, Climate, Water	2, 6, 12, 15
Type of Land Area	Describes the type(s) of land present on hectares directly or indirectly controlled by the organization. Report for hectares controlled Qualitative Selection at any point during the reporting period.	Qualitative	Selection	Land	Agriculture, Biodiversity & Ecosystems, Employment, Climate, Water	2, 6, 12, 15
Ecosystem Services Provided	Describes the ecosystem services provided by land directly or indirectly controlled by the organization, during the reporting period.	Qualitative	Selection	Land	Agriculture, Biodiversity & Ecosystems, Employment, Climate, Water	2, 6, 12, 15
Area of Trees Planted: Native Species	Area of land on which native species of trees were planted by the organization during the reporting period.	Quantitative	ha	Land	Agriculture, Biodiversity & Ecosystems, Employment, Climate, Water	2, 6, 12, 15
Area of Trees Planted: Total	Area of land on which trees were planted by the organization during the reporting period.	Quantitative	ha	Land	Agriculture, Biodiversity & Ecosystems, Employment, Climate, Water	2, 6, 12, 15
Ecological Restoration Management Area	Area of land under ecological restoration management during the reporting period.	Quantitative	ha	Land	Agriculture, Biodiversity & Ecosystems, Employment, Climate, Water	2, 6, 12, 15
Soil Conservation Practices	Indicates whether the organization implements best soil conservation practices to minimize soil erosion and avoid degradation of agricultural lands.	Qualitative	Selection	Land	Agriculture, Biodiversity & Ecosystems, Employment, Climate, Water	2, 6, 12, 15
Soil Health Practices	Indicates which sustainable agriculture best practices the organization implements to maintain and enhance soil health of agricultural lands.	Qualitative	Selection	Land	Agriculture, Biodiversity & Ecosystems, Employment, Climate	2, 6, 12, 15
Water Quality Pratices	Indicates whether the organization employs management practices for water quality protection.	Qualitative	Yes/No	Water	Land, Biodiversity & Ecosystems, Agriculture, Climate, Waste	6, 8, 9, 12, 13
Level of Water Stress	Level of baseline water stress on land directly or indirectly managed by the organization asof the end of the reporting period.	Qualitative	Selection	Water	Land, Biodiversity & Ecosystems, Agriculture, Climate, Waste	6, 8, 9, 12, 13
Water Withdrawn	Volume of all water drawn from surface water, groundwater, seawater, or a third party for any use by the organization during the reporting period.	Quantitative	Cubic Meters (m^3)	Water	Land, Biodiversity & Ecosystems, Agriculture, Climate, Waste	6, 8, 9, 12, 13
Water Type	Describes the type of water withdrawn, consumed, or discharged as a result of investments made by Qualitative Selection the organization during the reporting period.	Qualitative	Selection	Water	Land, Biodiversity & Ecosystems, Agriculture, Climate, Waste	6, 8, 9, 12, 13

03 Our Impact Approach
Selected IRIS+ Metrics

GIIN IRIS Metrics	Description	Type	Reporting Format	Primary Impact Category	Other Impact Categories	SDGs
Target Area Eco region	Describes the ecoregions the organi ation eeks to benefit as of the end of the reporting period.	Qualitative	Selection	Cross-Category	Cross-Category	2, 3, 6, 8, 9, 12, 13, 15
Total Assets	Value, at the end of the reporting period, of all of the organization's assets.	Quantitative	AUM: USDm	Cross-Category	Cross-Category	2, 3, 6, 8, 9, 12, 13, 15
Environmental Impact Objectives	Describes the environme_ntal impact objectives pursued by the organization.	Qualitative	Selection	Cross-Category	Cross-Category	2, 3, 6, 8, 9, 12, 13, 15
Climate Resilience Strategy	Indicates whether the organization implements a strategy to address the effects of climate change on the organization's operations.	Qualitative	Yes/No	Cross-Category	Cross-Category	2, 3, 6, 8, 9, 12, 13, 15
Product/Service Certifications	Describes third-party certifications for product /services sold by the organization that are valid as of the end of the reporting period.	Qualitative	Description	Cross-Category	Cross-Category	2, 3, 6, 8, 9, 12, 13, 15
Social and Environmental Targets	Describes the quantifiable social and environmental targets set by the organization.	Qualitative Quantitative	Selection	Cross-Category	Cross-Category	2, 3, 6, 8, 9, 12, 13, 15
Social and Environmental Performance Reporting	Indicates whether the organization reports its social and environmental performance to relevant stakeholders.	Quantitative	Yes/No	Cross-Category	Cross-Category	2, 3, 6, 8, 9, 12, 13, 15
Jobs in Directly Supported /Financed Enterprises	Number of full-time equivalent employees working for enterprises financed or supported by the organization as of the end of the reporting period.	Quantitative	Full-time equivalent	Cross-Category	Cross-Category	2, 3, 6, 8, 9, 12, 13, 15
Community Engagement	Indicates whether the organization implement a strategy to manage its interactions with local communities affected by its operations.	Qualitative	Description	Cross-Category	Cross-Category	2, 3, 6, 8, 9, 12, 13, 15

03 Our Impact Approach
Aligning Impact Frameworks

Impact Categories	GIIN IRIS	2 Zero hunger	3 Good Helth and well-being	6 Clean Water and Sanitation	8 Decent work and economic growth	9 Industry, innovation and infrastructure	12 Responsible consumption and production	13 Climate Action	15 Life on Land
Agriculture	Sustainable Agriculture	Major							
Agriculture	Food Security	Contributing					Contributing		
Air	Clean Air				Contributing	Contributing			
Biodiversity & Ecosystems	Biodiversity & Ecosystems Conservation	Contributing		Contributing					Major
Climate	Climate Mitigation					Contributing		Major	
Climate	Climate Resilience and Adaptation					Contributing		Major	
Employment	Employment				Contributing				
Energy	Clean Energy				Contributing				
Energy	Energy Efficiency					Contributing			
Health	Nutrition		Major						
Land	Natural Resources Conservation	Contributing							
Land	Sustainable Land Management	Major		Major		Contributing	Major	Major	Major
Land	Sustainable Forestry			Contributing		Contributing		Major	Major
Pollution	Pollution Prevention		Contributing	Contributing			Contributing		
Waste	Waste Management				Contributing	Contributing	Major		
Water	Sustainable Water Resources Management			Major		Contributing	Major		

SLM Partners organic farm in the USA.

This section presents SLM Partners key impact thesis and results achieved in 2022 for our strategies globally, split by land-use type.

04

Key Results 2022

04 Key
Results 2022

Organic Annual Crops

SLM Partners organic farm in the US Midwest.

Land Under Management
2,326 ha

Sustainable Land Use
Transition to USDA Organic

Target Region
US Midwest

Theory of change

Conventional arable farming has largely focused on maximising yields, leading to an over-reliance on external inputs, such as synthetic fertilisers, genetically modified seeds, pesticides, herbicides and other chemicals. These farming systems are associated with a number of well-documented problems: soil erosion, water pollution, pesticide toxicity, high greenhouse gas emissions, reduction of biodiversity (such as pollinators), and over-use of antibiotics in animals. At the same time, conventional farmers often struggle to make a profit, squeezed between high input costs and fluctuating commodity prices [42].

Organic agriculture is governed by a strict set of regulations that prohibit the use of synthetic pesticides and fertilizers, genetic engineering (GMOs), antibiotics, and growth hormones, as well as requiring the use of farming methods that promote ecological balance and foster on-farm biodiversity. As a result, organic farmers tend to grow a more diverse range of crops, plant cover crops to nourish the soil, and use livestock manure or compost to build soil fertility. They rely on biology, not chemistry, to sustain production and to control pests and weeds.

Well-managed organic farms – using regenerative practices such as cover crops, diverse rotations, organic fertility and livestock grazing – can deliver many environmental benefits. They support more biodiversity and reduce nutrient run-off into waterways. They have healthier and more biologically active soils with higher levels of soil organic matter. Although they usually require tillage to control weeds, the use of organic farming practices has been shown to increase soil carbon over time and to reduce greenhouse gas emissions associated with synthetic fertilisers and agro-chemicals. As a result, organic farming can contribute both to climate change mitigation and adaptation.

Our strategy has positive social impacts by helping organic family farmers expand and thrive. We provide long-term access to land (instead of the leases of 1, 2 or 3 years that are common) and share in some of the financial risks of organic transition. We help farmers achieve higher levels of income, and employ more farm workers, which contributes to the revitalisation of rural economies. The transition to organic farming also reduces the amount of pesticide residues in food and eliminates the risk of pesticide poisoning for farm workers.

04 Key Results 2022

Organic Annual Crops

Climate

Mitigation & Adaptation

The transition to organic farming will eliminate the use of synthetic nitrogen fertiliser, a highly energy intensive product that represents a large part of emissions from conventional arable farming. The use of nitrogen-fixing cover crops, manure and compost in organic farming can also minimise the release of nitrous oxide (N_2O) from soils, a potent greenhouse gas. Lastly, healthy soils under organic management are proven to sequester carbon, offsetting other farm emissions.

- SLM Partners has joined the **Ecosystem Services Market Consortium (ESMC)**, an American non-profit organisation that is developing a national ecosystem services market programme to compensate farmers and ranchers who improve the environment through their agricultural practices;
- Over the course of 2022, we have worked with ESMC to develop a pilot project aimed at measuring soil carbon sequestration and emissions reduction across our US Midwest organic farmland portfolio. This is the **first rigorous carbon measurements scheme** applied at scale across farmland that is organic certified or in organic transition

Biodiversity

In the USA, our farms are either organic certified, or undergoing an organic transition, and therefore do not use pesticides, herbicides and synthetic fertilisers that are inherently damaging for insects, bees and soil microbiology. The introduction of diverse crop rotations and cover crops favours pollinator activity and kick-starts soil biological activity, leading to increases in beneficial bacteria, protozoa, fungi, earthworms and small arthropods. Organic farms also promote more bird diversity.

- Land dedicated to biodiversity restoration or conservation: **118 ha**;
- Crop grown: **Soybean, Maize, Wheat, Oats, Alfalfa, Beans and Cover Crops**;
- Biodiversity **enhancement actions**: Creation of buffer strips and pollination habitats, reduction of pesticides and herbicides, reconstructing riparian sites;
- Land treated with pesticides: **0 ha.**

Soils

We are introducing organic cropping systems that adopt a more diverse and multifunctional rotation, integrating cover crops and using biological fertility such as manure and compost. These practices, along with the judicious use of tillage to control weeds and the removal of chemical inputs that kill soil microbiology, promotes soil health, minimises erosion and gradually increases levels of soil organic matter.

- **Soil samples** (including bulk density tests) were taken by a third-party specialist on all acquired farms to establish a soil health baseline.

Water

The row crop farms we manage in the US are 100% rainfed. The adoption of sound organic fertility plans, the elimination of synthetic fertilisers and the introduction of cover crops minimises the run-off of nitrates and phosphates into streams – a major issue in the US Midwest.

- **100%** rainfed systems;
- **No use** of synthetic fertilisers;
- **< 10 ha** with fresh water bodies, these are limited to narrow creeks;
- ESMC pilot project will also assess the impact of **farming practices on water quality**.

04 Key Results 2022
Organic Annual Crops

Society

We have partnered with several mid-sized organic farmers to expand and build farm businesses across the US. Access to capital and the absence of long-term leases are major hurdles for farmers looking to extend organic operations. We fill that gap by purchasing land and setting flexible lease agreements that adequately reflect the risk and rewards. We also connect farmers to one and another so they can benefit from peer-to-peer learning. Through our investments, we are increasing the supply of domestically-grown, pesticide-free, organic certified food for consumers.

- **78 full-time equivalent** (FTE) jobs directly supported or financed;
- **25 organic farmers** supported through flexible long-term leases;
- **21,234 tonnes** of organic cereals grown (of which 16,631 tonnes of maize, 2,542 tonnes of soybeans, 1,300 tonnes of wheat, 257 tonnes of alfalfa, 407 tonnes of oats and 98 tonnes of beans).

SLM Partners organic farm in the US Midwest.

Wyoming Farm, Illinois, now farmed by Garrison Govig.

04 Key Results 2022

Organic Annual Crops

Case Study: Garrison Govig, a young organic farmer in Illinois

Garrison Govig is a 25-year old organic farmer from Dekalb County, Illinois. A 5th generation farmer, he farms together with his father, Jim. When we first met Garrison, he was operating 1,110 acres (449 hectares), of which 650 acres (263 hectares) were organic certified and the remainder in transition to organic. Most of this land was leased. They have been using organic practices since 2017, having joined a loose affiliation of local organic farmers that collectively market, as well as share resources and knowledge of best organic growing practices.

Garrison was looking to expand his operation but was hampered by the prevalence of short-term leases (1, 2 or 3 years in duration), which increased the risks of the organic transition. He was attracted to the long-term leases that SLM Partners offers through its farmland investment program. At the end of 2021, we worked together to purchase a 230-acre farm in neighboring Lee County, and then in 2022 we secured another 612-acre farm nearby. Both these farms were leased to Garrison for an initial 10-year term, with the potential to extend.

Garrison is now in the process of transitioning both these farms to USDA Organic. He begins with a first year of soybeans, followed by a small grain such as oats in the second year, then plants a cover crop mix for the winter, before growing corn in the third year. This diverse rotation, using cover crops and biological fertility, will improve soil health and increase soil organic matter.

Garrison is representative of the younger farmers that SLM Partners tends to work with. While the average age of farmers in the US is now 57, the average age of our tenants is 35. Younger farmers are more likely to embrace organic agriculture and they are attracted to the long-term land access that SLM Partners provides.

04 Key Results 2022

Regenerative Permanent Crops

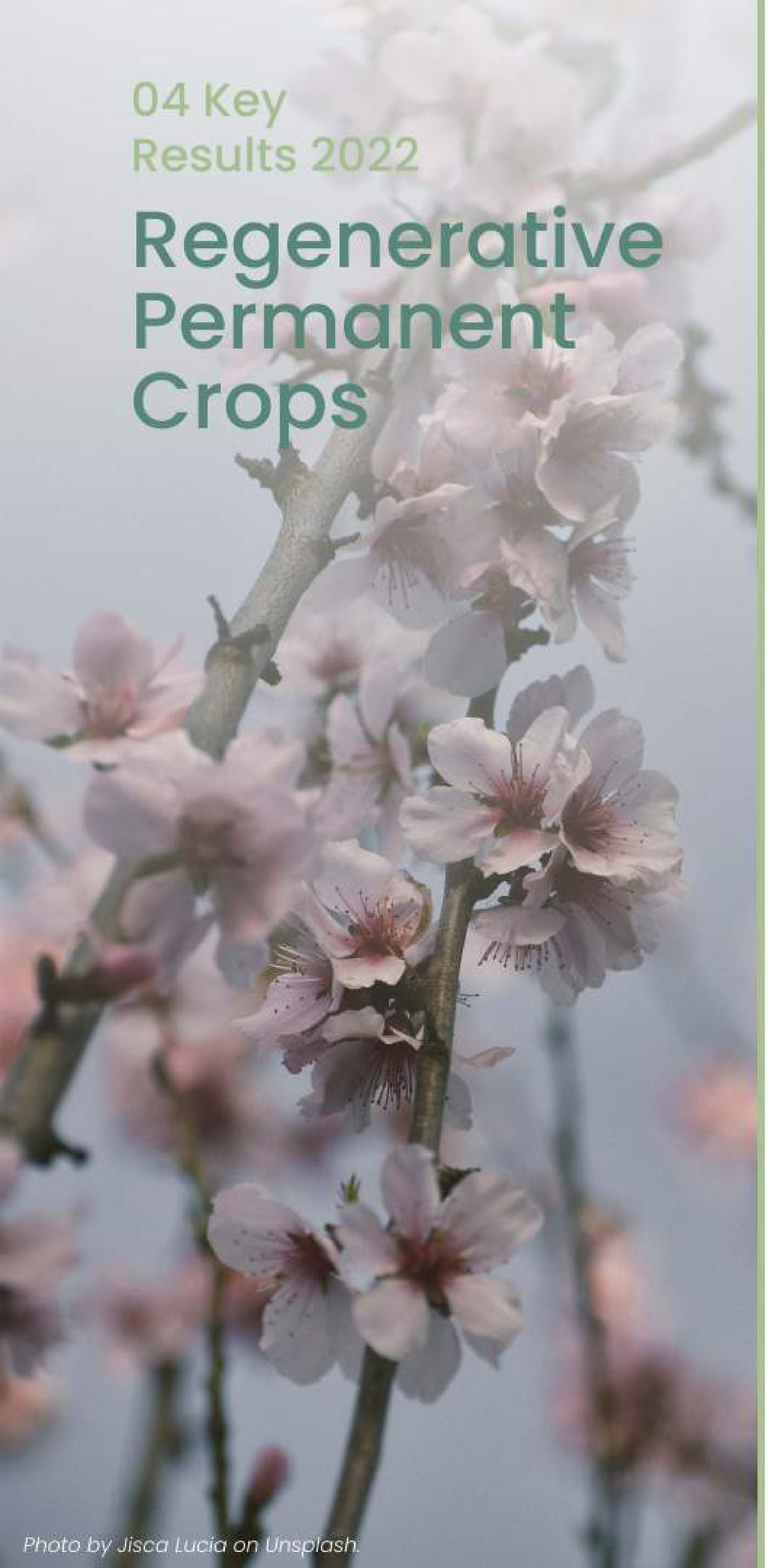


Photo by Jisca Lucia on Unsplash.

Land Under Management
562 ha

Sustainable Land Use
Regenerative & Organic Orchards

Target Region
Spain & Portugal

Theory of change

The recent surge in global tree nut production, especially almonds and pistachios, has been mostly driven by the development of intensive irrigated orchards. These systems rely on heavy use of external inputs, such as synthetic fertilisers and pesticides, to ensure plants can thrive in a man-made environment, characterised by a single commercial specie.

While this approach can deliver high yields, an oversimplified and reductionist view of agricultural systems has led to damaging land use practices and several negative environmental externalities. These include water and soil pollution, biodiversity loss, and high Greenhouse Gas (GHG) emissions, which ultimately hinder the long-term sustainability of farming [18]. Farms have become detached from, and have very little resemblance to, natural systems. Traditional rainfed systems in Mediterranean zones also suffer from land degradation. Soils are often kept bare through tillage or application of herbicides, which can lead to soil erosion, nutrient run-off and loss of soil organic matter.

In recent years, innovative farmers have developed regenerative practices that build soil health, reduce reliance on external inputs, and have a positive impact on biodiversity, water and carbon cycles. Broadly defined, the key principles of regenerative agriculture are minimising soil disturbance, eliminating or reducing agrochemical use, keeping soil covered, maximising plant diversity, and integrating livestock. Although the regenerative agriculture movement is more developed within annual cropping and livestock systems, the same principles can be applied to permanent crops.

We are working with a number of growers using regenerative practices in orchards in Iberia and other parts of the world. Key practices include planting cover crops between tree rows, minimizing tillage, using composts and biodiversity fertilisers, mulching the pruning residues and planting hedgerows or pollinator habitats for integrated pest management. Whole orchard recycling at the end of orchard life also significantly improves the GHG profile. These systems can produce nuts, olives and other crops in a profitable way while storing carbon and improving soil health. By increasing soil organic matter, they also use water more efficiently. When economically viable, orchards are transitioned to organic certification to tap into higher premium markets.

04 Key Results 2022

Regenerative Permanent Crops

Climate

Mitigation & Adaptation

Within orchards, we invest in both greenfield and brownfield projects. Greenfield projects involve planting trees - converting arable land (typically with a negative carbon profile) to a perennial tree-system that will store carbon through time. Within brownfield projects, the carbon profile of the assets can be improved by reducing fossil-fuel based inputs (such as synthetic fertilizers), switching to on-farm renewable energy and improving soil carbon stocks through regenerative practices. These practices also improve resilience to extreme weather events.

- In 2022, we planted **14,000 pistachio trees and 1,000 almond trees** as part of Capex development for SLM Silva Europe's first acquisition in SE of Spain;
- Installation of a new photovoltaic panel that will produce **50KW** to supply the grid and **30KW** for on-farm consumption.

Biodiversity

Our regenerative orchards seek to limit the use of herbicides that kill ground cover and negatively impact soil microbiology. Instead we actively promote ground cover between the trees, which is controlled by mowing or grazing. This allows us to integrate a wide variety of grasses and flowering plants within the productive areas of the farm, supporting biodiversity above and below ground. We also build semi-natural habitats to attract beneficial insects for pollination and integrated pest management. By moving away from synthetic fertilizers and applying manure or compost, our soil health practices directly support active soil microbiology.

- Land dedicated to biodiversity restoration or conservation: **148 hectares**;
- Crop grown: **olives, almonds, pistachios and walnuts**,
- **220 ha** in transition to EU organic certification;
- **First biodiversity baseline assessment completed** within first year of acquisition;
- **200 m2 of hedgerows** planted to create habitat for insects and wildlife and to protect against soil erosion;
- Floating islands added to the water reservoirs to provide **habitat and nesting sites for birds**.

Soils

Across our orchard properties, SLM applies regenerative practices that enhance soil health, maximize ground cover and plant diversity, minimize soil disturbance, eliminate or reduce agrochemical use and adopt improved biomass and nutrient cycling practices such as composting and mulching of pruning residues. These practices support the build-up of Soil Organic Matter, which is the foundation for a healthy soil ecosystem, a good structure and carbon storage.

- **13 soil samples** taken in El Roble for impact baselining and operational management guidance;
- **Whole orchard recycling system** implemented with appropriate machinery to recycle the biomass and the nutrients into the soil.

Water

Across our orchard properties, we install drip irrigation infrastructure to improve efficiency. With new precision agriculture technologies, such as soil probes combined with on-site climate stations, we can now match irrigation to the demands of the trees in a more precise way, leading to considerable water savings. Soil health is also key when it comes to water management: it is estimated that each 1% increase in soil organic matter (SOM) improves the water holding capacity of soils by 187,000 litres [39].

- **275.5 ha** of irrigated land in Iberia;
- **100% of irrigation systems** being installed are drip systems with soil probes to improve water use efficiency;
- Water is pumped **using onsite solar energy.**

04 Key Results 2022

Regenerative Permanent Crops

Society

In Europe, we establish long-term partnerships with local operators that are expert in specific tree-crops and aligned with our impact objectives (i.e. organic or regenerative). Thanks to our investments, the operators can expand their reach across more land. We also facilitate training and knowledge sharing amongst our partners. We also invite research projects on the farms that can help support the economic and environmental case for regenerative practices in permanent crops.

Our orchards produce healthy and nutritious nuts and olives with less chemicals and less negative environmental externalities.

- **14 full-time equivalent** (FTE) jobs directly supported or financed;
- **3 students** hosted on our farm for research on biodiversity measurement in farms and agroecology, as part of our partnership with Regeneration Academy.

Property from SLM Silva Europe Fund: almond orchard in transition to EU organic certification.

Local ecologist performing biodiversity baseline on SLM Partners' property in Spain.

Case Study: Biodiversity Performance Tool Assessment at El Roble

In February 2022, SLM Silva Europe Fund completed the acquisition of its first property in the southeast of Spain, near Murcia. The farm is growing a diverse set of crops and different varieties of almonds, pistachios and olives. For the management of this property, we partnered with leading regenerative farmer **Alfonso Chico de Guzman**. All of this farm is in transition to EU Organic certification.

Learn more about **Alfonso** by checking out this video

Throughout the year, SLM Partners completed biodiversity baseline assessments of the property by hiring a local ecologist and by partnering with ecology students from **Regeneration Academy**. The assessments allowed us to record the various habitats, fauna and flora currently present across the farm. The assessments looked into both the productive areas of the farm and the 72 hectares of natural areas, which are non-productive areas with riparian zones, shrubs and forests.

For our baseline assessment and target-setting, we leveraged the Biodiversity Performance Tool (BPT). This tool was developed by an EU LIFE Project in collaboration with agroecological consultants and universities from France, Spain and Portugal. The objective of the tool is to help farmers understand their starting point and identify potential ways to increase functional biodiversity across their farm. The assessment considers a total of 65 material indicators for orchards, across three main categories: (i) the environment of the farm and its semi-natural habitats, (ii) the farming practices and (iii) the farm's integration within the socio-economic context.

Field Biodiversity Assessment

Salvia Verbenaca

Medicago sativa

Raphanus Raphanistrum

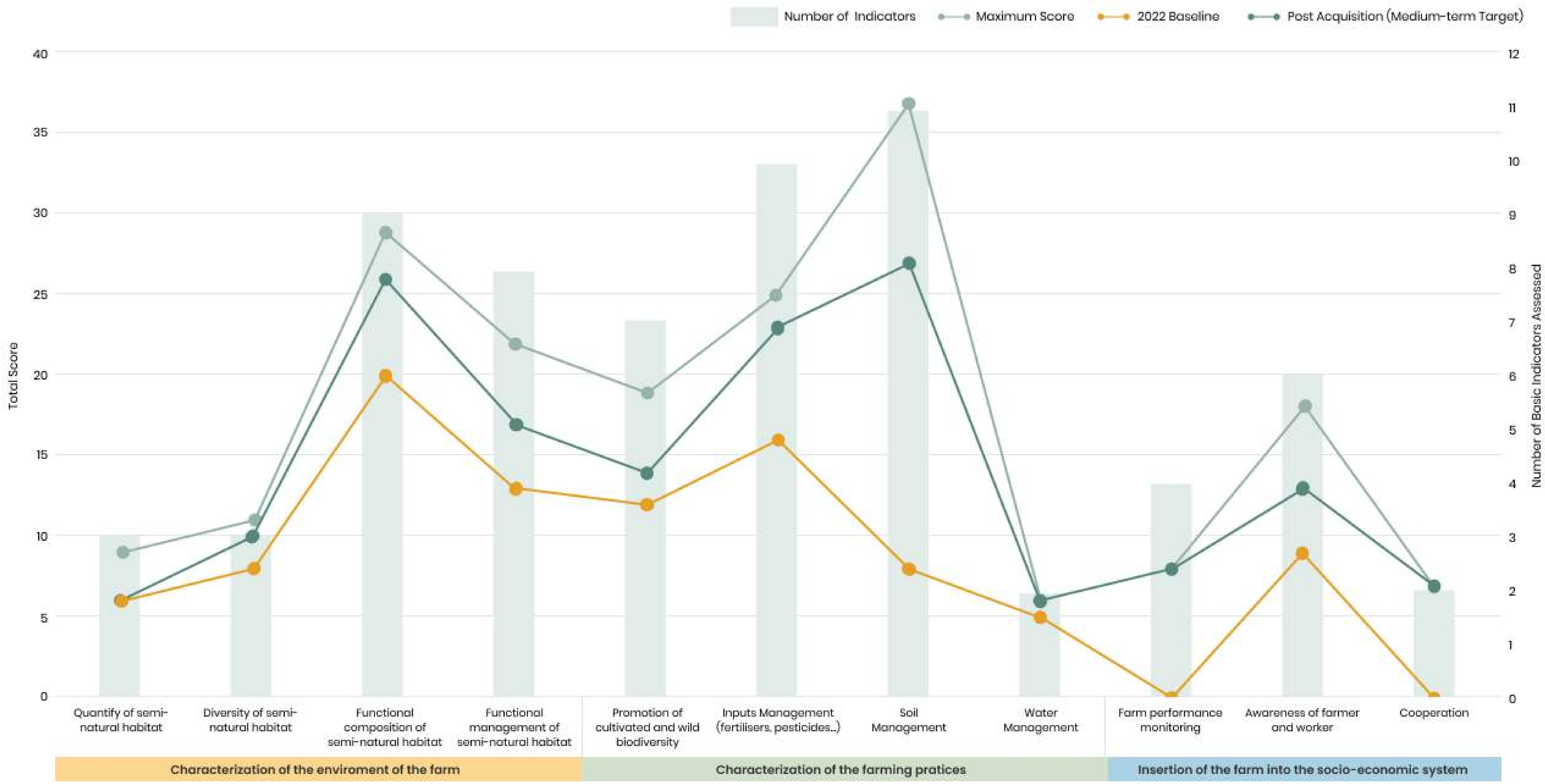
Silene Vulgaris (Moench) Garcke, Caryophyllaceae - Bladder Campion

04 Key Results 2022

Regenerative Permanent Crops

Biodiversity Performance Tool Assessment

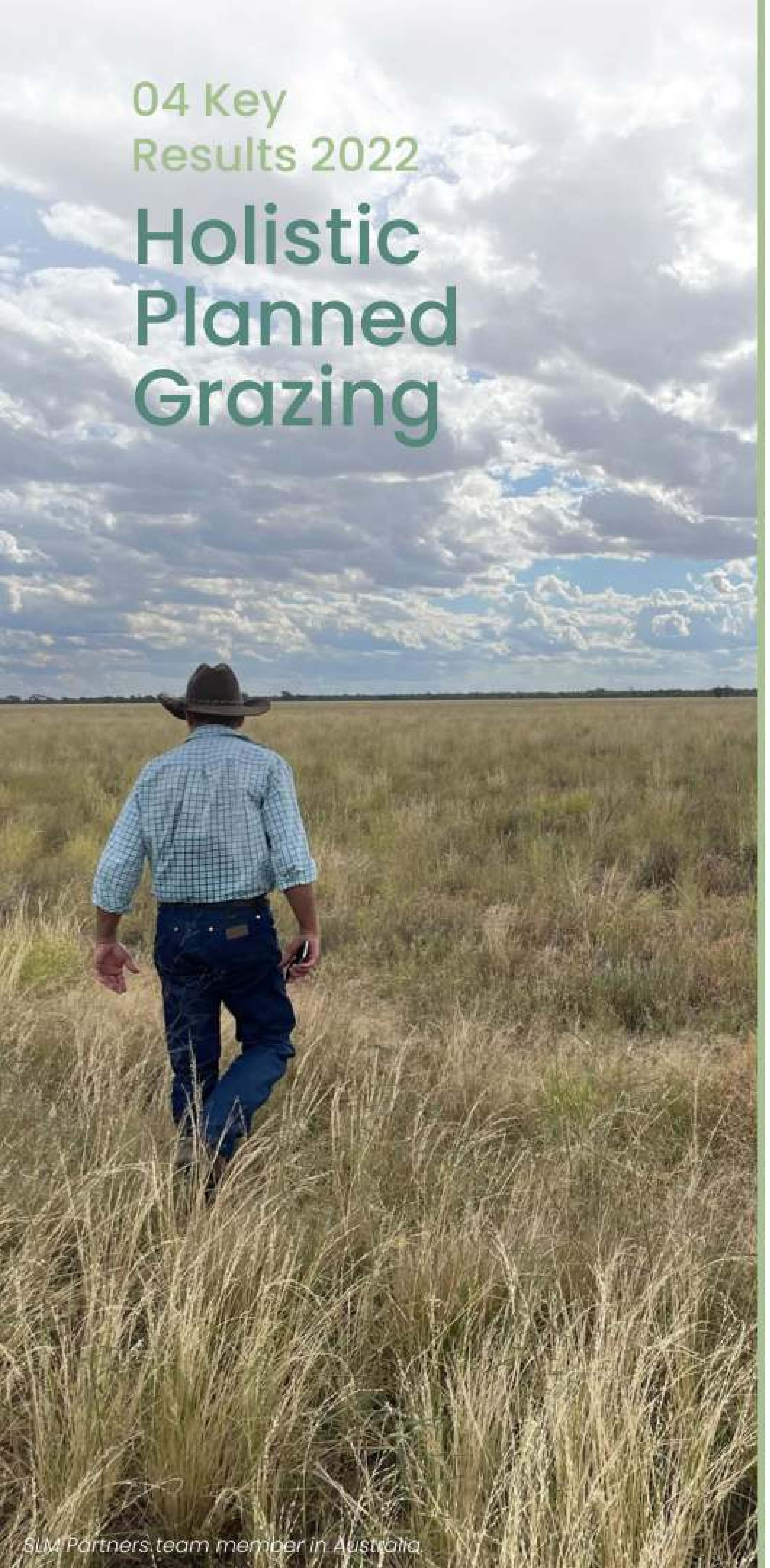
SHD olive orchard converted to regenerative organic management



This chart presents the results of the BPT assessment for a Super High Density (SHD) irrigated olive plot acquired in 2022 and in transition to organic certification. We used the tool to calculate our starting point (2022 baseline) and to project the impact of our management practices into the future (post-acquisition target). The score for each sub-category is driven by basic indicators. The number of each basic indicator considered for a sub-category is also shown in the chart. For example, the tool considers 2 basic indicators to assess water management and 11 indicators to assess soil management.

04 Key Results 2022

Holistic Planned Grazing



SLM Partners team member in Australia

Land Under Management
284,500 ha

Sustainable Land Use
Holistic Planned Grazing & Mulga Regeneration

Target Region
Queensland & New South Wales, Australia

Theory of change

Beef cattle production has attracted a bad reputation for its methane emissions, but the problems associated with raising cattle for beef production go well beyond methane. From industrial cattle feedlots to poorly managed grassland, the negative impacts vary from deteriorating soil health, chronic soil erosion and carbon loss, broken water cycles and biodiversity loss, with systems heavily reliant on grains and monocultures. These systems lead to degradation of natural ecosystems, present hidden financial and environmental risks, and ultimately externalise these costs and risks to the wider society.

The native grasslands managed by SLM Partners are in brittle and semi-arid environments unfit for cropping or other agricultural uses. If left un-grazed, these areas tend to degenerate and become hot spots for wildfires. If poorly grazed, land health conditions can also degrade quickly leading to erosion and loss of carbon.

Our strategy is to implement a management process known as "holistic planned grazing". This involves dividing land into smaller paddocks, putting cattle in large herds, and moving them frequently across the property. It provides a decision-making framework that allows managers to vary the size of herds and the frequency of herd movements according to seasonal conditions, mimicking the behaviour of large herds of herbivores in natural environments.

The adoption of holistic planned grazing has the potential to create a wealth of positive impacts on the land. The frequent movement of larger herds leads to intense, beneficial impacts on grasslands through the breaking up of soil capping, more even grazing of forages, and improved manure distribution. Long rest periods allow for full grass recovery and improved ground cover, leading to an increase in plant diversity, particularly of perennial grasses, legumes and forbs. These are key catalysts to improve carbon, mineral, water and energy cycles. Academic research indicates that well-managed grasslands can store significant amounts of additional carbon, enough to offset most or all of the methane emissions associated with cattle [40][41].

04 Key Results 2022

Holistic Planned Grazing

Climate

Mitigation & Adaptation

We created 4 carbon projects across 158,412 hectares of land that will sequester 4,508,731 tonnes of CO2e – and generate the same number of verified Australian Carbon Credit Units – over a 25-year period. Our beef cattle operations employ holistic planned grazing to improve soil health and ground cover, which increase the ability of soils to sequester carbon from the atmosphere. This controlled grazing system also allows us to adjust stocking rates according to seasonal conditions and to avoid overgrazing – which was an important tool during a long-running drought that hit our region from 2013 to 2020.

- **1,735,613 Australian Carbon Credit Units** (ACCUs) issued and sold for projects on Fund properties from 2016 to 2022;
- **100,912 ACCUs** sold in 2022;
- Each ACCU issued represents **one tonne of carbon dioxide equivalent** (tCO2-e) reduced or sequestered.

Biodiversity

Our adoption of holistic planned grazing in natural grasslands is promoting a shift from a few annual species to a diverse mix of perennial grasses, legumes and forbs. These species have deeper root systems, are more drought resistant, more productive and enhance the nutrient cycling critical for soil microbiology. Our systems are also chemical-free, which increase the presence of dung beetles and other beneficial insects.

- **Vegetation surveys** are carried out across the properties by a 3rd party expert (Agricultural Information and Monitoring) every 2-3 years, including in 2022, showing an increase in species diversity.

Soils

SLM Partners has introduced holistic planned grazing across its properties with the aim of maintaining year-round ground cover, breaking soil capping, and allowing grasses to fully recovery after grazing. These practices, in conjunction with improvement manure distribution, help the natural re-establishment of deep-rooted perennial grasses, legumes and forbs (i.e. herbaceous flower- ing plants) that sustain soil microbiology and soil fertility.

- **100%** of the properties adopt holistic planned grazing.

Water

Our cattle stations are located in a semi-arid and brittle environment in Queensland and New South Wales, Australia. The focus of our land management is to improve vegetative cover and soil organic matter levels to restore efficient water cycles and promote greater water infiltration and retention in the soil. Our extensive water infrastructure development, with multiple tanks and troughs, also ensures livestock have access to quality water and avoids excessive water loss via evaporation and leakage from open reservoirs and dams.

- Our water infrastructure developments include **168 water points** and **539 km** of piping across a total of 1,183 paddocks. .

Photo by Jan Koetsier on Pexels.

04 Key Results 2022
Holistic Planned Grazing

Society

Our cattle operations provide employment opportunities in remote rural areas where jobs are few. We provide extensive training on holistic planned grazing and low-stress livestock handling to farm managers and employees, building a cadre of operators with new skills, some of whom have gone on to manage other properties in this way. We produce grass-fed beef on natural grasslands without the use of pesticides or fertilisers.

- **14 full-time equivalent** (FTE) jobs directly supported or financed,
- **2,563,788 kg** of grass-fed beef produced and sold,
- **Over 100,000 kg** were sold under the Roots Regenerative, Paradigm Food premium label,
- Held training sessions for **Low Stress Stock Handling** which neighboring farmers joined.


SLM Partners farm managers in Australia.

Livestock grazing in permanent pasture on SLM property in Australia.

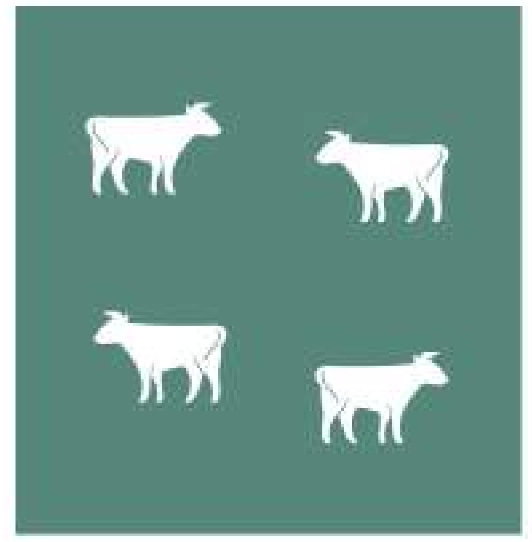
04 Key Results 2022

Holistic Planned Grazing

What is Holistic Planned Grazing?

Continuous Grazing

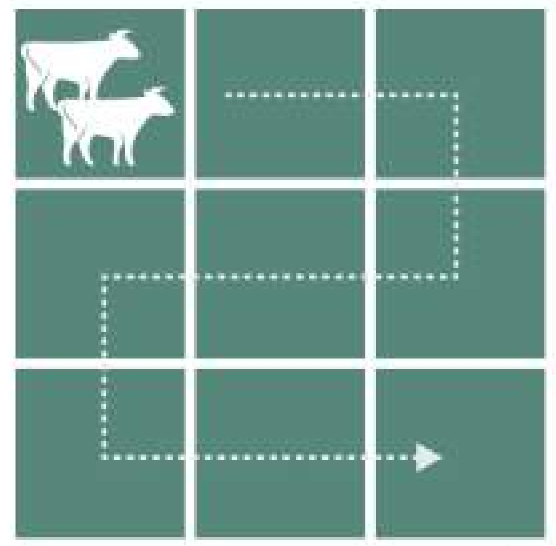
Constant access to entire pasture, leading to overgrazing



- Less wildlife habitat
- More exposed soil
- Reduce forage diversity
- Increased rainfall runoff
- Less healthy animals
- More parasites

Holistic Planned Grazing

Herds moved across smaller paddocks, adapting to changing conditions



- Better wildlife habitat
- More microbial diversity
- Increased rainfall absorption
- More carbon sequestration
- Healthier animals
- Fewer parasites

Adapted from Diana Rodgers (Sacredcow.info)

04 Key Results 2022

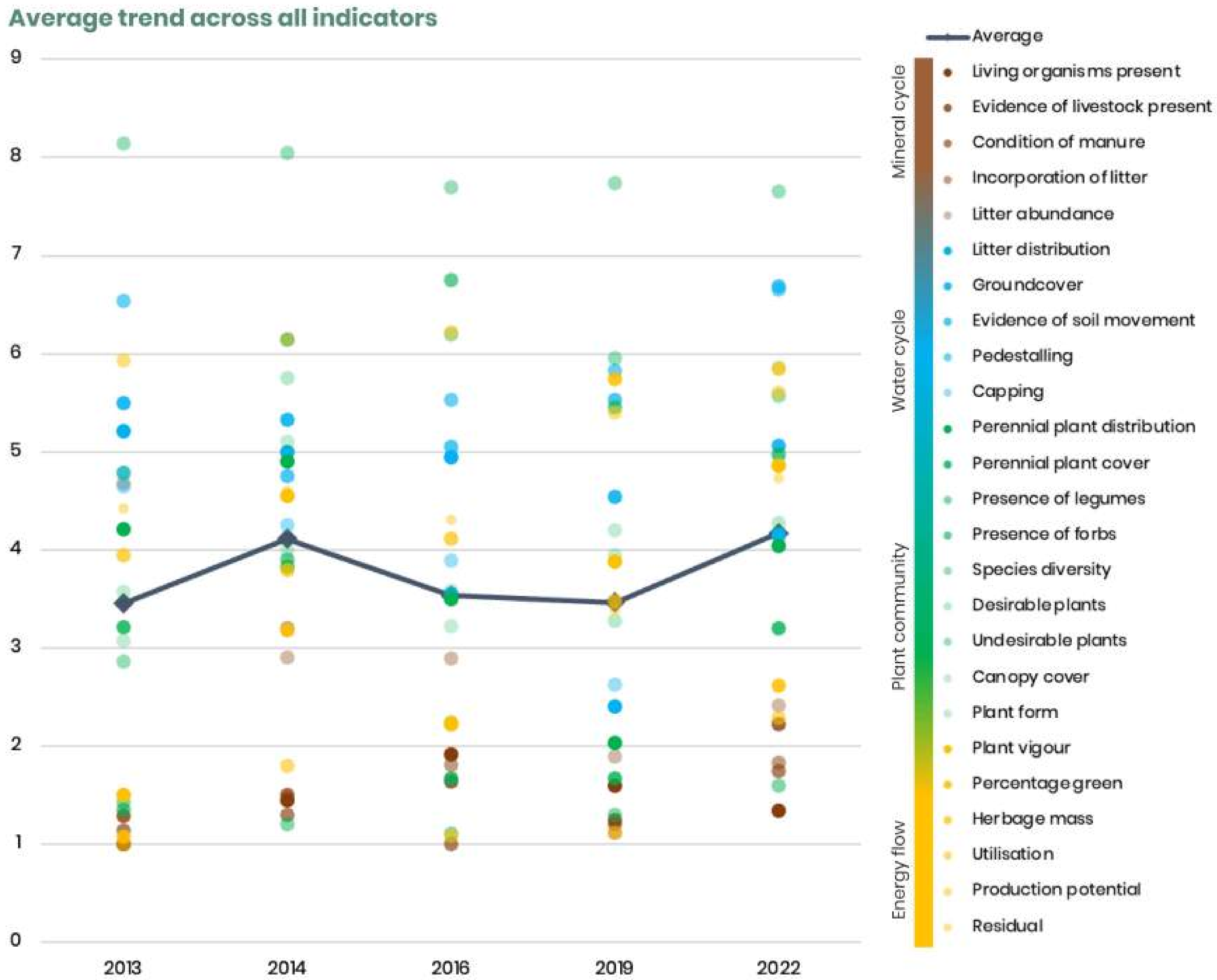
Holistic Planned Grazing

Landscape Health Assessment

Since 2013, we have engaged a third-party expert, Agricultural Information and Monitoring Services, to carry out regular biodiversity assessments on our properties. These assessments are based on landscape health monitoring protocols covering 36 sites with 25 indicators each. They include key land health indicators related to mineral and water cycles, plant community dynamics and energy flows. Each indicator receives a score from 1 (low) to 10 (high).

A total of 180 surveys were performed covering 36 sites across 5 years - 2013, 2014, 2016, 2019 and 2022. The surveys reveal a positive trend with, on average, biodiversity indicators trending higher, especially since 2020 which marks the end of a seven-year drought period. The response of our grasslands to the rainfall has been exceptional and the benefits of our holistic planned grazing are paying off.

Biodiversity assessment scores through time



04 Key Results 2022

Holistic Planned Grazing

Carbon Projects

The fund established 4 carbon projects on its properties since establishment. All the projects are following the methodologies approved by the Australian Government's Carbon Farming Initiative.

Across 158,412 hectares, SLM Partners put in place a regeneration project of native Mulga trees. The projects followed the "Human-Induced Regeneration of a Permanent Even-Age Native Forest" methodology. This involved cessation of mechanical or chemical destruction of regrowing trees (a common historic practice in the area) and careful management of the timing and extent of grazing (which is consistent with our holistic planned grazing strategy) to encourage native vegetation and the regeneration of native Mulga trees.

We partnered with Climate Friendly, an experienced carbon developer, who verifies our claims and coordinates the issuance of Australia Carbon Credit Units (ACCUs). Each ACCU represents one tonne of carbon dioxide equivalent sequestered or avoided.

The Australian Government has created an Emissions Reduction Fund, administered by the Clean Energy Regulator, to enter into contracts with farmers and landowners to buy carbon credits. We participated in reverse auctions and won contracts to sell credits to the Clean Energy Regulator over the first 10 years of each project. Recently, the spot price that corporate buyers will pay for ACCUs has significantly exceeded these contract prices. In 2022, the Clean Energy Regulator allowed project proponents to break their contracts and sell ACCUs to private buyers instead. We took advantage of this and were able to sell ACCUs to corporate buyers at higher prices than originally envisaged. The projects last for 25 years and should continue to generate carbon credits beyond the initial 10-year contract. It may be possible to sell these later credits to private sector buyers seeking to offset their emissions.

These projects generated 100,912 ACCUs in 2022, which is equivalent to the annual emissions of 21,801 passenger vehicles or the emissions avoided by 22 wind turbines. The total amount of carbon sequestered under these projects over 25 years is forecasted to be 4,508,731 ACCUs, a sum that equates to 10,438,665 barrels of oil consumed. This figure includes two projects that were sold in 2021 to a carbon-focused buyer.

In 2021, we achieved an exit for the fund by selling the Colac aggregation, which had 2 large carbon projects in place. The sale delivered a Gross IRR of 16.4% to the fund, largely because of the value of the carbon projects we put in place. This exit showcases the potential to transform land values through sustainable management and monetization of positive environmental externalities.

SLM Partners property in Australia supporting native tree regeneration.

Livestock on permanent pasture land from SLM Livestock Australia Fund.

04 Key Results 2022

Holistic Planned Grazing

Case Study : Low Stress Stock Handling

SLM Partners manages large herds of cattle that graze on natural grasslands in Australia. The animals are moved frequently from paddock to paddock and are sometimes brought into cattle yards for handling. We use Low Stress Stock Handling techniques when working with livestock to achieve the best outcomes, and we ensure that all our staff receive full training in these methods.

Low Stress Stock Handling is a way of working with cattle that minimises stress, both for the animals and the handlers. It relies on an understanding of the natural instincts of the animals. Cattle are herd animals that bunch up when they perceive a threat. They have a 'flight zone' around them and will move away when a person enters this zone. There is usually a leader that the rest of the mob follows. By understanding these principles, and using controlled and calm movements, skilled stock handlers can move hundreds of animals from field to field, or through handling yards, with minimal stress. The key is to consider the situation from the animal's point of view and work with the animals, not against them.

SLM Partners has partnered with LSS, the pioneers of Low Stress Stock Handling in Australia, to hold training courses for all its staff in these techniques. We also invite neighbouring farmers to join these courses.

LSS was founded by Jim Lindsay, who was born on a 2 million acre cattle property in south-west Queensland in 1957, has spent his whole life working as a stockman and has led training courses since the 1990s. Jim led a 2-day training course for the full SLM team in March 2022 on Padua and Amenda, a mixture of classroom and in-the-paddock learning.

Research shows that stress is a leading cause of poor animal performance, meat quality defects and low productivity in livestock systems. Poor stock handling can also increase the risk of injury to farm workers. Low Stress Stock Handling maximises animal welfare and improves animal productivity, while creating a safer and more enjoyable work environment. We have seen the benefit in the temperament of our herd: the purchasers of our animals often comment on how easy they are to handle, and this has led to increased buyer demand.

Low Stress Stock Handling is another example of our philosophy of understanding and mimicking nature and creating farming systems that are as close to nature as possible.

04 Key Results 2022

Holistic Planned Grazing

Partnership with Roots Regenerative - Paradigm Foods

In 2022, SLM Partners began a collaboration with the "Roots Regenerative" branded programme launched by Paradigm Food, a certified B-corporation. Roots Regenerative is a brand of 100% grassfed beef raised on regenerative Australian farms. In order to sell beef through this programme, producers must meet a stringent set of criteria. All cattle are free to roam for life, and the beef is entirely natural, raised without the addition of hormones, growth promotants or antibiotics. All producers must commit to certain regenerative principles of Soil Health and Grazing Management. These are consistent with the regenerative grazing system that SLM Partners has implemented in Australia since 2012. Third-party certification is conducted by Livestock Integrity Solutions Australasia Pty Ltd and every producer is audited every year. We went through this verification and certification process in 2022. Following this process, we sold 216 cows through the Roots Regenerative brand (representing more than 100,000 kg liveweight) for an attractive price premium and we plan to increase our sales through this channel in the future.

Soil Health Principles

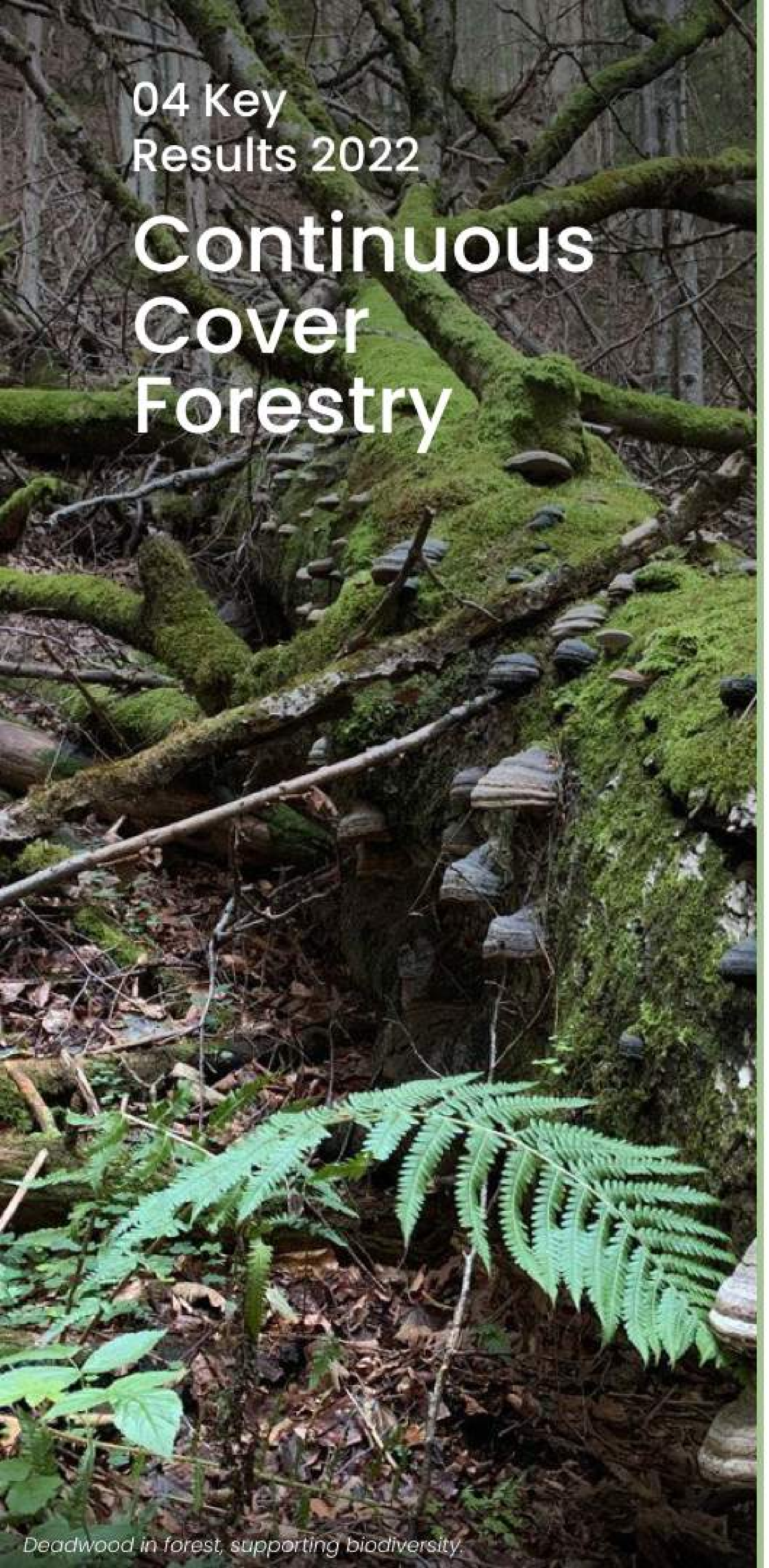
01. Maximize Groundcover
02. Minimize Soil Disturbance
03. Maximize Plant Diversity
04. Maxmize Maintaining Living Roots
05. Introduce Livestock

Regenerative Grazing Management

01. Develop a Grazing Plan
02. Match stocking rate to carrying capacity
03. Plan Paddock Rotations
04. Manage Pasture Rest Periods
05. Maximum Density for Minimum Time

Cow calf and heard on SLM Partners grassland property in Australia.

Continuous Cover Forestry



Deadwood in forest, supporting biodiversity.

Land Under Management	Sustainable Land Use	Target Region
1,779 ha	Continuous Cover Forestry	Ireland

Theory of change

Temperate conventional forestry in countries like Ireland is dominated by non-native, single-specie, even-aged stands that are managed in a clear-fell-replant system. Under this system, land is prepared and planted with trees, the plantation is thinned periodically, and all the remaining trees are then harvested on maturity, before the land is replanted for the next rotation. This silvicultural system is easy to plan and execute. But it exposes investors to certain risks:

1. Even-aged monocultures are more susceptible to pests, diseases and windthrow – risks that are likely to be exacerbated by climate change;
2. Clear-felling can cause negative environmental impacts such as soil damage, water run-off, reduced biodiversity, low amenity value and release of forest and soil carbon;
3. Tightening government regulations and certification standards are constraining the ability to apply this system, especially in environmentally sensitive areas.

Continuous cover forestry is a viable alternative. Under this system, forest cover and woodland conditions are maintained permanently. Trees are felled individually or in small groups throughout the entire woodland area. The increment in growth is removed as 'income' every few years, preserving the 'capital' of the standing forest. High quality trees are allowed to grow larger. The system relies on natural regeneration to develop a mixed-age stand, and species diversity is encouraged and naturally emerges across the full productive area of the forest, rather than being compartmentalised in plots. The overall objective is to maximise the commercial benefits from woodland while letting natural processes do most of the work.

Photo by Eberhard Grossgasteiger on Pexels.

04 Key Results 2022

Continuous Cover Forestry

Climate

Mitigation & Adaptation

We are investing in young, fast-growing forests that have very high rates of carbon sequestration, both above ground in trees and below ground in roots and soils. By transforming sites to continuous cover forestry, and avoiding clear-felling, we will increase the volume of standing carbon in trees and avoid the loss of carbon from soils and residues that would occur after clear-felling. Our silvicultural approach also focuses on harvesting higher quality sawlogs that go into long-lived products such as construction timber, which store carbon for decades.

- Carbon stock: **419,515 tCO2-eq**;
- Annual carbon sequestration: **20,440 tCO2-eq** in 2022;
- With the support of grant funding, we are currently **developing carbon models and a methodology** to measure the additionality of Continuous Cover Forestry management versus conventional management in Ireland and the UK.

Biodiversity

In our forest properties in Ireland, the transition of conifer monocultures to CCF management allows more natural, diverse forests to evolve. This management approach greatly reduces habitat disturbance and introduces structural and age diversity contributing to enhanced biodiversity in the forest. The higher proportion of deadwood and biomass cycling also enhances the soil microbiology, beneficial fungal-tree interactions, and the creation of healthy insect and bird habitat. Given the forests will not be clear-felled, these benefits will be sustained in the environment permanently.

- Land dedicated to biodiversity restoration or conservation: **199 ha, including areas of native species** (oak and 7 other species of broadleaves);
- Species grown: **Sitka Spruce, Norway Spruce, Japanese Larch, Douglas Fir, Lodgepole Pine, Western Red Cedar, Ash, Beech and Oak**;
- Land Treated with Pesticides: **2%** of land under management.

Soils

By transitioning forest properties towards CCF management we avoid the clear-fell events that can cause soil compaction and erosion. Instead, we practice selective harvesting and confine machines to established roads and racks, so preserving forest soils and habitat. Further, the promotion of a mixture of broadleaves and conifers will reduce the acidification associated with conifer monocultures and increase biodiversity below ground through critical fungi associations in tree roots.

- Soil samples taken from our Irish forests to support ETH Zurich university on **study of microbial and fungal analysis**.

Water

Our forest sites benefit from a mild climate and reliable rainfall. Our management approach improves water quality by moving away from clear-felling, which is associated with the release of sediments and nutrients into streams, and a gradual acidification of water bodies. In many cases, these freshwater bodies harbour rare species such as the freshwater pearl mussel and salmonids.

- **100%** of forestry systems are rainfed.

Photo by Karolina Grabowska on Pexels.

04 Key Results 2022
Continuous Cover Forestry

Society

In Ireland, our fund acts as a demonstration project for the commercial viability of CCF. We are helping to train new foresters and harvesting contractors in this sustainable forestry management and have the support of a technical assistance facility from EU LIFE Programme. By transitioning away from monocultures and clear-felling, we will develop forests that have greater aesthetic and amenity value for local communities, helping to address some of the issues that have caused public opposition to forestry in recent years. Our approach also ensures that forest management optimises the multiple uses of forests, including amenity and landscape values, local timber production, climate change regulation, and the protection of soil, water and biodiversity resources.

- **6 full-time** equivalent (FTE) jobs directly supported or financed;
- **1 CCF** training session completed with a total of **11 attendees**.

SLM Partners and team on Irish forest property.

Sustainability Indicators for Forests

In partnership with technical forestry and environmental experts of the European Investment Bank, we have defined 7 sustainability indicators for our forests in Ireland which will be tracked and measured over the life-time of the fund.

Indicator	Relevance	Means of Measurement
Area of Forest Management Under CCF (hectares)	This requirement is aligned with the Fund's objectives and acquisition strategy.	The management / silvicultural system to be used for each forest will be stated in each individual forest management plan. A summary of these areas in hectares will be available via the forest inventory.
Forest Naturalness: Deadwood	Fallen and standing deadwood, retained as habitat, is a key biodiversity indicator used intentionally. Forest naturalness increases with greater volumes of retained deadwood.	Deadwood will be measured in cubic meters per hectare (m3/ha) as part of the forest inventory.
Forest Naturalness: Tree Species Range	Most Irish plantation forests are either monocultures or have a very narrow range of species present. By increasing the range of species, opportunities arise for greater biodiversity levels and increased resilience against climate change.	The tree species at each site shall be recorded in the forest inventory.
Forest Naturalness: Tree Size Distribution	Conventional forest management in Ireland is to homogenise tree sizes through thinning so that at felling all trees are of a similar size. Conversely, in CCF management, thinning is used to diversify the range of tree sizes in order to ensure a stock of trees over an extended time period. Therefore, the tree size distribution for any stand can be used as a strong indicator that stands are progressing towards CCF.	Tree Diameter at Breast Height ("DBH") can be used as a proxy for tree size and the DBH distribution is measured as part of the inventory process. DBH is measured in centimeters (cm) and a distribution across the DBH range of trees in each stand can be presented.
Forest Naturalness: Regeneration	Conventional forest management in Ireland does not encourage natural regeneration. In CCF management, thinning from an early age is used to reduce the basal area to levels that encourage natural regeneration and stands are retained allowing seeding to occur. For this reason, the presence of natural regeneration is considered a reasonable indicator of progress in CCF management.	The presence or absence of natural regeneration in the stand will be recorded in the forest inventory.
Forest Naturalness: Other Identified Biodiversity Features	At present, most conventional forest inventory systems in Ireland are weak with regards to the assessment and recording of biodiversity features and indicators. Apart from the features already proposed as indicators above, other features such as veteran trees, caves, cliff faces, old hedgerows, river banks, water courses, open species, inaccessible banks, springs, nesting sites, swamps etc. can be of high biodiversity value and should be recorded as such in the forest inventory.	Combined biodiversity data will be summarised per site on a site biodiversity map that quantified in area (ha) and percentage terms, the proportion of each site where biodiversity objectives are prioritised.
Forest Naturalness: Regeneration	Conventional forest management in Ireland does not encourage natural regeneration. In CCF management, thinning from an early age is used to reduce the basal area to levels that encourage natural regeneration and stands are retained allowing seeding to occur. For this reason, the presence of natural regeneration is considered a reasonable indicator of progress in CCF management.	The presence or absence of natural regeneration in the stand will be recorded in the forest inventory.

SLM Silva Fund: Irish coniferous forest with natural regeneration of trees.

04 Key Results 2022

Continuous Cover Forestry

European Commission

740,000 €

Technical Facility Grant from the European Investment Bank

under

The Natural Capital Finance Facility (NCFF)

Technical Facility Grant under The Natural Capital Finance Facility (EIB)

SLM Partners is currently working with a technical facility grant from the European Investment Bank (EIB) to build the knowledgeand toolkit needed to scale up CCF in Ireland. This grant will fund research by consultants engaged by the RPS Group, working closely with our local Irish forest manager, Purser Tarleton Russell (PTR) Limited. The SLM properties will provide data inputs for the research.

Research Objectives	Description
CCF Training and Capacity Building Programme	The project will develop a training programme on CCF management that will deliver 8 training workshops, training approx. 80 people across the UK and Ireland.
Generate Forest Inventory Data for Growth & Yield Models	The project will work with AFI (Association Futaie Irreguliere) and ISN (Irregular Silviculture Networks) to leverage software and data resources to monitor irregular stands and collect data that will drive growth and yield models.
Develop a CCF Carbon Accounting Methodology	Contrary to current forestry carbon models, this CCF carbon accounting methodology will simulate stock changes in litter and soils, in addition to biomass, deadwood and use-of-product. The project also aims to develop a series of tools to facilitate the registering of carbon projects under the VSC VM0003 methodology, underpinned by growth models of the transformation, regeneration, development and steady state stages.
Study Deer Carrying Capacity & Research Venison Markets	The project will study deer population and deer impacts on natural regeneration (growth of seedlings) as well as develop a deer management plan and training.
Develop Biodiversity Monitoring Indicators	There is currently a lack of scalable tools to measure biodiversity of woodlands. The project aims to identify biodiversity indicators, baseline measurements and assess the impact on biodiversity of woodland management practices.
Establish a CCF Group Forest Management Certification Scheme	The project will set up forest management group scheme and develop a roadmap to certification.
Research on Forest Soil Microbiomes and Impacts of Yield and Carbon Capture	The management of forest fungal microbiome has the potential to enhance not only timber yield, but also forest carbon capture in both stems and soils. The project will characterise the fungal microbiome across SLM's properties, perform soil transplants to inoculate forests with different fungal communities and track the impact on tree growth and carbon capture.

Continuous Cover Forestry

Case Study: CCF Training Course in the UK

The first session of the Continuous Cover Forestry training program financed by The Natural Capital Finance Facility took place in September 2022. The training sessions were held in Stourhead, Wiltshire and spread across 1.5 days. A total of 11 forestry experts, across 7 different organisations were in attendance.

The course provided an introduction to CCF management, covering the basics of this irregular silviculture management, from economics to biodiversity benefits. It also gave attendees the opportunity to participate in a practical marking exercise, which is a key technical skill required for irregular silviculture management.

A second training session to be held in both the UK and Ireland is scheduled for April 2023.

CCF training course in Stourhead, Wiltshire.

Permanent pasture land from SLM Australia Livestock Fund.

Sustainable Land Management

Thank you

Thank you for taking the time to explore SLM Partners' activities and impact results for 2022. If you have any questions, don't hesitate to reach us at **info@slmpartners.com**.

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