M&A WORLDWIDE

# REGENERATIVE FARMING

## Agri, Food & Beverages Sector

INDUSTRY REPORT 2021

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# 01. EXECUTIVE SUMMARY

This report has been produced by the Agri, Food & Beverages Industry Group of M&A Worldwide on the regenerative farming market. M&A Worldwide is a global network of M&A advisory member firms which includes 400+ individual members.

In July of 2019 there were some 70 investment strategies with assets under management of over $47.5 billion in regenerative farming, and that is just in the US.

The Croatan Institute, Delta Institute and the Organic Agriculture Revitalization Strategy report's authors estimate that some $700 billion of investment in regenerative agriculture in the next 30 years could not only return $10 trillion, a return on investment of 14.3 times but could mitigate nearly 170 Gigatons of CO2 emissions. (1)

The market is predominantly driven by the following key factors, which are discussed in further detail throughout this report.

- Increasing pressure to achieve CO2 reduction goals
- Water conservation
- Increased nutrition in produce
- Community food insecurities
- Increased demand for organic produce
- Supply of unique tools and accoutrements
- Soil improvement inputs

The Covid-19 pandemic has exposed vulnerabilities in the global food supply chain and has further strengthened the need for regenerative agriculture. (2)

(1) Louisa Burwood-Taylor July 2019

(2) Robbinex research

# 02. INTRODUCTION TO REGENERATIVE AGRICULTURE

Simply put regenerative agriculture is on the other side of the spectrum from extractive agriculture. The focus of regenerative agriculture is soil maintenance. Utilizing natural tendencies of ecosystems to regenerate, letting mother nature "do her thing". Key principles include:

- No dig and similar techniques aimed at reducing soil erosion
- Improving soil health, increasing microbial and fungal activity
- Increasing water preservation through improved retention
- Converting monocropping practices to the more beneficial diverse natural ecosystems delivered through polycropping
- Restoring habitat and biodiversity
- Eliminating the use of unnecessary and harmful inputs
- Utilizing beneficial organisms as a pest control strategy
- Growing the most nutrient dense produce
- Supporting farmer livelihoods
- Growing without dependency on petroleum
- Providing food security to local communities
- Creating a culture of permanence, continual environmental improvement

# 03. KEY DRIVERS

**Regenerative agriculture** is a return to traditional methods of farming without heavy machinery and chemical inputs. Eliminating heavy machinery results in less land needed as tractor paths and turning row ends can now be converted to growing spaces. Removing the use of chemical inputs reduces the cost of production, increasing grower profit. The barrier to entry is greatly reduced as smaller farms can increase productivity without expensive overhead. Lower barrier to entry results in regenerative agriculture attracting a larger next generation, something that modern farming is failing to do.

Regenerative agriculture practices reduce irrigation needs. A 1% increase in soil organic matter can increase water availability by up to an inch (over 2 centimetres) of rainfall per acre.(3) Beyond minimizing water use, regenerative agriculture eliminates pollution runoff by shunning chemical pesticides, herbicides, and fertilizers.

Regenerative agriculture leads to financially stable production systems through multi-crop growing. An increase in crop diversity results in an increase in climate resilience. The reduction of cost of input needs also leads to several other benefits. Produce grown is more beneficial to human health being higher in nutrients and lower in pesticide residue. Eliminating chemical inputs also leads to reduction in carcinogenic, respiratory and other health problems among growers. The surrounding communities also benefit from regenerative agriculture by reversing adverse effects of industrial farming such as soil/air/water quality, reduced land values, and damaged recreation and fishing economies. The health and financial outcomes from regenerative agriculture can improve the livelihoods of growers and their surrounding communities.

(3) Siegel, R. (2019, October 22)

# 04. THE OPPORTUNITIES

Manufacturers, suppliers and retailers of pots and pans profited most from the goldrush. The same can be said of the opportunity presented in the surge of interest in regenerative agriculture. The farmers themselves can earn decent wages. COVID pivoting has helped raise the awareness of the potential improved lifestyle opportunity for a no till market gardener utilizing regenerative agriculture methods. Curtis Stone (the Urban Farmer) maintains that as little as ¼ acre can provide an annual income of $60,000. A green revolution is in motion. Consumer demand for local produce is at an all time high and rising. The increase in interest in regenerative agriculture is driving a goldrush like effect on the supply chain. Seeds, tools, organic inputs, compost, biomass, irrigation systems, greenhouses and such are all in high demand and short supply. The industry supplying this opportunity is fragmented. Tech possibilities are also emerging, soil testing, nutrient testing, growing management apps and the like.

# 05. THE TRENDS IN THE SECTOR

## 5.1 Consumer Companies are Accelerating Investments in Regenerative Agriculture to Combat Climate Change

Multinational heavyweights, including **Danone** and **Nestlé**, have recently doubled down on their environmental protection efforts with the latter committing around $1.4 billion over the next five years to regenerative agriculture across its supply chain. US Food & Beverage Giant **PepsiCo** has set a target to eliminate at least three million tons of greenhouse gas emissions from its farmer suppliers by the end of the decade.

On their website, **General Mills** has committed to advance regenerative agriculture on 1 million acres of farmland by 2030.

Smaller premium brands are also catching up with their own sustainability schemes.

Organic chocolate maker **Alter Eco**, which sources its cocoa beans primarily from Ecuador, Peru and the Dominican Republic, and manufactures at a carbon-neutral facility in Switzerland, plans to invest up to $10 million to convert its total 20,000 acres of farmland into regenerative agriculture.

These investments will be made through the company's recently launched Alter Eco Foundation, its private equity owner NextWorld Evergreen, as well as several other organizations with similar missions in protecting biodiversity-rich regions. (4)

(4) Forbes Article December 2020

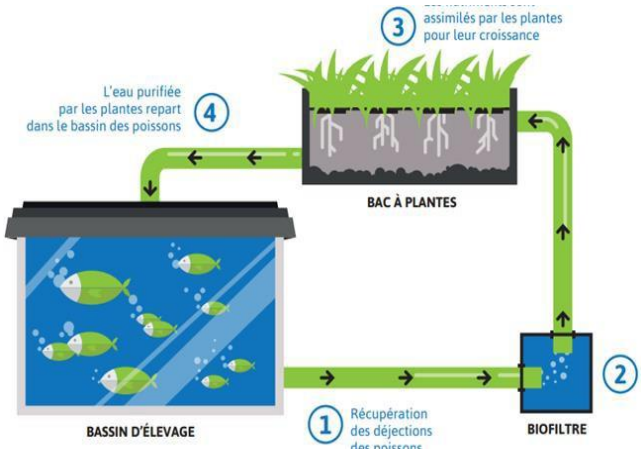
In Japan, research on the Regenerative Agriculture is carried out through industry-academia collaboration. **Utopia Agriculture**, which is based in Hokkaido and manufactures sweets using raw materials such as dairy products and eggs through grazing, is one of the few companies in Japan that is engaged in regenerative agriculture. Main initiatives are grazing using flatlands and mountainous areas, and breeding chickens by free-range farming, and Utopia Agriculture is studying sustainability in regenerative agriculture and dairy farming in collaboration with **Hokkaido University**, calling it "a challenge to demonstrate CO2 minus in grazing dairy farming".

## 5.2 Recent developments and international examples in Regenerative Agriculture: France

The regenerative agriculture market has attracted more investors over the last years as conventional farming runs counter consumers and government policies for a sustainable agriculture.

In 2019, Xaviel Niel, Matthieu Pigasse and Moez-Alexandre Zouari created **2MX Organic S.A** a SPAC specialized in the acquisition of companies operating in the sectors of production and distribution with a strong social and ecological impact. During their IPO on Euronext, the company raised €300M, highlighting the interest of the market in this challenge. Indeed, being able to protect soil, biodiversity while integrating livestock is becoming a necessity in view of the population increase expected in the coming years, while soils are getting poorer in nutrients and fertility. In parallel, a demand for regenerative farming is expected to increase largely due to the popularity of organic food.

# Aquaponic: Creating Symbiosis between Livestock and Plants




Fish is essential for the health of the population due to its strong concentration of Omega 3 and proteins. However, sea pollution as well as a real threat of marine species extinction, has made this industry harmful for biodiversity.

To counter this issue, **Local Ocean France** developed its own technology: Recirculating Aquaculture System (RAS) and forecast to invest €150M in it thanks to fundraising in 2022. With the support of VINCI and Billun Aquaculture, they have implemented a system allowing salmon farming in closed loop, the water is then filtered numerous times to ensure its quality and then reintroduced into the salmon's habitat. By creating an ecosystem, fishes feaces give nutrients to plants. Indeed, fishes reject ammonia which is highly toxic for them. The nitrifying bacteria present in the water has the capacity to transform this ammonia into nitrites and then into nitrates. This water, loaded with nitrates, is used to water the plants and, at the same time, provide them with the nutrients they need. The nitrate-free water is returned to the fishpond. It is also oxygenated thanks to the plants. Thus, this loop enables the farming of fishes, which are provided a water filtered naturally, enhancing their quality, and the cultivation of vegetables, fruits without any pesticides nor fertilizers.

Furthermore, aquaponic allows us to save 90% of water thanks to this cycle. Therefore, it answers the challenge: produce more food with less resources.

Moreover, aquaponic shows a very good yield per hectares. In France, in average, the yield is roughly 80 quintals/hectare whereas, **Les Nouvelles Fermes**, a French startup which raised €2M last year, reaches a yield of 200 quintals for a tenth of a hectare. Therefore, it allows them to produce a lot of vegetables and fruit with few fields, enabling the company to implement a business model in which food is consumed locally, reducing its carbon footprint, using few fertile lands, and lowering its investments.

## The yellow pea: a protein with a sustainable impact

Yellow pea protein process developed by **Roquette** under **Nutralys**™, can insure non allergic, gluten free, non-GM for consumers with the same protein insight as meat protein. Moreover, for the farmers who produce it, yellow pea production requires 40 times less water than wheat, without any $SO^2$ fertilizer. This pea even has the ecological ability to fix the $SO^2$ from the air to push it in the ground. Based on this sustainable statement, Roquette has invested € 500 million over the last 5 years to build 2 news plants in Canada Winnipeg and in France, in Vic sur Aisne.

Furthermore, in September 2021, the food industry leader, **Nestlé**, announced a €1.1Bn investment for the next 5 years in regenerative agriculture. This announcement goes hand in hand with their prior moves towards a more sustainable agriculture. Indeed, it already has developed 70 innovation products which integrate yellow pea protein in their recipes such as Sensational Vuna (i.e. vegan tuna).

Regenerative agriculture will be found in many aspects of our food of tomorrow, whether it is fishes, fruits, vegetables, or new sources of proteins. It can even happen sooner than expected as Danone stated that by 2025, all their raw materials produced in France will come from regenerative agriculture.

# Germany

Regenerative farming / Carbon farming today is a very small part of Germanys agriculture, mainly driven by engaged local farmers. The topic gets much more attention and several projects have been kicked-off since the **EU-Commission** has announced in April this year the launch a **carbon farming initiative** by the end of 2021. Executive Vice-President Frans Timmermans, responsible for the Green Deal, said: "Our climate action must first and foremost reduce man-made emissions. But we also need to restore and protect natural carbon sinks so we can absorb CO 2 from the atmosphere and store it in our soils and forests." He further said, "Carbon farming offers new income opportunities for farmers."

In their Farm to Fork Strategy the EU-Commission will promote carbon farming as a new green business model that creates a new source of income for actors in the bioeconomy, based on the climate benefits they provide. In addition, as announced in the Circular Economy Action Plan the Commission plans to develop a regulatory framework for certifying carbon removals based on robust and transparent carbon accounting to monitor and verify the authenticity of carbon removals.

The Commission plans to publish a Communication setting out an action plan for both initiatives by the end of 2021. (https://ec.europa.eu/clima/news-your-voice/news/commission-sets-carbon-farming-initiative-motion-2021-04-27_en).

In June 2021 **Bayer** launched its decarbonization program for agriculture in Europe. "The main idea is to reward growers for adopting climate-smart farming practices like using cover crops, tillage reduction, crop rotations and precision nitrogen application. These activities sequester carbon in the soil while improving soil health, resilience and productivity as well as limit emissions." says Bayer.
The program kicks off with over 25 farmers across seven countries in the EU and beyond: France, Spain, Belgium, Denmark, Germany, United Kingdom and Ukraine. To support these operations, Bayer will develop a digital tool which will allow farmers to claim rewards based on accurate and verified data. It will be compliant with current data privacy standards and will be reliable and simple to operate for every farmer.
The European launch is part of the company's Global Carbon Initiative which launched in the U.S. and in Brazil in July 2020. In these countries, Bayer is the first agriculture company to offer all the necessary technologies in terms of seeds and traits, crop protection and digital solutions, cost-efficient reporting and certification according to internationally recognized standards.
The Berlin-based start-up **Klim** is developing a digital platform and a consumer label for climate-positive agriculture. The label finances farms that remove CO2 from the atmosphere in the long term by building up humus.

The **Indigo Carbon Program** (https://www.indigoag.com/) which is already established in USA, entered Europe based on the assumption that the EU-Green Deal, Farm to Fork Strategy, and the creation of a robust regulatory framework for certifying carbon removals, presents an equally important opportunity. INDIGO begun to test the program's approach in Germany. In autumn 2020, they launched a pilot with Wasa, the world's largest producer of crispbread, and part of the **Barilla Group**, to test how rye crop growers in the company's supply chain could potentially reduce their field-to-shelf emissions by applying the regenerative farming practices. In June 2021 Indigo launched a full pilot of the Carbon program, with one of Germany's leading agriculture trading companies, **Beiselen**. Participating farmers have the opportunity to generate some of the first verified agriculture carbon credits in Europe.

The potato processor **McCain** announced in July 2021 that it is committed to more sustainability and is launching a development program for regenerative agriculture. By 2030, all arable land used for McCain is to be farmed completely regeneratively (globally app. 150.000 hectare).

# Ireland

Agriculture uses over one-third of the global land surface, and more acutely 67% in Ireland. There is rising pressure on the agriculture sector to adopt more sustainable farming methods or risk further damage to the soil & the environment. Regenerative agriculture has an opportunity to remedy this situation by focusing on soil health and organic matter in a productive system that prioritises a thriving ecosystem which can reduce fertiliser inputs.

Irelands agriculture industry is predominantly based on its natural ability to produce grass. However, the industry is currently relying on synthetic fertilisers to reach the increased demand for grass growth required for milk and beef production.

Launched in 2012, Origin Green is a national food and drink sustainability program, enabling the industry to set and achieve measurable sustainability targets that respect the environment and serve local communities more effectively.

The program collaborates with 53,000 farms and 324 leading Irish food and drink companies. In Ireland, Origin Green members account for c. 90% of the country's food and drink exports and over c. 70% of the Irish retail market.

Adaptive multi-paddock grazing is a regenerative farming technique currently being trialed by **McDonald's** and FAI farms to research the benefits of mob grazing and other regenerative agriculture principles and how to adapt it into the UK and Ireland beef farming systems. Mob grazing refers to keeping large numbers of cattle on a small land area and moving them frequently, allowing a rest period for the pasture to become fully mature and restore itself between each grazing. This system differs from rotational/strip grazing by having increased stocking density whilst providing longer rest breaks on the pasture in between.

**Danone** has been investing in regenerative agriculture, partnering with the international soil carbon initiative 4p1000 and is a founding member of the One Planet Business for Biodiversity coalition ("OP2B"). Danone actively use practices such as limiting chemical inputs, rotating crops, reducing tillage and using crop residues as compost.

In July 2021, **Glanbia** (an Irish global nutrition group with operations in 32 countries) launched a comprehensive sustainability strategy called "Living Proof". The strategy aims to achieve a 30% absolute reduction in carbon emissions from its processing sites by 2030 and will work with dairy farmers towards a similar cut in carbon intensity from milk production. One of the five core areas set out in the "Living Proof" strategy is regenerative agriculture. Glanbia will work with farmers to increase soil health on their farms. By 2025 all Glanbia milk suppliers will be required to keep an up-to-date nutrient management plan. Glanbia have also committed to planting 100,000 native trees and hedgerow plants by the end of 2021 as part of Operation Biodiversity.

Based in Co. Cork, the **Carbery Group** is a leading international manufacturer of value-added ingredients, flavours and cheese. They are currently trying to build the worlds first carbon-neutral dairy herd. They are seeking to utilise multi-species swards for carbon capture, and biodiversity on farms is being increased to reduce reliance on fertilisers and pesticides.

Irish start up Farmeye (https://farmeye.ie/) is a provider of digital soil management systems. Farmeye provides solutions for pasture-based agriculture and food processors who supply the major supermarket chains and need to be fully up-to-date with providing traceability and sustainability information.

The BRIDE Project (Biodiversity Regeneration In a Dairying Environment) is an innovative agri-environment project based in the River Bride catchment of north-east County Cork and west Waterford, Ireland. The project is co-funded by the European Union and the Department of Agriculture, Food and the Marine through the European Innovation Partnership ("EIP") funding initiative and the project will operate through the period 2018-2023. This project promotes Biodiversity within farming and financially rewards farmers for dedicating part of their farm to biodiversity regeneration.

The RBAPS Project is focused on developing "Results based Agri-environmental Payment Schemes" in Ireland and Spain. There are currently 31 farmers participating in the project in Ireland.

These participants have entered almost 120 hectares of farmed habitats across 106 land parcels. Each land parcel/ field entered under an RBAPS measure is assessed and given marks out of 10 based on the ecological quality of the habitat. Payments to the farmers are then based on the annual scores the fields under their management receive.

# Denmark

On October 5th, 2021, the Danish parliament approved a large investment and new regulations in the agricultural sector. The main goal is to reduce its emissions by 55-65% by 2030 compared with 1990 levels. The government has set aside 3.8 billion DKK (€510 million) to promote the sector's green transformation.

The plan encompasses several action points, including the focus on plant protein, biorefining and organics. This historic agreement will impact the Danish Agri economy and create new investment opportunities. India will also support some of these new targets, as they recently agreed to cooperate with Denmark in a range of key areas, including food and agriculture.

## Plant-based R&D - the largest public investment in EU

One of the highlights of the investment to be made is on plant-based foods and proteins. Denmark has announced over 1.25 billion DKK (€163 million) to develop and promote plant-based foods, and to encourage the planting of protein crops. The investment is the largest investment in plant-based research and development by any EU country to date.

## Organic food production

Denmark will also invest DKK 3.556 million (€462 million) to support a doubling of the area of organic agriculture. A strategy for ecology is also being developed that can support a doubling of the organic area, demand for organic goods, consumption, and exports.

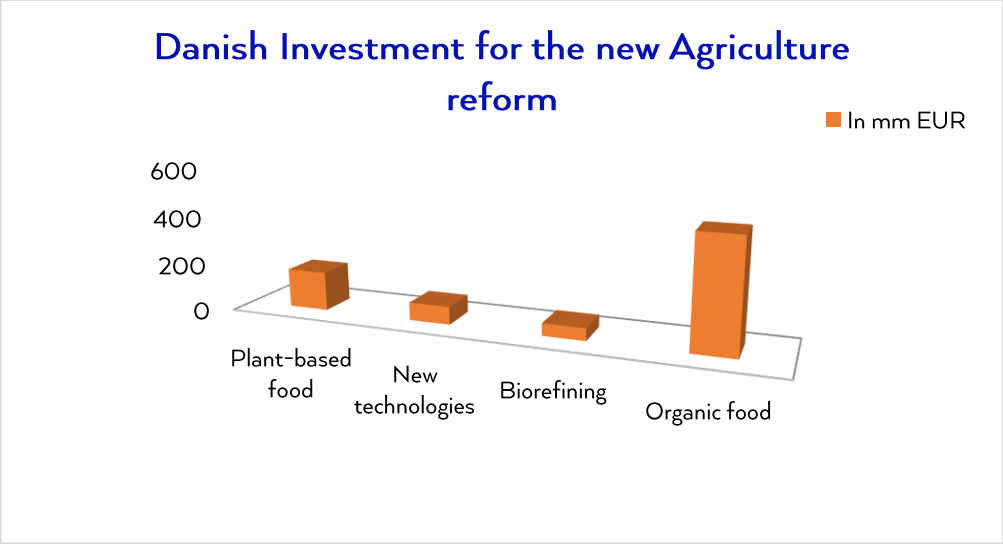
## New technologies

Part of the government's action plan is based on the development of new technologies to reduce the climate and environmental impact of agriculture. For that purpose, the Danish government is going to invest DKK 575million (€75 million).

## Same number of livestock, better emission handling

Although the new regulations do not mention a reduction in livestock production, they have agreed that emissions of livestock digestion and manure handling should be reduced.

Denmark will also invest DKK 396 million (€51million) for the development of biorefining such as pyrolysis.




## The agreement with India

Denmark will have a significant ally to reach some of the aspects of this agriculture green conversion. India and Denmark have recently agreed to cooperate on a range of key areas, including agriculture. The focus will be on agriculture related technology, creating joint ventures on food safety, cold chains, food processing and water management.

## To sum up

In order to reduce CO2 gas emissions, Denmark has recently agreed to start a set of activities and investment in the agriculture and food sectors. Livestock numbers will not be caped, but instead the focus will be on reducing its emissions and on plant-based and organic food. This needs investment, knowledge, and technology, creating several opportunities, namely for mergers and acquisitions. And this might be the world's prototype, as other countries might follow.

# 06. DONE DEALS

| Investor | Deal type | Target company | Target country | Activity | Deal value | Date |
|---|---|---|---|---|---|---|
| n/d | Venture Capital | CPG Central Plains Group | | Zero-waste, plant-based starch and proteins | £**5.62m** | Jul-2021 |
| n/d | Venture Capital | FungiAlert | | Disease management | £1.04m* | Jun-2021 |
| n/d | Seed funding | CPG Central Plains Group | | Zero-waste, plant-based starch and proteins | £3.2**5**m | May-2021 |
| BASF SE | Grant | GentleFarming Supporting regenerative agriculture in the UK | | Soil carbon offsetting | n/a | Jan-2020 |

*Fungialert has raised £5.94m since Jan-15 through a series of grants and early-stage funding*

| BUYER | ACTIVITY | TARGET | ACTIVITY | DEAL/VALUE | DATE | PRODUCT |
|---|---|---|---|---|---|---|
| ASTANOR | Venture Capital | V2FOOD | Plant-based protein dishes | Fundraising € 92 M | August 2021 |  |
| TELOS IMPACT | Venture Capital | GAÏAGO | Soil revitalization and agrosystem | Fundraising € 6 M | June 2021 |  |
| Crédit Agricole -Irdi | Venture Capital | NOUVELLES FERMES | Aquaponic | Fundraising € 1 M | January 2021 |  |
| ROQUETTE VENTURES | VENTURE CAPITAL | NXTFOOD | Veggie steak | Fundraising € 10 M | January 2021 |  |
| ROQUETTE | Plant-based ingredients & vegetal proteins | ROQUETTE Portage La Prairie | Nutralys Pea protein | Green Field €500 M | 2015-2020 | Nutralys |
| CREADEV | Venture Capital | INNOVAFEED | Insect protein for animal feed | Fundraising € 70 M | November 2020 | |
| BNP | Venture Capital | AGRILOOPS | Aquaponic | Fundraising € 1,4 M | February 2020 |  |

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# AGRI, FOOD & BEVERAGES SECTOR

INDUSTRY REPORT 2021

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