NATURETECH
OBSERVATORY

BRIEF #1

Surfing the regulatory wave

A NEW ERA
FOR NATURETECH?

MOTHERBASE™

CDC BIODIVERSITÉ | Caisse des Dépôts GROUPE

ABSTRACT

WHAT ARE THE IMPACTS OF INTERNATIONAL VENUES AND REGULATORY BREAKTHROUGHS ON NATURETECH SOLUTIONS?

With the surge of new regulations and international agreements, biodiversity is to become an even stronger topic in the following months. As large companies and financial institutions are beginning to draft specific strategies and engage large sums of money into ecosystem restoration, the rise of a new generation of startups bringing tech and disruption to the biodiversity economy is getting off to a modest start.

WHO WE ARE

We combine data, economic analysis and environmental expertise to explore the NatureTECH emerging ecosystem.

- **Database:** by using the Motherbase database, we collect and sort over 1000 start-ups developing different technologies in line with the Global Biodiversity framework of Kunming-Montreal.
- **Analysis:** thanks to the data appendix, we analyse economic trends and draft micro and macro analysis by sector and technologies.
- **Community**: because defending nature is a collective affair, we are a catalyst for businesses committed to stop and reverse the biodiversity loss.

BRIEF #1 - SURFING THE REGULATORY WAVE -
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From a global framework to the need for biodiversity tools

A global framework for biodiversity

The Kunming-Montreal agreements adopted by consensus at COP15 of the Convention on Biological Diversity supported the start of a new regulatory paradigm.

Focus on strategic targets to be achieved by 2030

- **Target 2:** restore 30% of all degraded ecosystems.
- **Target 15:** reinforces the need for financial institutions and large companies to ‘report their risks, dependencies and impacts on biodiversity’.
- **Target 19:** explicitly highlights the role of finance in combating the erosion of ecosystems and proposes the introduction of new tools to increase financing from all sources (in particular private funding) to generate $200 billions of biodiversity-friendly financing per year.

Among the 23 targets to be achieved by 2030, each target is playing a specific role that can drive significant nature tech development. Focusing on three of these targets allows to understand the intertwining between reporting regulations, financial needs and concrete ground actions.

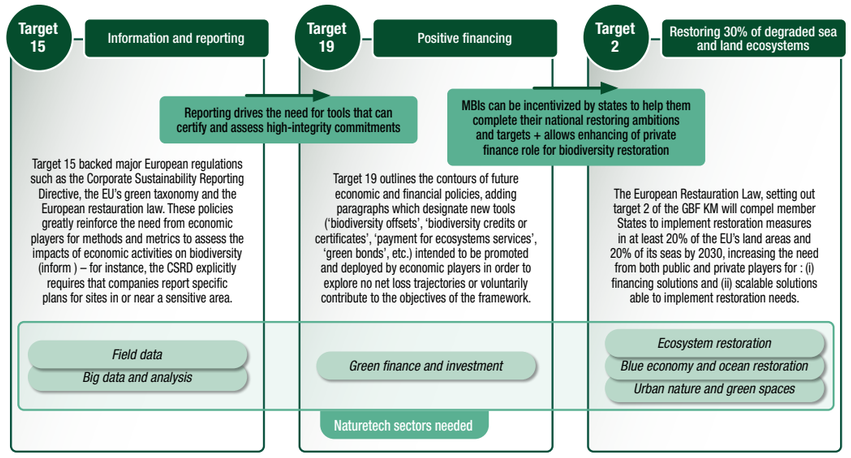

Figure 1 - Synergies between biodiversity targets regarding ecosystem restoration and Naturetech sectors.

In addition to information-focused regulations, global standards have been developed, such as the Taskforce on Natural-related Financial Disclosures (TNFD) or the Science Based Target Network for Nature (SBTN). These reporting frameworks enable companies and financial institutions to work more closely together around common methodologies, making it easier to read the information and take decisions.

More rules, more money ... more startups?

The signing of ambitious agreements is seen as a major step forward in providing a structured response on a large scale as the need to close a global biodiversity funding gap is estimated between US$ 598 billion and US$ 824 billion per year (Paulson Institute, 2020). Main fundings are to come from governments and to increase conservation and restoration efforts – yet the private sector can play a pivotal role and is expected to do so with the combination of target 15 on reporting and target 19 on financial flows increasing from all sources of GBFKM. Private companies and financial institutions can both increase additional fundings (direct biodiversity project funding) and trigger new and innovative ways of protecting and enhancing biodiversity (investing into biodiversity solutions).

Today, funding from the private sector into biodiversity conservation is estimated between 18 and 27,4 B$ annually (Deutz et al., 2023). These sums are mobilised in offsets impact activity under regulatory context (33%), business model transformation (29%) or to finance project or companies that can have a positive impact (22%). It is now crucial to increase this amount of funding, by broadening the reasons for funding towards positive contributions from private players to reverse biodiversity loss and to go further than compliance to be able to preserve and restore 30% of our maritime and terrestrial ecosystems by 2030 (Target 2, COP15). Some of these new fundings should and will probably also be directed towards investing in solutions accelerating and facilitating actions on the ground. For

instance, regarding restoring or preserving actions, the matter of process improvements is key. Unlike standardized industrial solutions, ecological engineering projects require tailored approaches, continuous monitoring, and extended timeframes to ensure ecosystem stability, making large-scale replication across diverse environments challenging (Mitsch & Jørgensen, 2004). One of the major obstacles from an economic and technical point of view lies in the methods used to analyse and monitor the ecological status of sites and the ecological benefits generated: these methods are often costly and time-consuming.However, some technologies are ready to be used as they successfully passed scientific robustness tests and/or have been used by academics for many years. eDNA analysis, for example, is a process that makes it possible to study nature using DNA present in the environment, simplifying the monitoring of biodiversity and is recognized for its efficiency and cost-effectiveness. Such solutions still need to be industrialised and developed on a very large scale to facilitate the success of 2030 biodiversity targets and could therefore accelerate and facilitate direct financing and ensure successful outcomes for GBF-KM.

Focus on EDNA

eDNA enhances conservation efforts by enabling efficient and accurate biodiversity assessments, which are essential for identifying areas of high conservation value or monitoring the success of ecosystem restoration actions. Its ability to detect multiple species from environmental samples allows for rapid assessments of biodiversity, aiding in the designation and management of protected areas or the identification of areas that could benefit from restoration actions. Moreover, eDNA can monitor changes in species composition over time, providing insights into the effectiveness of conservation and restoration measures.

To adress the direct project financing acceleration which is required (target 2 and target 19 of GBFKM), it is now necessary to build verticals in which existing technologies can be easily scaled.

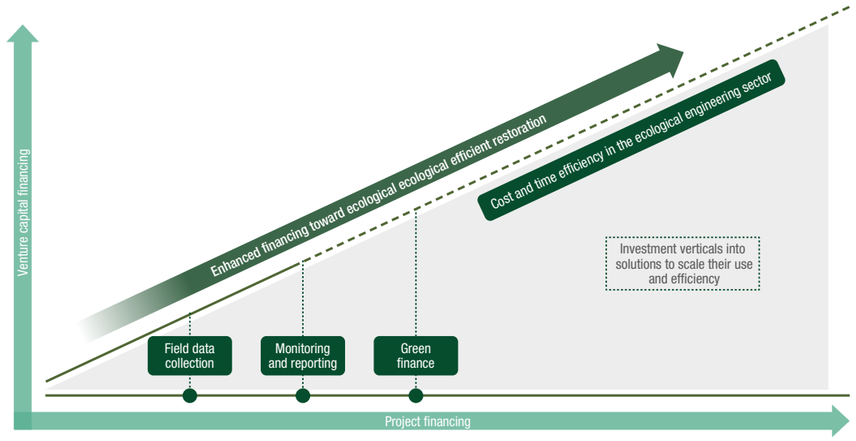

Figure 2 - Synergies between project financing and naturetech investment in the ecological engineering sector

An ecosystem yet to be discovered

In addition to the direct financing required, we must also reduce our impact on biodiversity by adopting new, more rational and frugal ways of consuming goods, building, eating and so on. Through topics such as the circular economy, regenerative agriculture and climate issues, this concern for transformation is fuelling a new ecosystem: the NatureTECH economy.

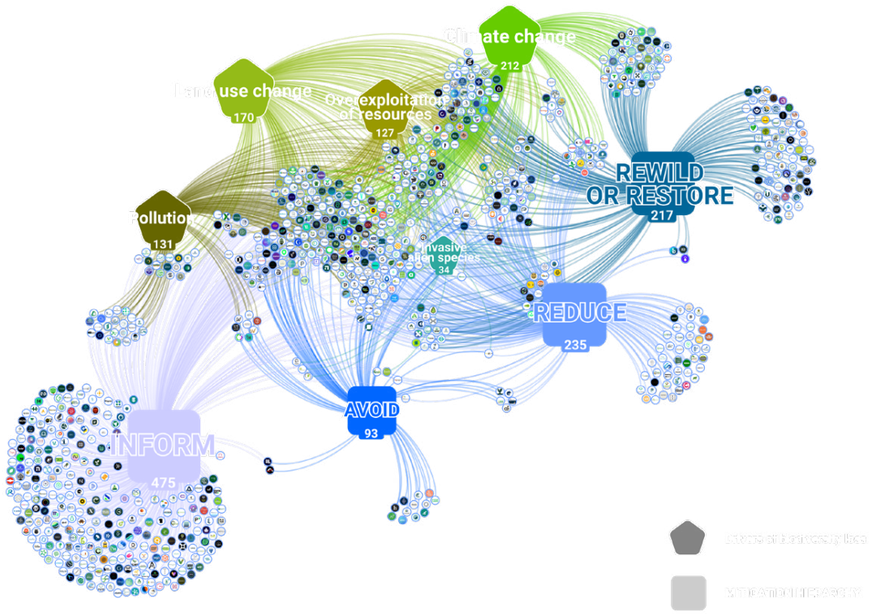

Figure 3 - 900+ startups have been classified using the mitigation hierarchy. (sources : Motherbase)

The special feature of economic players identified by the Observatory co-piloted by CDC Biodiversité and Motherbase is that they go beyond the borders of the world of biodiversity. Many startups don't always recognize themselves as nature focused, yet each may represent an opportunity to tackle the biodiversity crisis. The NatureTECH Observatory classified them using the mitigation hierarchy (inform, avoid, reduce and restore).

Such a classification aims to help identify the potential of economic players developing solutions that aren't necessarily biodiversity-oriented or biodiversity-related but can yet improve the delivering of biodiversity outcomes. Investing in NatureTECH start-ups seems to be a good proxy to mainstream biodiversity and nature in the business world. Private equity can bring innovative approaches to environmental issues and challenges, particularly by helping to scale and industrialise solutions.

It can also provide its technological expertise, for instance by making it easier for companies to report using AI solutions or by enabling more accurate and more numerous data to be collected on the ground. Existing solutions need dedicated channels within venture capital. Their inspiring stories can be a strong catalyst to the global business world and help gather larger crowds (and money) for the conservation of our natural world.

Overall number of NatureTECH startups referenced by the NatureTECH Observatory :

1063

VC AND EQUITY FUNDINGS

the overall number of deals represents 9,07 B$ in last December 2024, for 606 deals. 21% of those deals happened in the last two years for the equivalent of 14% of the total amount invested.

A STRONG FOCUS ON MRV AND NATURE BASED SOLUTIONS

almost half of the referenced solutions are data provider - 322 of them are specialized in monitoring, reporting or verifying data, while 148 startups also focus on field data collection.

CORE ECOSYSTEM

startups ranked as highly related to biodiversity raised only a fraction of the total amount invested (3,5%, 326 million $).

CAPITAL CONCENTRATION

more than half of the global fundraising get to 10 startups, the majority of which are developing plant-based meat alternatives or developing sustainable agriculture solutions. Those startups belong to the “avoid” and “reduce” categories.

GEOGRAPHY

more than half NatureTECH startups have headquarters in France, USA, Great Britain, Germany or the Netherlands.

France is the country with the greater number of new startups since 2022, yet American based startups concentrate more than half of the global fundraising.

Key trends and figures: a modest acceleration since 2022

Using our database, we analysed trends regarding three main indicators: the overall number of startups, their employment history and public information regarding their fundraising. Each indicator has been detailed in the appendix. Those trends can be directly linked to our taxonomy (see appendix).

For the past two years the NatureTECH world is emerging rapidly and is gradually taking shape around the issues raised by major international commitments. COP15 (December 2022) and COP16 (November 2024) have both accelerated this ecosystem. Evidence of this accelerated pace can be seen in the various metrics studied here, based on employment, fundraising and social networking data collected by the NatureTECH Observatory.

The pace set by the COPs and major European regulations seems to be setting the tempo, but also partly guiding the most targeted investments in biodiversity. Other factors, such as the fight against climate change or the growing need for alternative nutrition, are driving the biggest successes in this field. Yet biodiversity is becoming an increasingly autonomous issue, as evidenced by the new generation of start-ups focusing solely on biodiversity that has been emerging over the last two years.

Number of startups: a post COP16 rise

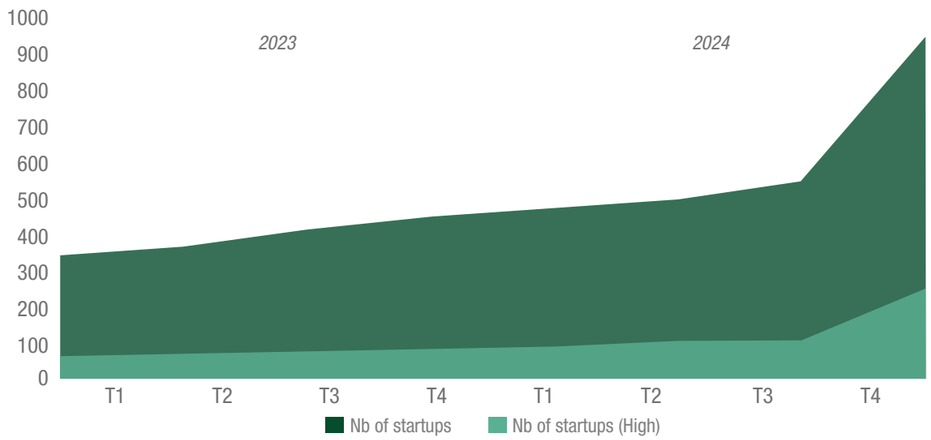

Figure 4 - There's been a significant rise in the combined numbers of NatureTECH startups' launches since the last COP16. (sources; Motherbase and Crunchbase)

A growing number of start-ups have been created in the last two years, rising from 343 start-ups at the beginning of 2023 to 951 at the end of 2024. COP16 in Cali served as an accelerator and launch pad. Several start-ups whose business model is particularly focused on biodiversity issues announced their launch during or following this global event.

In Brief: Two years after COP15, a major international meeting, the first ultra-specialised biodiversity start-ups are becoming more and more numerous (+ 127 since January 2023).

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Number of employees: a steady growth

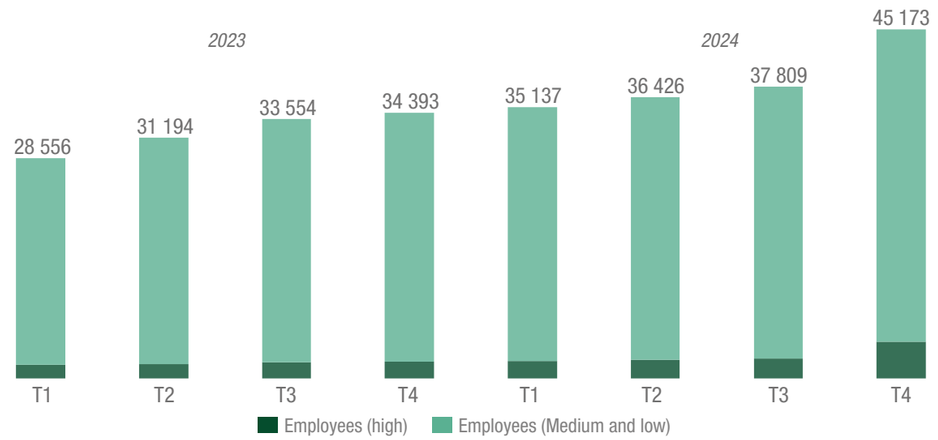

Figure 5 - The overall number of employees has risen by 58% in two years (sources : Motherbase and Crunchbase).

The consistent rise in employee numbers indicates that NatureTech startups are growing in both scope and scale, reflecting increased demand for their solutions in addressing biodiversity challenges.

While most employees are in startups with medium to low connection to biodiversity related themes, the number of employees working to develop solutions highly related to biodiversity grew by 170% from Q1 2023 to Q4 2024.

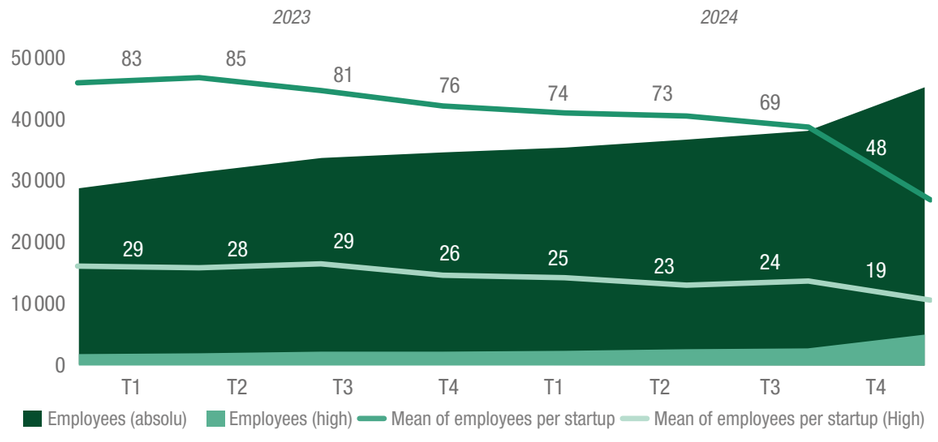

Figure 6 - While the number of employees has risen significantly, the average number of employees per startup has dropped given the recent foundation period of many of them (sources : Motherbase and Crunchbase).

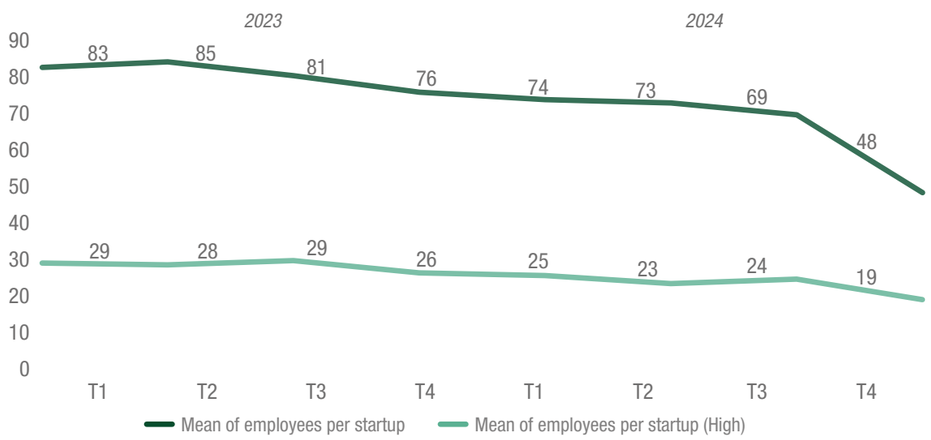

Figure 7 - A general increase of NatureTECH startup employees, with an overall acceleration of 64% between T1 2023 and T4 2024
(sources: Motherbase and Crunchbase)

The number of employees per start-up falls slightly, mainly because many start-ups were launched at the end of 2024. The overall distribution of employees is also even: even among the startups that have raised the most money, the number of employees deviates relatively little from the average. The top 25% of companies employ an average of 37 people, compared with a median of 14, and the 10 largest companies employ 1/3 of the workforce

In Brief: The number of employees is rising steadily, both because champions are emerging and becoming centres of employment, and because new start-ups are being created. The start-ups that focus the most on biodiversity are generally smaller, with an average size more than half that of the rest of the corpus.

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Social media: gaining ground

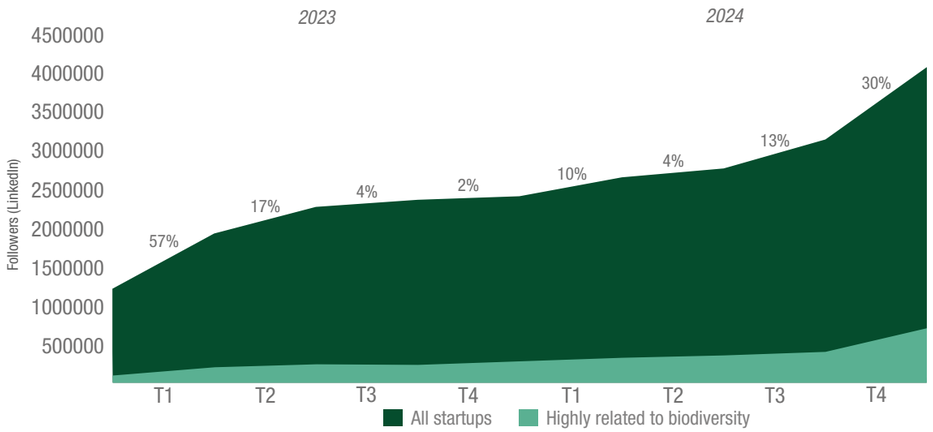

Figure 8 - number of followers on LinkedIN accounts
(sources: NatureTECH Observatory)

The count grows steadily over the period, more than doubling the overall number of followers from 1.3 million in early 2023 to 4.1 million in last quarter 2024. The effect of the two last COP (December 2022 and November 2024) could explain the two accelerations we can witness right after those world events, thanks to increased visibility, media coverage, or awareness campaigns.

Solutions highly related to biodiversity exhibit slower initial growth compared to the broader category of all startups. However, they maintain a consistent upward trajectory throughout the timeline – they represent 18% of the overall count. In fact, their growth has been slightly higher than less biodiversity focused NatureTECH solutions – a 423% increase in 2 years, against 172% for all startups.

This is certainly an essential stage in the growth of these young start-ups, especially those whose reputation is a selling point. This is the case for start-ups that are trying to activate purely voluntary levers, without regulatory support, such as B2C circular economy start-ups or start-ups seeking to finance the restoration of ecosystems.

In Brief: The main signal sent out by an emerging eco-system is media exposure. NatureTECH start-ups are attracting increasing attention (4x more viewers in the past 2 years), which could soon translate into investment.

Fundraising: launching a new ecosystem

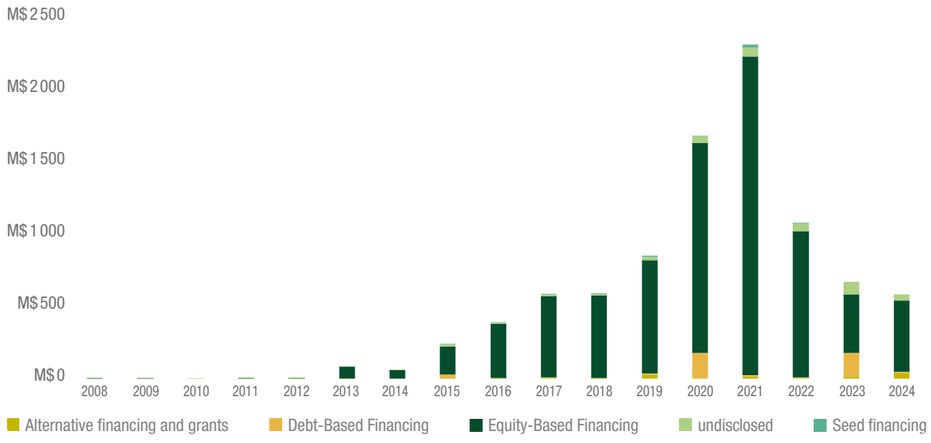

Figure 9 - Despite the marked slowdown in funding for start-ups from 2022 onwards, the companies with the most biodiversity-focused business models are continuing to raise more and more funds
(sources : Motherbase and Crunschbase)

2008-2014	2015-2021	2022-2024
The funding levels are minimal, indicating that NatureTech startups were either nascent or not yet gaining substantial attention from investors. Alternative financing and grants are higher during this period (~10%), likely reflecting the early reliance on public or philanthropic funding.	A significant rise in funding begins in 2015, with equity-based financing and seed financing gaining momentum. The peak in 2021, surpassing $2 billion, reflects heightened investor interest and major financing rounds, especially in plant-based meats solutions.	A relative decline in funding is observed post-2021, settling at a moderate level in 2023 and 2024. This may reflect market corrections, shifts in investor priorities, or market saturation in certain areas of the NatureTech space.

Equity-based financing remains the dominant category during the growth period while seed-financing shows significant growth post-2015. This indicates a steady inflow of early-stage investments, fostering innovation and encouraging new startups to enter the space.

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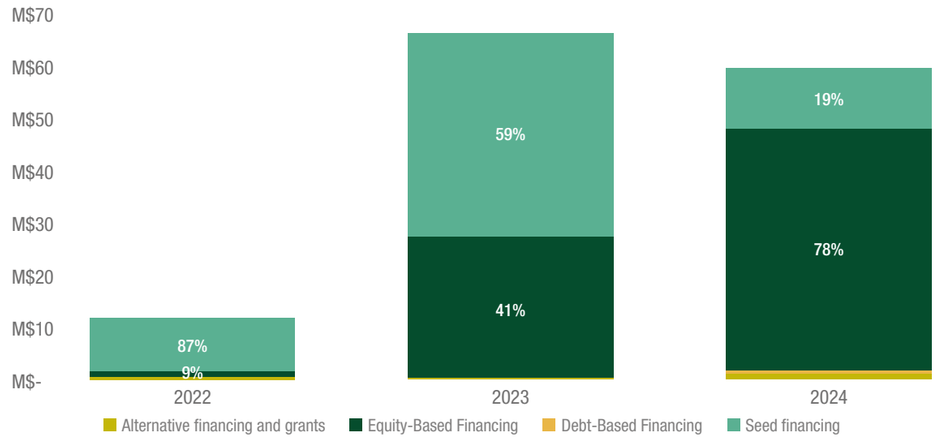

Figure 10 - Highly biodiversity related natureTECH solutions see a slight increase in fundings, especially for early-stage startups
(sources : Motherbase and Crunchbase)

The dynamic is quite different for the solutions highly specialized in biodiversity related themes, such as ecosystem restorations or filed data collection. Fundraising has grown substantially over the last three years, moving from less than $10 million in 2022 to nearly $70 million in 2023 and stabilizing at a slightly lower level in 2024. This category is dominated by seed-financing. That is coherent with the fact that many of those startups were launched very recently (see the number of startups analysis).

Funding remains modest compared with the hype generated by other areas of activity - according to PitchBook data, AI and machine learning startups attracted $131.5 billion in funding in 2024. In comparison, the size of the market for biodiversity solutions is still largely unknown, and uses for the solutions developed remain confidential.

In Brief: After a decade of uninterrupted growth in external funding, 2023 marked a turning point for the entire ecosystem: fundraising dropped significantly (-42% since 2023, EY, 2024).But it has increased sharply for the start-ups most specialised in the biodiversity field (>x6 between 2022 and 2023). Many start-ups have succeeded in raising seed and pre-seed funding, a sign of an ecosystem that is becoming more structured and is beginning to attract the interest of investors in line with the growing number of regulatory and voluntary initiatives.

5 start-ups matching COP15 Targets

We deliberately did not assess the transformative potential and scientific existing (or not existing) consensus about any of the developed solutions.

TARGET C2

Restore 30% of all Degraded Ecosystems

Ensure that by 2030 at least 30 per cent of areas of degraded terrestrial, inland water, and coastal and marine ecosystems are under effective restoration

118 countries with at least **1** national target

ZULU ECOSYSTEMS

Bringing together corporates and landowners to invest in high-impact ecosystem regeneration programs. Zulu's platform act as SaaS to better manage the ecological and financial elements of a restoration project, in connection with experts

FOUNDED DATE: 2020

LAST FUNDING TYPE: GRANT (763K $)

TARGET C7

Reduce Pollution to Levels That Are Not Harmful to Biodiversity

reducing excess nutrients lost to the environment by at least half

reducing the overall risk from pesticides and highly hazardous chemicals by at least half

working towards eliminating plastic pollution.

110 countries with at least **1** national target

aGRiODOR

L'ODEUR AU SERVICE DE L'AGRICULTURE

Developing alternatives to insecticides based on the natural scents emitted by plants. Agriodor use natural odors to develop attractive scents (kairomones) or repellent scents (allomones). When used in the field, these scents limit insect colonization and crop damage.

FOUNDED DATE: 2020

LAST FUNDING TYPE:
SERIES A (5.6 MILLION $, 2023) /
SERIES B (8 MILLION $)

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TARGET C10

Enhance Biodiversity and Sustainability in Agriculture, Aquaculture, Fisheries, and Forestry

Ensure that areas under agriculture, aquaculture, fisheries and forestry are managed sustainably

111 countries with at least **1** national target

feve

FErmes en Vie

Helping a new generation of farmers to settle down and convert their farms to agro ecology. FEvE connects investors, Farmers wishing to pass on their farms and young people looking to take them over.

FOUNDED DATE: 2020

LAST FUNDING TYPE: SEED

TARGET C12

Enhance Green Spaces and Urban Planning for Human Well-Being and Biodiversity

Significantly increase the area and quality and connectivity of, access to, and benefits from green and blue spaces in urban and densely populated areas sustainably

107 countries with at least **1** national target

greehill

Developing a smart tree inventory that maps, protects, preserves and grows urban forest.

The platform acts as a cloud-based solution that provides timely and accurate tree data and assessments, collected using ground-based LIDAR and imagery and processed with proprietary AI.

FOUNDED DATE: 2023

TARGET C15

Businesses Assess, Disclose and Reduce Biodiversity-Related Risks and Negative Impacts

Regularly monitor, assess, and transparently disclose risks, dependencies and impacts on biodiversity

Provide information needed to consumers to promote sustainable consumption patterns;

nala

Nala is a nature management platform for business. Organisations can measure, improve, report their impacts on nature & biodiversity and mitigate risks.

The platform can help report with leading nature regulations (CSRD) and frameworks (TNFD, GRI).

FOUNDED DATE: 2023

LAST FUNDING TYPE: PRE-SEED

APPENDIX

Using Motherbase, we collected startups based on AI algorithms & RPA before handpicking them one by one, carefully selecting them through a process with several levels of review. For example, start-ups that have not been active on the networks for some time or whose website is no longer updated have been withdrawn.

The startups have

Categories

See the details of our categories here.

Fundraising

The fundraising infos are mainly collected form Crunchbase. It concerns 609 transactions and 213 start-ups.

The information collected has been verified. Some amounts, particularly for seed financing and debat-based financing, are in fact not disclosed. The maximum amounts calculated from this database can therefore be considered as a low range for the general financing of NatureTECH start-ups.

1. Seed Financing

Intended for the very early stages of a start-up's development, these funds help validate an idea or develop a minimum viable product (MVP).

- **Angel**: Capital provided by business angels.
- **Pre-Seed**: Initial stage to test and validate an idea.
- **Seed**: Financing to develop a product and access the market.

2. Equity-Based Financing (Equity Financing)

These funds involve giving up equity in the start-up in exchange for capital, typically used to accelerate growth or scale up.

- **Venture**: Investments by venture capital funds for high-growth companies.
- **Private Equity**: Investments in private companies at later stages.
- **Equity Crowdfunding**: Collective participation in exchange for equity.
- **Corporate Round**: Strategic investments by large companies.
- **Post-IPO Equity**: Additional fundraising by a publicly traded company.

3. Debt-Based Financing (Debt Financing)

These funds allow start-ups to raise money without giving up equity but require repayment with interest.

- **Convertible Note**: Debt that can be converted into equity during a future funding round.
- **Debt Financing**: Traditional loans that must be repaid with interest.
- **Post-IPO Debt**: Debt raised after a company goes public.

4. Alternative Financing and Grants

These funds do not require giving up equity or repayment and are often allocated to specific projects or for social/environmental impact.

- **Grant**: Non-repayable funds.
- **Non-Equity Assistance**: Non-financial support (resources, incubators, mentorship).
- **Generic Funding Round**: Miscellaneous funding not specified in a particular category.

5. Undisclosed

The origin of the fundraising is not publicly known or referenced in Motherbase.

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CITATION OF THE WORK :
CDC BIODIVERSITÉ (2025), BRIEF #1 Surfing the regulatory wave, A NEW ERA FOR NATURETECH?

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MOTHERBASE™

Motherbase is an AI-powered SaaS solution for identifying, evaluating, and qualifying ecosystems and innovation entities. As of April 2025, Motherbase tracks and updates 190,000 innovation entities worldwide on a monthly basis.

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