



Partnerships for **Forests**

**Unlocking forest
investments
through
the Priority
Programme of
Bioeconomy**

March 2024

Summary

The Priority Programme of Bioeconomy (PPBio) is an investment mechanism for bioeconomy based on a Brazilian Government fiscal incentive policy, set up in 2018, to boost investments into biodiversity in the Western Amazon. Since its creation, PPBio has been coordinated by the Institute for the Conservation and Development of the Amazon, IDESAM. IDESAM has developed a series of actions to promote the bioeconomy by connecting the Industrial Pole of Manaus (PIM) financial capital with the Amazon's natural capital.

However, IDESAM struggled to connect investors with entrepreneurs and foster a more favourable ecosystem for the development of the Amazon bioeconomy. Partnerships for Forests (P4F) supported IDESAM to enhance PPBio, including strategies for scale-up and communication. As a result, GBP 17.2 million was raised from 27 tech companies, PPBio management capacity improved, and a communication strategy to inform people about the programme and connect stakeholders of the bioeconomy chain with investors interested in PPBio was implemented.

List of Acronyms

CAPDA: Committee for Research and Development Activities in the Amazon

EC: Enabling Conditions

EMBRAPA: Brazilian Agricultural Research Corporation

ICT: Institute of Science and Technology

IDESAM: Institute for the Conservation and Development of the Amazon

NTFP: Non-Timber Forest Products

PIM: Industrial Pole of Manaus

PPB: Basic Production Process

PPBio: Priority Programme of Bioeconomy

PPI: Priority Programmes

R&D: Research and Development

RD&I: Research, Development and Innovation

SUFRAMA: Superintendency of the Manaus Free Trade Zone

TIC: Information and Communications Technology

ZFM: Manaus Free Trade Zone



Background

The Brazilian non-timber forest product bioeconomy

Over the last decade, non-timber forest products (NTFPs) have grown in prominence worldwide, offering solutions to the great challenges of this century, such as climate change, food security, and biodiversity loss. NTFPs and the bioeconomy, widely understood as economic activity involving the use of biotechnology and biomass, are also an important element for sustainable rural development and provide a way to combine production and environmental protection¹.

Brazil's bioeconomy potential, especially in the Amazon region, is significant for sustainable development. It is seen as a crucial way of shifting from reliance on fossil resources to a greener economy based on biological and renewable resources and the sustainable and innovative use of biomass to produce bioproducts, bioinputs, biofuels,

and bioenergy². NTFPs and the bioeconomy, in general, have the potential to enhance agriculture in many ways, including food, fibre, and energy production, as well as providing environmental and ecosystem services. It also involves using green chemistry and innovative materials³.

However, some barriers remain to developing NTFP supply chains, including immature markets and limited market access, fragility of supply chain arrangements, lack of access to credit, lack of infrastructure, and low productivity for certain species. The absence of large business opportunities to add value to standing forests has led many forest-dependent communities to look for alternative land uses for their natural habitats, leading to increased deforestation hotspots.

1. According to Afonso (2022), "a bioeconomy based on forest resources can be defined as a set of economic activities to grow, harvest, process, reuse, recycle, and sell forest products, as well as the associated forest ecosystem services. When the concept of a bioeconomy for non-timber forest products is considered, it is highlighted that this activity must consider the environmental, social, and cultural aspects associated with the use of these resources." Available at <<https://www.mdpi.com/1999-4907/13/12/2046>>.

2. Bioeconomy in the Amazon: Conceptual, Regulatory and Institutional Analysis. CPI, 2022. Available at <<https://www.climatepolicyinitiative.org/pt-br/publication/bioeconomia-na-amazonia-analise-conceitual-regulatoria-e-institucional>>

3. Bioeconomia. Empresa Brasileira de Agropecuária – Embrapa. Available at <<https://www.embrapa.br/tema-bioeconomia/sobre-o-tema>>.

Geographic scope of the Brazilian Legal Amazon

The Amazon makes up 58.9% of Brazilian territory, embracing nine of the country's 27 states in the North, Northeast, and parts of the Centre West of the country.

Officially called the Legal Amazon, it is divided into the Western and Eastern Amazon. Composed of the states of Amazonas, Acre, Rondônia and Roraima, the Western Amazon

holds 42.97% of the Legal Amazon's territorial extension and contains approximately 57% of the region's forests. It is the best-preserved part of the Amazon, in addition to representing a large stock of biodiversity⁴. The Eastern Amazon is made up of the states of Pará, Maranhão, Amapá, Tocantins and Mato Grosso, covering part of the Cerrado biome and part of Pantanal in Mato Grosso state.

Figure 1: Brazilian Legal Amazon

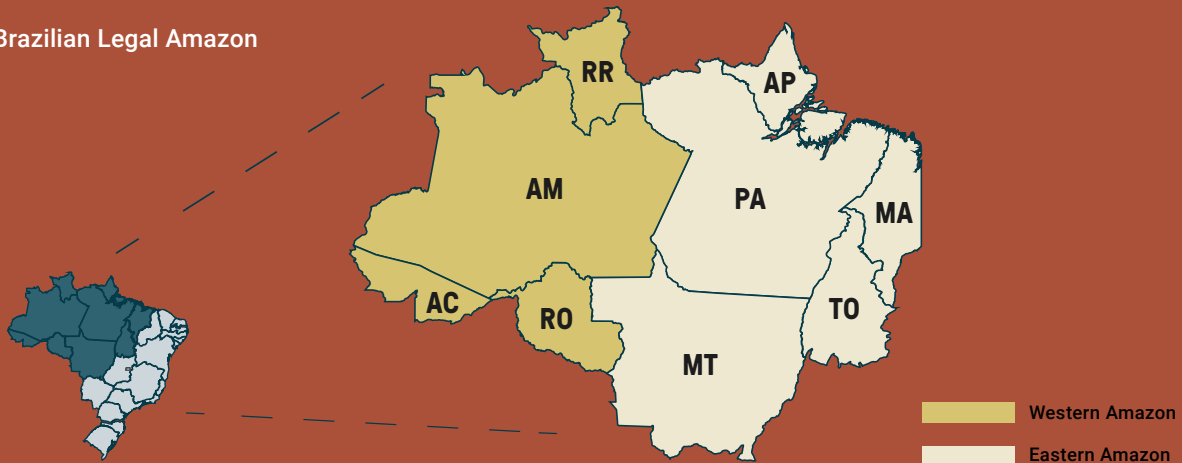


Photo: Envato

The Industrial Pole of Manaus

The Brazilian Government created the Industrial Pole of Manaus (PIM) more than 60 years ago, with the objective of fostering the Amazon economy and promoting better productive and social integration between the region and the rest of the country. It achieves this mainly by offering tax incentives to companies located there, such as tax reductions or exemptions and simplified bureaucratic processes. The PIM covers an area of ten thousand square kilometres around its centre, Manaus, the capital of Amazonas state, and is also known in Brazil as Manaus Free Trade Zone (ZFM).

The PIM was established by Law No. 3,173 in 1957, but only became operational in 1967 when it was restructured to include the entire Western Amazon⁵ (states of Amazonas, Acre, Rondônia and Roraima) by Decree-Law No. 288. The same decree instated the Superintendency of the Manaus Free Trade Zone (SUFRAMA) as the federal authority responsible for administering federal tax incentives established within the PIM policy.

4. Amazônia Ocidental. Available at <<https://www.gov.br/suframa/pt-br/assuntos/amazonia-ocidental>>.

5. In 1991, Amapá was included in the PIM through Law No. 8,387/1991, which became known as the Manaus Free Zone IT Law.

Fiscal incentives for companies in the PIM

The PIM free trade area offers companies established within its boundaries incentives and benefits that make them more competitive in domestic and foreign markets. These include the suspension of Import and Export Taxes, exemption from Tax on Industrialised Products – linked to the import of goods into the PIM – and preferential access to computers, automation and telecommunications products developed in the country. Companies in the PIM employed about 110 thousand workers in 2023 (+26% compared to 2018)⁶ across various sectors, including computer goods and electronics, metallurgy, mechanics, chemicals, automotive (two-wheeler), beverages, and the furniture industry.

The main requirements for a company to get approval for industrial projects and have access to PIM's tax incentives are:

- Compliance with the Basic Productive Process (PPB), setting out the manufacturing steps a company must complete;
- Creating jobs in the region;
- Providing social benefits to workers;
- Achieving increased productivity and competitiveness;
- Investing in training and human resources for scientific and technological development;
- Having an industrial project approval with annual limits of input imports.

Public policy on Priority Programmes in Brazil and the Amazon

In the 1990s, the Brazilian Government introduced Priority Programmes (PPI), governed by the National Informatics Law (Law No. 8,248/91). The initiative aimed to boost the competitiveness and technical skills of Brazilian companies in information technology, automation, and telecommunications.

Under this law, companies in the technology sector receive tax incentives if they invest in research and development (R&D) through a PPI⁷. Over time, additional laws – including Law No. 8,387/1991 and the New IT Law (Law No. 13.674/18) – were enacted to specify the investment needed for companies to qualify for tax benefits. For example, to benefit from tax incentives for information and communications technology (ICT) goods and services produced in the PIM, companies must invest at least 5% of their annual gross revenue in research, development and innovation (RD&I) activities focused on the Amazon's regional development.

The New IT Law broadened the scope of companies eligible for tax incentives and introduced various PPIs for the PIM region's development, such as the Digital Economy, Human

Resources Training, Innovative Entrepreneurship, Industry 4.0, and Bioeconomy Priority Programme (PPBio), which is the focus of this case study. These laws both encourage R&D and facilitate the creation of investment funds and redefine the PPIs for regional development.



Photo: Michel Paz

6. Available at: <https://www.gov.br/suframa/pt-br/publicacoes/indicadores/caderno_indicadores_janeiro_mairo_2023_gerado_em_10-07-2023_pdf/view>

7. Desenvolvimento da Indústria 4.0 no PIM a partir de programas prioritários. 2021. Available at: <<https://ojs.brazilianjournals.com.br/ojs/index.php/BRJD/article/view/41365/pdf>>

PPBio – The Bioeconomy Priority Programme

Context

The PPBio channels the required RD&I investments made by companies located in the PIM into bioeconomy initiatives in the Amazon region. Its objective is to promote innovation, competitiveness and economic diversification in the Amazon, based on the sustainable use of biodiversity and the conservation of natural resources. To do so, it works to overcome three bottlenecks by:

1. Creating a stable and viable business environment for companies and investors;
2. Unlocking private investments for RD&I in the bioeconomy; and
3. Fostering entrepreneurial human capital.

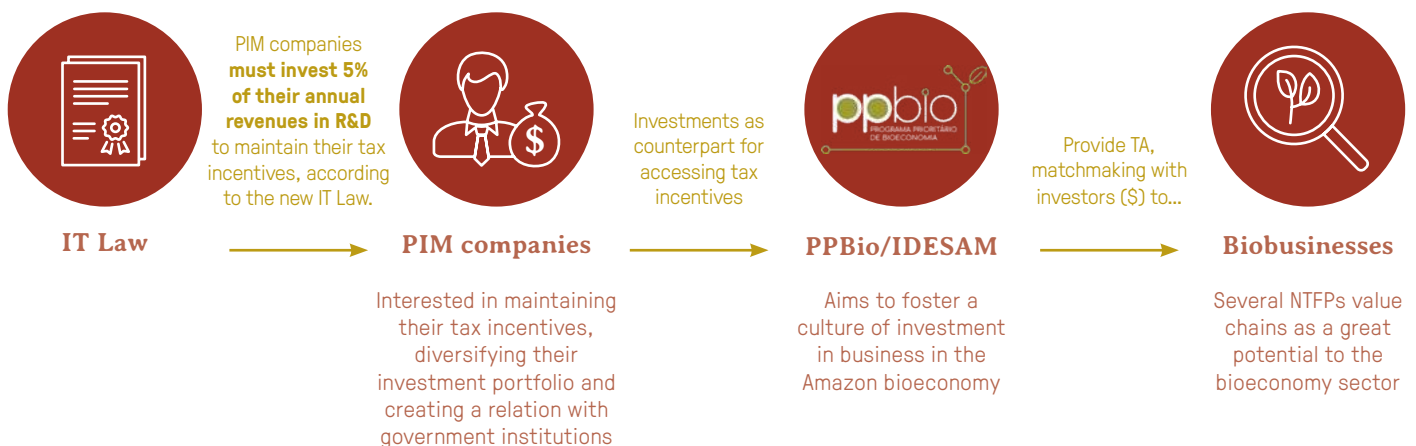
Since 2018, the PPBio has been managed by IDESAM, a non-profit organisation that seeks creative solutions to social and environmental challenges that mainly impact vulnerable communities in the Amazon. As the PPBio coordinator, IDESAM is responsible for promoting the bioeconomy and connecting the financial capital of industries located in the PIM with the natural capital of the

Figure 2: PPBio's operational area



Amazon. It acts as a sort of investment fund that identifies investable projects, promotes these with companies to secure their mandatory RD&I investments for PPBio (as opposed to other PPIs), supports teaching and research institutes once the investments are secured, and reports on the use of resources raised.

Figure 3: How PPBio works





Essentially, the PPBio competes with other PPIs for investments made by companies in the PIM. If a company decides to invest with the PPBio, IDESAM agrees with them which specific biobusiness the money will go to – usually incubators, institutes of science and technology, impact businesses or bioeconomy startups. The PPBio invests in biobusinesses that develop solutions to use the Amazonian biodiversity sustainably, including:

- Researching active ingredients and new materials;
- Synthetic biology, nanobiotechnology, biomimetics, and bioinformatics;
- Processes, products, and services intended for the bioeconomy;
- Technologies to support regional productive systems – bioremediation technologies, treatment and reuse of waste;
- Businesses with social and environmental impact;
- Establishment or improvement of incubators and bioindustry parks.

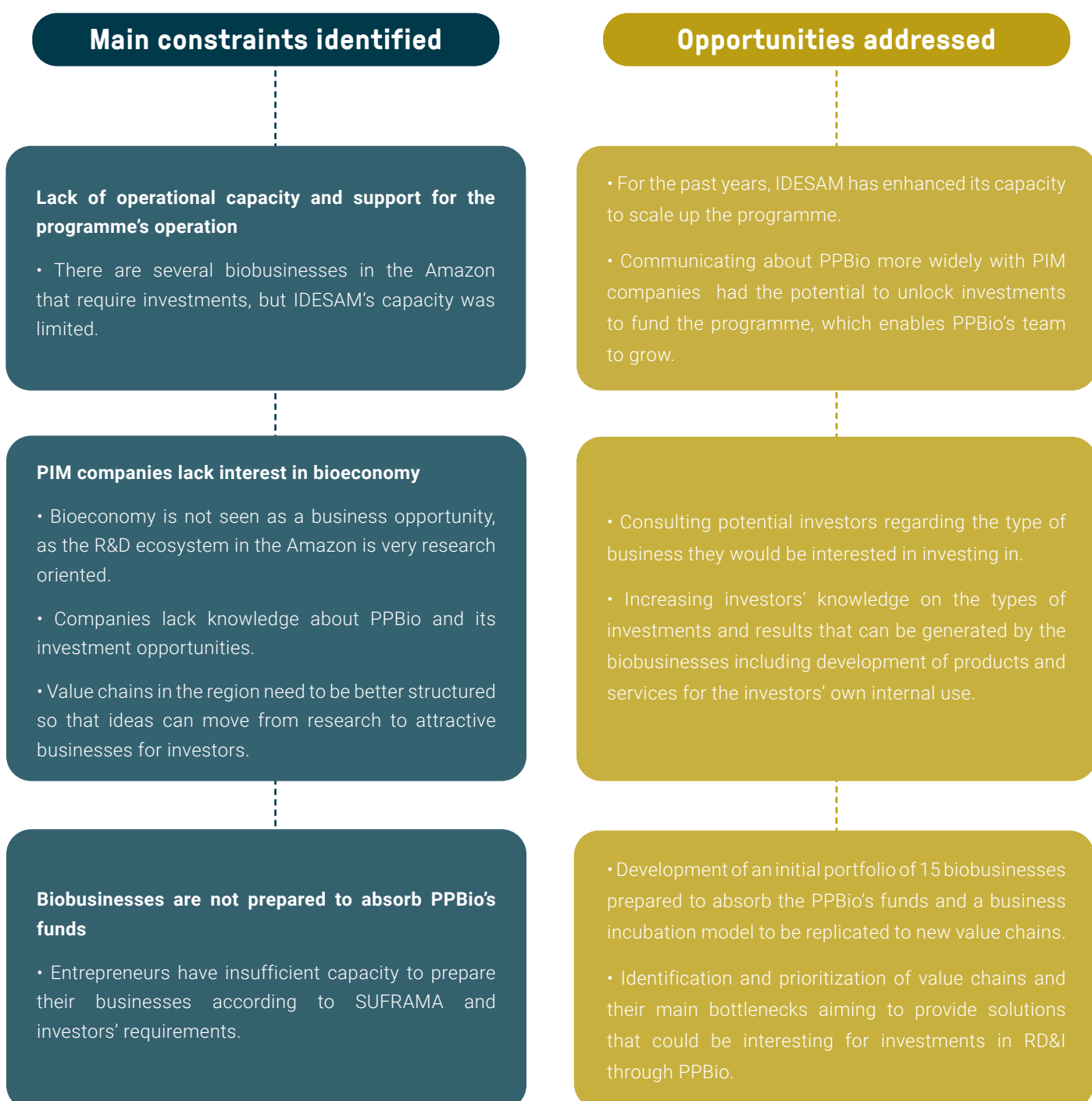


The P4F intervention

With the various PPIs in the PIM competing with one another for the mandatory investments, the PPBio struggled to attract the attention of companies and channel significant resources into biobusinesses. This was due to inefficient processes and insufficient capacity for selecting and strengthening investable biobusinesses, inadequate communication of the PPBio with investor companies,

and a lack of communication between investors and investees. Although the Amazon has great potential for new bioeconomy ventures, resources were limited and unstructured. Between 2021 and 2023, P4F supported IDESAM to address these challenges and channel investments into the Amazon's bioeconomy.

Figure 4: Constraints identified and opportunities addressed in the project with P4F



P4F supported IDESAM to strengthen the PPBio through three key activities: through the establishment of a business incubator model and an investable pipeline, through the development of a scale-up model to boost PPBio's fundraising and internal capacity, and through the development of a communication strategy to communicate about PPBio more widely with key stakeholders.

A) Establishing a structure for investments in the bioeconomy through a business incubator model and a portfolio of new investment opportunities, in line with SUFRAMA's and investors' requirements. A business incubation model for the PPBio's scale-up strategy was developed by supporting 15 biobusinesses in the açai, vegetable oil, Brazil nut and restoration value chains. It follows five steps:

Figure 5: The incubation model developed in the project with P4F

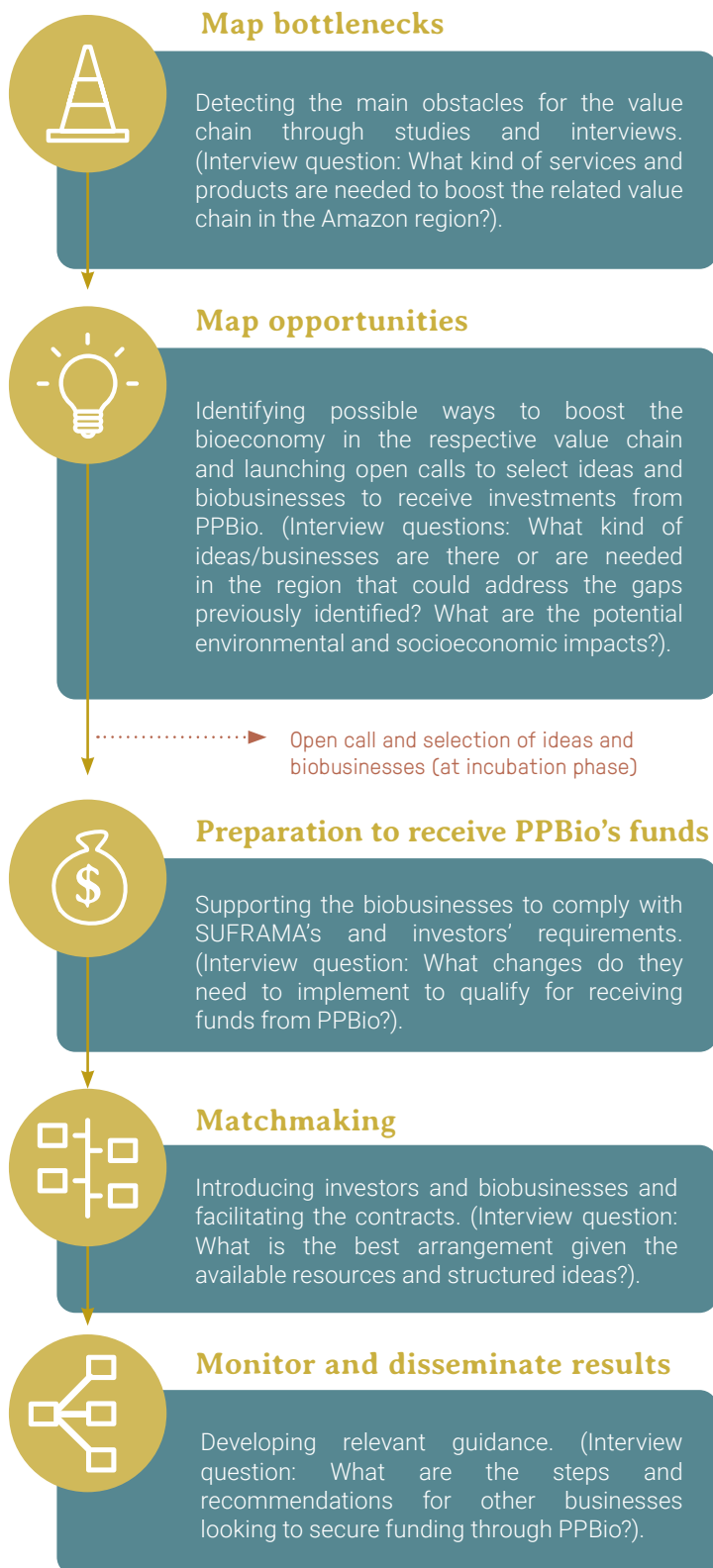




Photo: Fred Rahal

B) Developing a scale-up strategy for the PPBio, in line with its fundraising potential, and an in-depth analysis of the bioeconomy's growth potential and the operational capacity needed by IDESAM to support these projections.

This scale-up strategy is based on pillars of activities with three key stakeholders:

1 PIM companies:

identifying investable biobusinesses by developing and implementing an engagement strategy to understand the PIM companies' investment interest, needs and challenges.

2 IDESAM:

strengthening IDESAM's organisational capacity by undertaking a review of the team structure and internal operational process improvements.

3 Biobusinesses:

preparing the biobusinesses to receive investments and identifying new biobusinesses and value chains for future investment rounds by adapting the new incubation model to the requirements of different value chains.

C) Structuring and implementing a communication strategy to share the PPBio's portfolio with key stakeholders, including PIM companies, entrepreneurs and incubators.

The project implemented this mainly through:

1. A [website](#) to showcase the PPBio's portfolio and results to any potential investor and to disseminate the initiative to other biobusinesses; and
2. Events, press relations and social media.



Results achieved to date

Successful incubation model

The incubation model proved to be efficient in selecting and supporting biobusinesses. As part of this new model, the “Elos da Amazônia” (Amazonian Links) public calls were introduced, including four launched for açai, vegetable oils, Brazil nuts and forest restoration value chains during the P4F-supported project. The calls were designed to identify innovative solutions to the challenges faced by the value chains in the Amazon.

As a result, 15 biobusinesses from the Amapá, Rondônia, Roraima and Acre states were selected to receive funding from the PPBio. These businesses demonstrated a higher level of comprehension of and alignment with the PPBio and its purpose after participating in the new incubation process than previously benefitting businesses who had not participated in the incubation model.

Improved management capacity

In parallel, IDESAM received technical support through an online platform to enhance the management of internal processes. This involved automating the formalisation of projects, adding new projects, managing investor relations, and managing data from PPBio-funded projects.

This increased the IDESAM team’s operational capacity, allowing them to conduct all activities as planned, achieving the expected results, and expanding the PPBio’s portfolio, thus increasing resources raised from PIM companies to the PPBio.

As part of this, a Fundraising Specialist was hired. They created a marketing strategy to attract more PIM companies to the PPBio, engaging with investors to increase bioeconomy sector investments and matchmaking between investors and entrepreneurs. Four other professionals were hired to increase IDESAM’s operational capacity.

Improved communication strategy

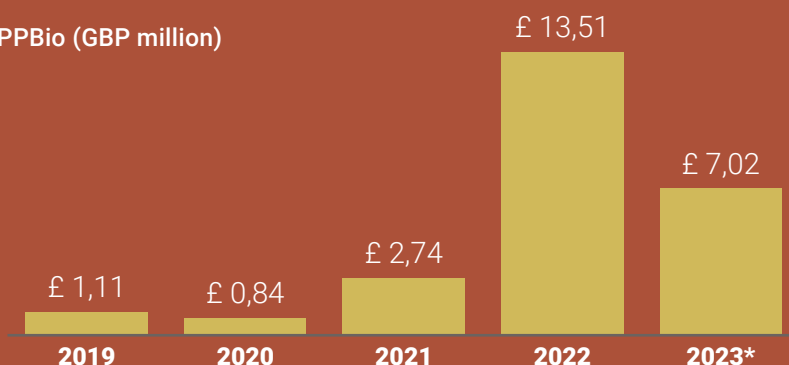
The newly developed communication strategy allowed the PPBio to communicate widely about its projects and opportunities, and to connect more closely with bioeconomy sector stakeholders and investors interested in investing resources into the programme. IDESAM used five communication channels: the press, social media, newsletters/email marketing, events and the PPBio’s website. The website was improved and now lists detailed information about the programme, such as the biobusinesses it has supported, and its goals, results and partners. It also provides an application space for biobusinesses aiming to access the PPBio’s resources.

The events promoted by the PPBio were one of the most effective forms of communication. They increased the programme’s credibility and attracted new partners and investors by enabling PPBio and its partners and investors to interact and promoting dialogue and idea sharing.

PPBio in numbers

The implementation of these activities resulted in an increase in funds raised by the PPBio, from R\$4.2M (£840.7k) in 2020 to R\$68.0M (£13.5M) in 2022. With the £2.74 million (R\$13.8M) raised in 2021, the total raised over this period was R\$85.9M (£17M).

Figure 6: Funds raised by PPBio (GBP million)



(*) up to April 2023



Photo: Thiago Looney

A learning process to gain feedback from supported biobusinesses was also developed. It found that the PPBio:

- Understands bioeconomy problems and creates dialogue with the biobusinesses to find solutions for Amazonian challenges.
- Is a gateway for startups to be part of the Amazon innovation ecosystem.
- Encouraged the development of new, innovative products with potential for the international market and enabled startups to receive support from specialists to improve processes.
- Made it possible to move businesses from ideas to reality. Many of these business ideas were developed in universities and technical institutes, but with IDESAM's support were able to take on an entrepreneurial form.
- Promotes business, generates jobs and opportunities for the Amazonian community.

Feedback from representatives of PPBio-supported biobusinesses and companies investing through the PPBio at a workshop in Manaus in early 2023 indicates that PPBio is now considered one of the main initiatives in the Amazonian bioeconomy sector.

“With the PPBio partnership, Agrosmart is managing to extrapolate its products with the aim of making the agri-food chain more productive, sustainable and resilient”

Paulo Quirino, Agrosmart, Head of operations.

“PPBio was of paramount importance for the development of foodtech, enabling resources and a network of connections to bring us closer to strategic partners”

Pricila Almeida, SmartFood Vegan Protein, CEO.

“PPBio's support is essential for the development of projects that seek to value the community and women extractors and preserve the forest”

Anderson Firmino, Inova Manejo, Partner.

Figure 7: Key results achieved during the P4F-supported project



Expected results



Achieved results



(May 2023)

2.0M GBP

raised for PPBio in 1 year through mandatory investments from PIM companies



17.5M GBP

through capital injection up to the end of the project (BRL 74.3M)

At least

15 New bio-businesses supported through PPBio by the Manaus Free Zone companies



15 New bio-businesses supported through PPBio by the Manaus Free Zone companies

Network with at least

10 companies committed in investing in PPBio



27 companies committed in investing in PPBio

7.8 GBP

In value for money



45.7 GBP

In value for money

1 Online information system increasing the efficiency of management processes, enabling PPBio's scale-up strategy through the 7% fee rate to its coordinator



1 Online information system improved even more, increasing the efficiency of management processes and enhancing communication



3 Events to disseminate bioeconomy consolidating PPBio as a leader on identifying and supporting solutions for this sector



1 Field trip to 5 states in the North region to disseminate PPBio, attract new partners and initiatives

Example of how initiatives worked with the PPBio

Through resources from the PPBio, the startup Inova Manejo expanded its support to local communities in the state of Amapá for the production of oils and resins. Inova Manejo was created by postgraduate students and researchers from Amapá, who are specialists in applying forestry and socio-environmental innovation. The 'New artisanal press for extracting oil from pracaxi seeds' project is carried out in partnership with the Brazilian Agricultural Research Corporation, Embrapa, a public research company linked to the Brazilian Ministry of Agriculture, Livestock and Supply. It works to extract oil from pracaxi and andiroba seeds in the estuarine region of the state.

The process of extracting pracaxi oil, a product used as an anti-inflammatory, anti-venom, and healing serum, is a cultural practice among communities in Amapá. Before the project, the communities' wooden press allowed the proliferation of

microorganisms such as fungi and bacteria, which interfered with the acidity of the oil. The newly developed artisanal press has a stainless-steel plate and a hydraulic jack and produces oil of better physical-chemical quality. In addition to reducing the physical effort, the press has had a significant impact on improving the quality and purity of the extracted oil.

“With the essential oils market growing, the execution of this project is essential to help communities carry out extraction following parameters of good practices and added value. It is an activity carried out mostly by women, benefiting approximately 300 people”

says **Daniele Alencar**, founding partner of Inova Manejo.

Main conclusions and key lessons learned

P4F's support strengthened the PPBio so that it became part of a wider ecosystem of biobusinesses and investors, and it has become well-established amongst bioeconomy actors in the Amazon. A remaining challenge for the PPBio is that, because it is a public programme, it cannot attract commercial capital and become a self-sustained business.

The innovation ecosystem in the bioeconomy sector in the Amazon region is still very new and not well structured, so projects like this play an important role in improving the structure, fostering other incubators, accelerators and ICTs, and raising funds made available through the PPIs.

Key lessons from these activities include:

- **Public incentives and private funds work together:** the public incentives provided by the tax benefits to companies in the PIM were essential in unlocking private sector investment for the bioeconomy. The combined forces of the public and private sector have the potential to move the economy towards a more inclusive and sustainable future.

- **External support was needed to unlock investments:** tax incentives and priority programme policies were insufficient to deliver their full potential so carefully designed external

support (provided by P4F in this case) was needed. Comparatively small investments in the capacity of key market access players – such as IDESAM, on behalf of the PPBio – can unlock large investments into the bioeconomy and sustainable land use sectors.

- **Additional funding is needed to support biobusinesses to deliver on-the-ground impact:** the support to IDESAM successfully strengthened the PPBio, but further philanthropic and company investment is needed to boost the bioeconomy sector, so preserving forests and providing sustainable development options for communities.

- **Transforming RD&I ideas into businesses is vital:** research centres need support to transform technical ideas into viable businesses, enabling them to reach the people of the forest as well as its biodiversity, generating a virtuous economic cycle.

- **Multi-stakeholder cooperation is needed:** thanks to the support provided by P4F, IDESAM, and by extension the PPBio, has promoted cooperation and coordination amongst key actors – including government, companies, research institutions, NGOs – to strengthen the bioeconomy ecosystem in the Amazon.

This case study was developed by Partnerships for Forests in Latin America, in collaboration with the Monitoring and Evaluation global team

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