

UNIVERSIDADE ESTADUAL PAULISTA "JÚLIO DE MESQUITA FILHO" Campus de Marília



Sustainable transformation: The role of INYAGA/UFRJ in the Brazil-EU connection

Kelyane Silva; Fabiana dos Santos e Souza Frickmann; Thalissa Pádua Gilaberte; Eliane Ribeiro Pereira; Ana Paula Sperling Mendes; Antônio José Barbosa de Oliveira; Rosário Mauritti; Vicente Antônio de Castro Ferreira; Rodrigo Antunes Malvar Hermida

Como citar: SILVA, Kelyane *et al.* Sustainable transformation: The role of INYAGA/UFRJ in the Brazil-EU connection. *In*: MAGALHÃES, Diego Trindade d'Ávila; THOMAZ, Laís Forti; OLIVEIRA, Marcelo Fernandes de (org.). **European Union and Brazil**: innovative and sustainable strategies for cooperation. Marília: Oficina Universitária; São Paulo: Cultura Acadêmica, 2025. p. 67-78. DOI: https://doi.org/10.36311/2025.978-65-5954-580-3.p67-78



All the contents of this work, except where otherwise noted, is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 (CC BY-NC-ND 4.0).

Todo o conteúdo deste trabalho, exceto quando houver ressalva, é publicado sob a licença Creative Commons Atribuição-NãoComercial-SemDerivações 4.0 (CC BY-NC-ND 4.0).

Todo el contenido de esta obra, excepto donde se indique lo contrario, está bajo licencia de la licencia Creative Commons Reconocimiento-No comercial-Sin derivados 4.0 (CC BY-NC-ND 4.0).

Sustainable transformation: The role of INYAGA/UFRJ in the Brazil-EU connection

Kelyane Silva

Fabiana dos Santos e Souza Frickmann Thalissa Pádua Gilaberte Eliane Ribeiro Pereira Ana Paula Sperling Mendes Antônio José Barbosa de Oliveira Rosário Mauritti Vicente Antônio de Castro Ferreira Rodrigo Antunes Malvar Hermida

Abstract: In 2025 Brazil will host the 30th UN Climate Change Conference (COP30). The transition to more efficient economic models that take into account health, social justice, and environmental responsibility has become a global priority, both in Brazil and Mercosur, as in the European Union. Entrepreneurial initiatives are being articulated to promote new technologies and sustainable solutions with social impact. In this context, the Social and Environmental Impact Business Incubator (Inyaga) at the Federal University of Rio de Janeiro (UFRJ) has emerged as an integrative platform for technological and sustainable innovation to support startups and entrepreneurs. It promotes businesses with a social and environmental impact to solve complex local problems, such as inequality in access to resources, climate change, pollution, soil improvement, environmental monitoring, and social inclusion. With a multidisciplinary and collaborative approach, Inyaga connects academics, managers, researchers, students, and entrepreneurs to opportunities that promote innovation. It has also created links with international partners like the University Institute of Lisbon (ISCTE) to foster scientific and technological cooperation between the UFRJ and ISCTE. As such, the https://doi.org/10.36311/2025.978-65-5954-580-3.p67-78

Diego Trindade D'Ávila Magalhães, Laís Forti Thomaz e Marcelo Fernandes de Oliveira (Org.)

organ reflects a willingness to build ties that strengthen innovation, sustainability and an exchange of experiences and good practices between Brazil and Portugal, representing a bridge for international academic and scientific exchange. This encourages the creation of innovative solutions that can be replicated in different contexts, integrating local Brazilian knowledge with international technological and methodological developments. Inyaga values diversity in the inclusive and holistic way required to face global challenges. As such, its collaboration with ISCTE is an example of a partnership that strengthens public policies and creates sustainable solutions for the global challenges of the 21st century through international cooperation.

Keywords: Sustainable solutions; environmental responsibility; entrepreneurs innovation; UFRJ, Brazil-EU connection

INTRODUCTION

In the contemporary scenario, where Brazil will host the 30th UN Conference on Climate Change (COP30) in Belém (PA) in November 2025, innovation and sustainability policies play a key role in addressing the most urgent global challenges. The transition to development models that integrate economic efficiency, health, social justice, and environmental responsibility has become a priority on national and international agendas. This movement is driven by issues such as climate change, epidemics, increasing social inequalities, the pressure for greater economic competitiveness in globalized markets, and the need to conserve natural resources for future generations.

In Brazil and within the scope of Mercosur and the European Union, initiatives focused on innovative entrepreneurship have emerged in response to these demands. These initiatives not only promote the creation of new technologies and solutions, but also seek to integrate sustainability and the social impact of economic development.

According to the *Global Entrepreneurship Monitor* (GEM) (2021), entrepreneurship in Brazil has shown significant trends towards innovation and social impact, reflecting a transformation in the profile of emerging businesses in the country. The report highlighted that entrepreneurial initiatives are not only addressing economic demands, but are increasingly aligned with sustainable development goals, promoting solutions that integrate technology, sustainability, and social benefits.

In this context, business incubators play a crucial role, acting as true laboratories for the development of entrepreneurial ideas that, besides being economically viable, are aligned with socio-environmental transformation goals. Incubators are more than spaces for logistical and technical support, and have traditionally been used to support startups (Bergaman; McMullen, 2022; Capatina *et al.*, 2023).

These spaces act as ecosystems that promote interaction between entrepreneurs, academic institutions, public and private organizations, as well as investors, creating an environment conducive to innovation and interdisciplinary collaboration. It is important to highlight that the primary goal of an incubator is to foster the growth of successful, financially sustainable, and competitive companies in their markets. As such, they ensure that these organizations continue to evolve even after completing their incubation period (Dornelas, 2008; Bergaman; McMullen, 2022). This initial support can be decisive for the consolidation of companies that contribute not only to economic development, but also to the construction of innovative social technological solutions aimed at global demands (Chavez, 2016).

In this panorama, the Social and Environmental Impact Business Incubator (Inyaga), linked to the Federal University of Rio de Janeiro (UFRJ), has emerged as a relevant example of how Brazilian institutions can integrate technological innovation and sustainability into their practices.

Inyaga supports startups and entrepreneurs by promoting social and environmental impact businesses. It focuses on solving complex, real, and local problems, such as inequality in resource access, climate change, pollution, soil improvement, environmental monitoring, and social inclusion. Its model is based on a multidisciplinary and collaborative approach, connecting academics, business managers, researchers, students, and entrepreneurs to opportunities that promote innovation. Furthermore, as argued by Sansone *et al.* (2020), public policies are essential to foster social inclusators, because they have the potential to support entrepreneurship in Brazil more effectively, thus contributing to the strengthening of the social and environmental innovation ecosystem.

The main objective of this chapter is to analyze the performance of Inyaga as a practical example of how innovation and sustainability policies can be implemented in a national and global context. The analysis covers its organizational structure, the support programs offered, and the impacts generated in terms of socioeconomic and environmental development. Additionally, it seeks to understand how Inyaga positions itself within the Brazilian innovation ecosystem, investigating its relationship with public policies that encourage innovation and international collaboration networks.

DEVELOPMENT

OVERVIEW OF INNOVATION AND SUSTAINABILITY POLICIES

In Brazil, the formation of incubators is relatively recent compared to the United States, beginning in the 1980s with the initiative of CNPq (National Council for Scientific and Technological Development) to create the first institutions to support innovative ventures in the country, located in Campina Grande (PB), Manaus (AM), São Carlos (SP), Porto Alegre (RS), and Florianópolis (SC). This decision led to the creation of ParqTec - São Carlos High Technology Park Foundation - in 1984, where Brazil's first incubator was established (Anprotec, 2016).

However, it was only in 2004 that the National Science, Technology, and Innovation Strategy (ENCTI) was created, with the publication of Innovation Law No. 10.973 (Brasil, 2004). This law was an important milestone for promoting innovation in the country, as it encouraged actions like the creation and development of technological parks.

Regarding socio-environmental sustainability, society in 2024 had a dual perception (except for indigenous peoples and traditional

communities): one of socio-historical origin and another of scientific origin. Since the 1960s, urban populations have become increasingly aware of the planet's growing deterioration, due to issues like pollution, environmental accidents, degradation of ecosystems and natural resources, the limitation of these resources, accelerated and chaotic urbanization, and anthropogenic disturbances. The scientific origin reflects actions to capture knowledge about nature and its elements from natural sciences (Chaves, 2015).

The European Union is recognized for its robust innovation and sustainability strategies, with programs like Horizon Europe, which integrates investments in green technology and social impact startups (European Commission, 2020). In Mercosur, although there are joint efforts such as the MERCOSUR Network of Business Incubators, challenges to regional integration have limited the advancement of transnational projects.

In this context, although it is evident that both Brazil and the EU promote policies aligned with the seventeen Sustainable Development Goals (SDGs) (UN, 2015), they employ different strategies. Whereas the EU prioritizes regulatory harmonization and long-term funding, Brazil faces structural challenges that require creative local solutions, such as those proposed by Inyaga.

The scientific and technological partnership between the School of Business and Accounting Sciences at the Federal University of Rio de Janeiro (UFRJ) and the Instituto Universitário de Lisboa (ISCTE) illustrates how the exchange of knowledge and experience between institutions from different countries can enhance local initiatives, thus strengthening the impact of business incubators and contributing to the consolidation of a global innovation environment.

Therefore, this chapter aims to reflect on the progress and challenges faced by initiatives like Inyaga, exploring its transformative potential in both the Brazilian and international contexts. The actions of Inyaga consider socio-economic aspects and Brazil's reality. Unlike European countries, Brazil faces a discrepancy in environmental and social realities, which manifests in different understandings of territorial knowledge.

For instance, it is worth highlighting the interfaces between traditional knowledge (indigenous peoples, quilombolas, traditional farmers, etc.), scientific knowledge, and urban knowledge. In this regard, partnerships through scientific and technological cooperation with developed countries have proven to be a promising tool for reflecting on Brazil's alignment with the global sustainable development goals.

SOCIO-ENVIRONMENTAL IMPACT & RESULTS

The scientific and technological cooperation agreement between UFRJ and ISCTE reflects the parties' willingness to build ties that strengthen innovation and sustainability. It also allows for the exchange of experiences and best practices between Brazil and Portugal, in which capacity it serves as a bridge for academic and scientific exchange between Mercosur and the EU.

This partnership not only strengthens Brazil's innovation and entrepreneurship capacity, it also positions the country as a relevant player in the international sustainable development arena. The exchange of knowledge and experiences facilitated by the agreement fosters the creation of innovative solutions that can be replicated in other contexts, thus expanding the reach of best practices. Moreover, by integrating local Brazilian knowledge with international technological and methodological advances, the agreement contributes to the appreciation of the country's cultural and scientific diversity, in addition to promoting a more inclusive and holistic approach to global challenges.

Another relevant aspect is the creation of opportunities for young researchers and entrepreneurs who, through this cooperation, gain access to international cooperation networks and resources that enhance their initiatives. The connection between Inyaga, the UFRJ, and ISCTE exemplifies how cooperation between institutions from different countries can result in mutual benefits, while consolidating an environment conducive to advancing science, technology, and innovation.

Inyaga operates as a business incubator focused on socioenvironmental impact. It has an organizational structure that prioritizes interdisciplinarity and the integration of knowledge. Based on its mission, the incubator organizes its support programs into three main pillars: specialized mentoring; connections with national and international innovation networks; and the promotion of sustainability. These pillars enable entrepreneurs from various sectors to develop innovative and sustainable solutions that address local and global demands.

The governance of Inyaga reflects a collaborative approach, involving not only UFRJ experts, but also external partners. This support network is essential for creating a fertile environment for innovation, and it ensures a convergence of resources and knowledge.

BRAZIL-EUROPEAN UNION CONNECTION: COOPERATION AGREEMENT WITH ISCTE AND INTERDISCIPLINARY SUBJECTS

The Scientific and Technological Cooperation Agreement, signed in 2019 between FACC/UFRJ and the School of Sociology and Public Policy at ISCTE aims to strengthen the academic and scientific exchange between both institutions. The partnership facilitates joint participation in research projects, the organization of scientific events, participation in academic committees, publication development and, most importantly, the creation and implementation of interdisciplinary subjects focused on innovation and entrepreneurship.

The objective of the Agreement is to enhance the training of leaders and equip them to tackle the complexities of contemporary challenges, promoting sustainable practices and driving technological advancements essential for national development. As part of this strategy, since 2023, four subjetes have already been implemented at UFRJ, as a direct result of the cooperation between ISCTE and UFRJ:

- Acquisition of Interpersonal Skills for Innovation and Entrepreneurship
- Innovation and Technology
- Design Thinking for Innovation and Social Impact
- Innovation Indicators

These subjects not only provide students with essential complementary training to face contemporary challenges, they have also contributed to the establishment of a Laboratory of Transversal Competencies at UFRJ, the latter being aimed at consolidating an institutional model focused on higher education innovation. It is worth noting that new interdisciplinary subjects are planned to further expand the initiative's impact.

The knowledge and experience gained by students in these subjects are further enhanced through their immersion in innovative environments like Inyaga. In this context, Inyaga serves as an experimentation platform, allowing students to engage with real-world challenges, apply classroomacquired knowledge, and develop practical experiences through projects and internships.

With an organizational structure that prioritizes interdisciplinarity and knowledge integration, Inyaga supports entrepreneurs through three key pillars: specialized mentoring; connection with national and international innovation networks; and sustainability promotion. These pillars enable the development of innovative solutions aligned with both local and global demands, strengthening the entrepreneurial ecosystem within the university.

Inyaga's governance reflects this collaborative approach, involving not only UFRJ experts but also external partners, such as ISCTE. This cooperative network is essential for creating an academic and professional environment conducive to innovation, fostering the convergence of knowledge and resources, and driving the adoption of innovative practices in higher education.

INYAGA AS A MODEL FOR SOCIO-ENVIRONMENTAL IMPACT INCUBATORS

As defined in its statutes, Inyaga is an innovation unit at the UFRJ that promotes teaching, research and extension projects. Its main objectives include identifying and supporting emerging ventures, while fostering a culture of technological and social innovation, and creating a measurable socio-environmental impact. This model stands out for integrating academics, managers, entrepreneurs and investors into a collaborative ecosystem.

Among Inyaga's programs, the following stand out:

- Pre-Incubation Program: Structuring innovative ideas and enabling their transformation into sustainable businesses.
- Mentorships and Consultations: Continuous support in business modeling, socio-environmental impact assessment, Technology Readiness Level (TRL), intellectual and industrial property, as well as strategic development, all focused on enhancing innovative solutions.
- Workshops and Training: Practical and theoretical workshops on innovation, sustainability and entrepreneurship, contributing to strengthening the capacities of incubated businesses and the external community.
- Connection with Investors: Building networks between entrepreneurs and investors interested in social and environmental impact, in addition to expanding fundraising opportunities for impactful businesses.

Through this multifaceted approach, Inyaga has positioned itself as a reference among socio-environmental impact incubators in Brazil. In this capacity, it contributes to the consolidation of an innovation ecosystem that prioritizes sustainable and inclusive solutions.

INYAGA STRUCTURE AND GOVERNANCE

Inyaga operates with a participatory governance structure composed of three main bodies: the General Management; Advisory Board; and the Technical Committee. This organization allows for decentralized and inclusive management, promoting collaborative decisions able to meet the demands of the innovation ecosystem and Brazil's environmental needs, aimed at sustainable development.

The Advisory Board, for instance, is responsible for deliberating on strategic issues, including the selection of new members and performance assessment. The Technical Committee acts as an advisory body, and analyzes the technical quality of projects applying to the incubator's programs. This robust structure ensures that Inyaga maintains a standard of excellence in its operations.

Inyaga, whose name means "Our Land" in the Brazilian Ka'apor indigenous language, stands out in preparing UFRJ's scientific environment by furthering innovation research and commercial links with enterprises and new businesses.

- Mission: Contribute to building a more just and sustainable world through the catalysis of technology-based businesses and socio-environmental values.
- Vision: Become a reference as a catalyst for businesses capable of causing socio-environmental impacts and innovative solutions by 2030.
- Values: Sustainability, ethics & respect, innovation, partnership and entrepreneurship.

CONCLUSION

The academic integration between Brazil and the European Union, exemplified by the agreement between UFRJ and ISCTE, shows

how international partnerships can drive sustainable development and innovation. These collaborations are essential for strengthening public policies and creating shared sustainable solutions for the global challenges of the 21st century.

In conclusion, the cooperation between both institutions serves as an example of how academic partnerships may contribute to sustainable development and innovation. Moreover, Inyaga's performance has been able to stimulate interactions between researchers and the industrial sector at the national level. Thus, Inyaga contributes to the development of strategic innovations necessary for Brazil's industry to gain a competitive edge, and also promotes the sustainability of Brazilian cities as replicable models that can be adopted by other countries through international cooperation.

References

ANPROTEC. *Histórico do setor de incubação de empresas no Brasil e no mundo.* Brasília, DF: ANPROTEC, 2016.

BERGAMAN, B. J.; McMullen, J. S. Helping entrepreneurs help themselves: a review and relatioanal research agenda, on entre preneurial support organizations. *Entrepreneurchip Theory and practice*, Newbury Park, v. 46, n. 3, p. 688-728, Jul. 2022.

BRASIL. Presidência da República. *Lei n. 10.973 de 02 de dezembro de 2004*. Dispõe sobre incentivos à inovação e à pesquisa científica e tecnológica no ambiente produtivo e dá outras providências. Lei de Inovação Brasileira. Brasília, DF: Planalto, 2004.

CAPATINA, A.; CRISTEA, D. S.; MICU, A.; MICU, A. E.; EMPOLI, G.; CODIGNOLA, F. Exploring causal recipes of startup acceptance into business incubators: a cross-country study. *International Journal of Entrepreneurial Behavior & Research*, Bingley, v. 29, n. 7, p. 1584-1612, Jan. 2023. DOI 10.1108/IJEBR-06-2022-0527. Disponível em: https://www.emerald.com/ insight/content/doi/10.1108/ijebr-06-2022-0527/full/pdf?title=exploringcausal-recipes-of-startup-acceptance-into-business-incubators-a-cross-countrystudy IJEBR-06-2022-0527_proof 1584..1612. Acesso em: 6 jan. 2025. CHAVES, M. P. S. R. Desenvolvimento e Sustentabilidade na Amazônia. *In:* CASSIOLATO, M. G.; PODCAMENI, M. C. SOARES, J. *Sustentabilidade socioambiental em contexto de crise*. Rio de Janeiro: E papers, 2015. p. 193-210.

CHAVEZ, V. A.; STINNETT, R.; TIERNEY, R.; WALSH, S. The importance of the technologically able social innovators and entrepreneurs: A US national laboratory perspective. *Technological Forecasting & Social Change*, Amsterdã, v. 121, p. 205-215, Oct. 2017.

DORNELAS, J. C. A. *Empreendedorismo:* transformando ideias em negócios. 3. ed. Rio de Janeiro: Elsevier, 2008. 222 p.

FAVERO, M. B.; C. CHIRNEV; P. R. da SILVA; L. H. P. TOME; R. T. CEZARIN; M. PENHA. Empreendedorismo e ensino superior: análise do perfil empreendedor de alunos de um centro universitário. *Gestão, Inovação e Empreendedorismo,* Ribeirão Preto, v. 7, n. 1, p. 118-130, 2024. Disponivel em: https://doi.org/10.5281/zenodo.13852022. Acesso em: 6 jan. 2024.

GLOBAL ENTREPRENEURSHIP MONITOR (GEM). *Empreendedorismo no Brasil:* Relatório Nacional 2021. Londres: GEM, 2021. Disponível em: https://www.gemconsortium.org. Acesso em: 14 jan. 2025.

ONU. *Agenda 2030 para o Desenvolvimento Sustentável.* ODS. Objetivos para o Desenvolvimento Sustentável da Agenda 2030 das Organizações Unidas (ONU). East River, Nova York: ONU, 2015.

MACHADO H. O. *et. al.* Mapeamento de atores do ecossistema de inovação da cidade de Timon – Maranhão e suas potencialidades. *Revista de Gestão e Secretariado*, Lisboa, v. 15, n. 1, p. 995–1011, jan./mar. 2024.

SANTA ANA, M. F. O distanciamento que existe entre as pesquisas desenvolvidas nas universidades e a inovação que chega as indústrias brasileiras. *Revista Ibero-Americana de Humanidades, Ciências e Educação,* São Paulo, v. 7, n. 7, p. 324-334, jul. 2021. DOI: http://doi.org/10.51891/rease.v7i7.1691. Disponivel em: https://periodicorease.pro.br/rease/article/download/1691/680. Acesso em: 15 nov. 2024.

SANSONE, G.; ANDREOTTI, P.; COLOMBELLI, A.; LANDONI, P. Are social incubators different from other incubators? Evidence from Italy. *Technological Forecasting & Social Change*, Amsterdã, v. 1 Disponivel em: 61, n. 158, p. 1-13, Jun. 2020. Acesso em: 13 jan. 2025.