

UNLOCKING THE CIRCULAR BIOECONOMY:

A Regulatory Roadmap for Insect
Farming in Colombia

INDEX

Index	2
List of acronyms.....	3
List of figures.....	4
List of tables	5
1. Executive summary	6
2. Why insect farming?.....	7
3. The Regulatory Landscape: Barriers to Investment.....	11
4. The Journey to Compliance	21
5. Advocacy in Action: P4G Partnership Interventions	25
6. Precise Recommendations & Roadmap for Change	27
References	30

LIST OF ACRONYMS

BSF: Black Soldier Fly.

ENEC: National Circular Economy Strategy.

ESG: Environmental, Social, and Governance.

FAO: Food and Agriculture Organization.

GHG: Greenhouse gas.

ICA: Instituto Colombiano Agropecuario.

MinAgricultura: Ministerio de Agricultura y Desarrollo Rural.

MinVivienda: Ministerio de Vivienda, Ciudad y Territorio.

OECD: Organisation for Economic Co-operation and Development.

P4G: Partnering for Green Growth and the Global Goals 2030.

LIST OF FIGURES

Figure 1. Animal feed ingredient consumption v. import in Colombia	8
Figure 2. Protein dependency tendency in Colombia	9
Figure 3. Colombian Insect Farming Regulatory Journey	24

LIST OF TABLES

Table 1. Regulatory traffic light: Current state of the insect farming sector in Colombia	18
Table 2. International regulatory benchmark.....	20
Table 3. Partnership recommendations for regulatory change	27



1. EXECUTIVE SUMMARY

Colombia is currently facing a crisis in its agri-food system: a structural dependency on imported proteins that leaves the country vulnerable to global shocks, and an obsolete waste management model that buries millions of tons of organic value in saturated landfills.

While the demand for animal feed is projected to grow by 18% by 2034, the country currently imports nearly 80% of its protein raw materials, exporting currency and importing inflation. Simultaneously, waste is responsible for approximately 6% of national GHG emissions, most of them from the organic segment.

The Solution: Insect farming is not just an agricultural alternative; it is the "missing link" of the circular economy. This technology acts as a biological catalyst capable of transforming environmental liabilities (organic waste) into high-value assets for agriculture.

Despite the immense market potential—globally projected at USD 1.1 billion by 2032—the industry in Colombia is affected by several regulatory hurdles and legal voids. This forces biotechnology startups to navigate through uncertainty, imposing costs and timelines that are incompatible with innovation.

The Purpose of this Knowledge Product, developed under the P4G partnership, is more than a diagnosis; it is a roadmap for action. It exposes critical obstacles, details the current regulatory journey, and proposes pragmatic solutions—such as a Regulatory Sandbox and the standardization of technical manuals—to transform legal uncertainty into a green investment opportunity.

Unlocking this sector means more than developing a new economic activity; it means securing Colombia's food sovereignty and meeting its international climate goals.

2. WHY INSECT FARMING?

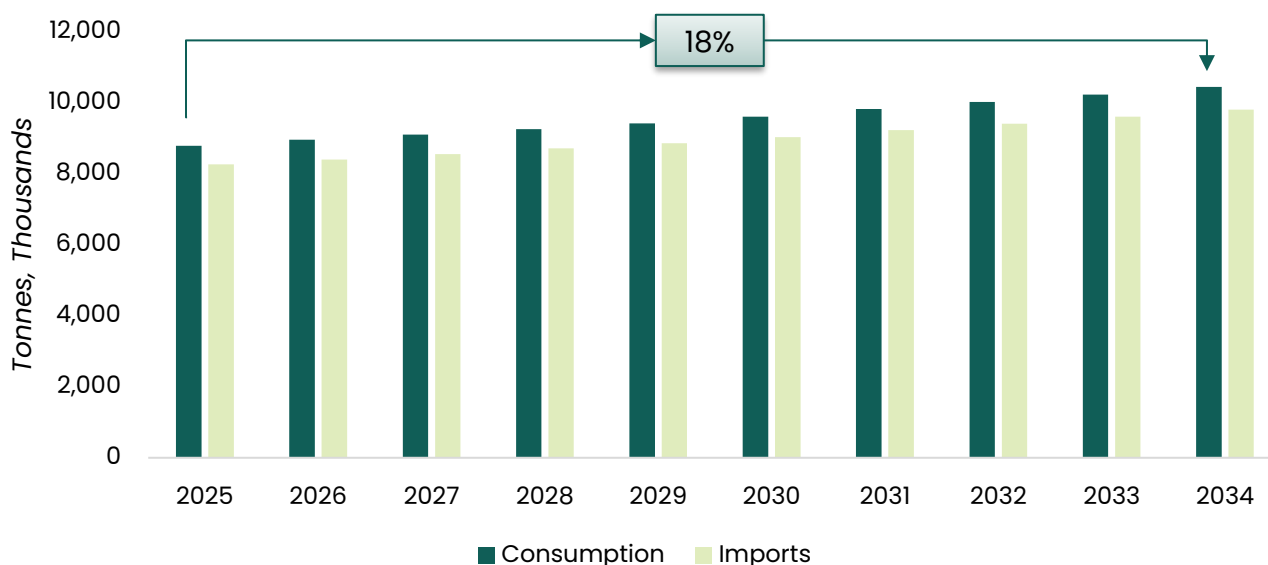
The global food system is currently navigating a convergence of systemic pressures that threaten long-term food security and environmental stability, while the world population approaches an estimated 8.8 billion in 10 years and 9.6 billion by 2050 (United Nations, 2024). According to the FAO-OECD, global agricultural production is expected to increase by 14% over the next decade (OECD/FAO, 2025). While this growth is essential to meet the needs of a rising population, it carries a profound environmental cost, mainly due to animal global production, projected to rise by 13% by 2034 (OECD/FAO, 2025).

This macro-trend presents a dual challenge: the necessity of increasing productivity to eliminate undernourishment, with the limitation that currently, 25% of total world crop consumption is dedicated exclusively to animal nutrition, while simultaneously decarbonizing livestock production, projected to increase 6% of its GHG emissions, around 70% of the global increase in direct agricultural GHG emissions (OECD/FAO, 2025).

In the specific case of Colombia, this protein challenge manifests as a critical structural vulnerability in the animal protein value chain. By 2025, a staggering 78.5% of the national consumption of protein meal for animal feed was imported (OECD/FAO, 2025), a figure that underscores a deep-seated dependency on international markets and volatile supply chains. This reliance is not projected to diminish; rather, it is estimated to intensify, reaching 79.7% by 2034 (OECD/FAO, 2025).

This trend is particularly alarming when considering that Colombia's internal consumption of protein meal for animal feed is forecasted to increase by 18% over the same period, outpacing the global average increase in feed demand (OECD/FAO, 2025). Without a radical shift in how domestic animal protein is produced, the country faces an escalating risk to its food sovereignty, as the costs of poultry, pork, and aquaculture remain tethered to foreign currency fluctuations and global commodity shocks.

Figure 1. Animal feed ingredient consumption v. import in Colombia.



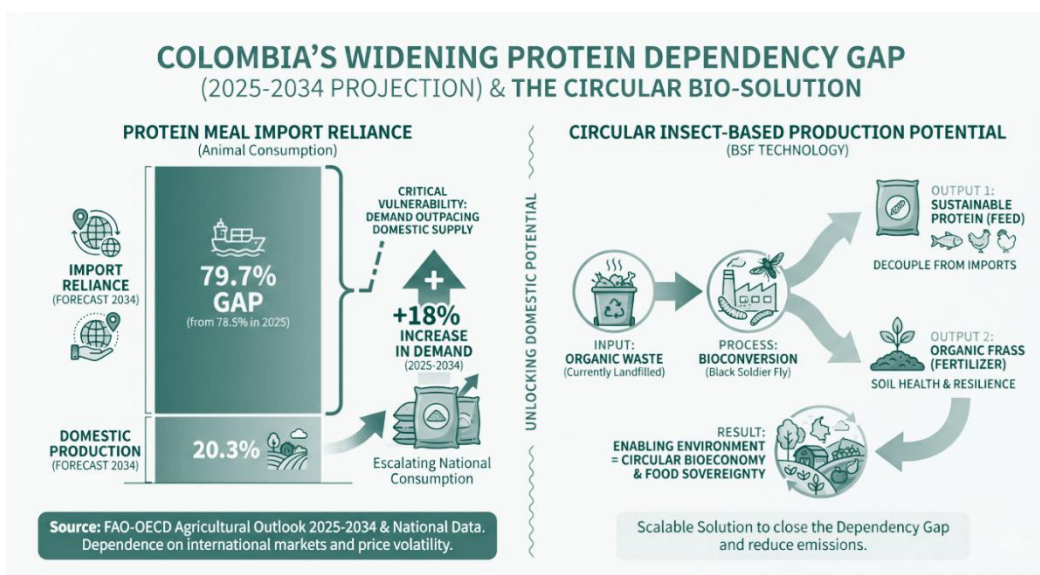
Source: OECD/FAO (2025), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://data-explorer.oecd.org/s/lhc>.

The environmental and economic imperative for a domestic solution is further highlighted by the systemic failure of current waste management models. While Colombia struggles with the rising costs of imported feed, it simultaneously generates millions of tons of organic waste annually that are treated as a liability rather than a resource. Diverting these materials to landfills not only exhausts municipal budgets but also accelerates climate change through methane emissions, representing around 6% of the total national GHG emissions (World Bank – MinVivienda, 2021).

Insect farming, and in particular the Black Soldier Fly –BSF– (*Hermetia illucens*), offers the technological infrastructure needed to bridge this gap. It acts as a biological catalyst that transforms organic "waste" into high-quality protein and "Frass" (organic fertilizer), effectively decoupling agricultural growth from both import dependency and environmental degradation. This technology can upcycle organic residues into high-value agricultural inputs with unprecedented efficiency.

By leveraging the natural life cycle of insects, bioconversion facilities can transform low-value waste into high-quality protein for the aquaculture and poultry industries, alongside "Frass," a potent organic fertilizer that supports regenerative soil health. Unlike traditional livestock, which requires vast tracts of arable land and intensive water use, insect farming operates on a fraction of the footprint (100x less land use), offering a scalable solution that decouples economic growth from environmental degradation.

Figure 2. Protein dependency tendency in Colombia



Source: Own elaboration

The economic imperative for scaling insect farming in Colombia is validated by aggressive global market dynamics and a stark domestic opportunity for import substitution. Globally, the insect protein market is on an exponential growth trajectory, projected to reach a valuation of USD 1.1 billion by 2032 (Global Market Insights, 2023), backed by more than USD 2 billion in accumulated startup investment (Rethink Priorities, 2024) and stakeholders that are increasingly focused on ESG-aligned resilience.

While the industry is currently led by established producers in Europe, North America, and Asia, Latin America is entering a decisive expansion phase; the regional ecosystem—anchored by emerging players in Brazil, Chile, Argentina, and Costa Rica—is projected to surge from USD 164.5 million in 2024 to approximately USD 498.2 million by 2030, at a CAGR of 20.3% (Grand View Horizon, 2024).

In Colombia, this potential is anchored by a massive domestic market for animal nutrition, which reached USD 2.32 billion in 2025 (Research and Markets, 2024). Crucially, the country imported over USD 900 million in soy meal in 2024 (United Nations), representing a strategic window for local insect-based bioconversion to displace foreign dependencies and capture a significant market share.

Through the adoption of bioconversion technology, Colombia has the opportunity to satisfy its projected 18% increase in protein demand through a circular bioeconomy model. This approach aligns with the OECD's recommendation to adopt emission-reduction technologies while increasing productivity to address the growing food demand. However, the economic potential of this sector remains untapped due to a regulatory gap created by institutional barriers. Stakeholders are hesitant to commit to an industry that lacks a clear legal identity, as the current regulatory framework has not yet acknowledged insect farming as a formal agricultural or industrial activity. Consequently, achieving "investment readiness"—a core pillar of the P4G partnership initiative—requires more than just technological or product advances; it requires an enabling environment that provides legal certainty and predictable operational standards.

To unlock this multi-million-dollar industry, the governmental narrative must surpass policymakers and address the systemic constraints that prevent scale. Unclear targets and fragmented policy initiatives often discourage stakeholder commitment. Therefore, this analysis frames the regulatory picture in Colombia not as a bureaucratic exercise, but as a strategic unlocking mechanism. By creating a robust, supportive ecosystem, Colombia can transition from being a passive importer of protein to a regional leader in circular biotechnology, simultaneously addressing the triple challenge of food security, waste management, and climate resilience.

3. THE REGULATORY LANDSCAPE: BARRIERS TO INVESTMENT

CURRENT STATE OF THE SECTOR IN COLOMBIA

The development of insect farming in Colombia is currently governed by a fragmented regulatory ecosystem. While high-level policy instruments provide a mandate for circularity and bioeconomy, the technical regulations managed by operational agencies create a "bottleneck" that prevents industrial scaling. This section analyzes the hierarchy of norms, from strategic planning to specific technical resolutions, and its impact on the sector's potential.

Level 1: Strategic planning and policy instruments

At the highest level of the Colombian legal hierarchy, several instruments establish the policy architecture for insect-based bioconversion. These documents represent the government's commitment to sustainability but lack the granular pathways for the insect segment.

The National Circular Economy Strategy (ENEC): This strategy identifies "biomass and organic waste" as one of its six priority flows, aiming to increase the national waste recovery rate, which currently remains stagnant at a mere 4%. While insect farming represents the most efficient biological catalyst to achieve the ENEC's goals, the sector was notably excluded as a prioritized line of action during the strategy's implementation. Consequently, the ENEC lacks clear directives for concrete actions regarding biomass valorization beyond traditional, lower-value techniques such as composting, effectively sidelining emerging technologies with significantly higher added value. Furthermore, by delegating the execution of these goals primarily to national and regional competitiveness committees without providing a specific technical roadmap, the strategy has seen limited progress, particularly in establishing industrial-scale pathways for organic biomass recovery.

CONPES 4051 – Reindustrialization Policy: This policy promotes "Bioeconomy and new bioproducts" as strategic pillars for national economic growth, explicitly highlighting the necessity of "regulatory sandboxes" to evaluate and validate innovative business models. Favorably, this instrument includes a comprehensive set of concrete actions, performance indicators, and designated responsible entities, which theoretically facilitates the monitoring and fulfillment of its objectives. However, the practical implementation has faced significant headwinds; due to shifting political contexts, the lack of continuity in key leadership roles at both national and regional levels has hindered the consistent promotion and execution of these initiatives.

- CONPES 3874 – National Policy for Integrated Solid Waste Management: Recognizing that 61% of national waste is organic, this policy calls for value-added technologies beyond traditional composting. However, the lack of coordination between municipal authorities and the insect industry prevents a steady flow of "certified substrates".
- Colombia's NDC (Nationally Determined Contributions) 2030: Under the Paris Agreement, Colombia committed to a 51% reduction in GHG emissions. Insect farming directly contributes to this target by avoiding methane emissions from landfills—bioconversion can prevent up to five tons of CO₂e per ton of insect protein produced.
- Decree 670 of 2025 – National Cero Waste Program: This recent regulatory milestone establishes the strategic roadmap for national waste management, shifting the focus from final disposal to a model centered on resource recovery and circularity. As a novel program currently in its early implementation phase, it introduces critical advancements for insect farming. Most notably, the decree mandates the fostering of commercialization and use of sub-products derived from organic waste treatment, tasking the MinAmbiente to design market stimulants and instruments for these products.

This directive provides a direct governmental mandate to promote and facilitate insect-based products. Furthermore, the program promotes territorial pacts, which incentivize collaborative solutions between private actors and local governments. For the insect farming business, these pacts represent a high-visibility platform to formalize the supply chain of organic substrates at a municipal level, ensuring that the bioconversion of organic matter is recognized as a service of public interest and a pillar of local bioeconomies.

Level 2: Technical and operational regulation

The primary challenge of the insect farming industry is its dual nature. As a circular solution, the activity falls into two separate regulatory domains: Environment and Agriculture.

- a) **Environmental section:** In the Colombian context, the utilization of insects for organic waste valorization is governed by a complex environmental duality that creates significant operational friction. This landscape is divided into two critical regulatory pillars:

- Wildlife Management and Species Exploitation: Law 611 of 2000 and Decree 1076 of 2015 regulate the management of wildlife and aquatic resources. Under this legislation, any breeding of native species is classified as “*Zoocría*”. This forces the BSF, a biological catalyst, into the same legal category as any other wildlife species. The consequence is a “one-size-fits-all” requirement for a Wildlife Management Plan, which is misaligned with the potential of its biotechnology and the security already proven in different regions.

Specifically, the regulation subjects “*Zoocría*” projects to rigorous environmental impact assessments and licensing processes intended for protecting the country’s biodiversity against animal trafficking and environmental risks with respect to irresponsible breeding.

The current framework fails to recognize significant advancements in Nature-Based Solutions (NbS) that utilize these very biological resources to mitigate critical environmental challenges. Despite legislative efforts in passing laws that create a flexible procedure for insect farming permits (such as Bill No. 530 of 2021), the present regulation imposes a disproportionate administrative burden that severely restricts the expansion of this environmentally positive activity. Consequently, it erroneously equates low-impact, regenerative biotechnologies with high-impact projects that generate significant negative environmental externalities.

- Private Valorization and Sub-product Recovery Services: Under Decree 1077 of 2015, the waste management legislation is primarily designed for the public cleaning service. MinVivienda's policy and regulations focus on the public service waste generation and management, leaving aside the importance of private-to-private industrial recovery of organic sub-products as the key circular solution. Current normative focuses on municipal collection and landfill disposal. There are no clear legal instruments that facilitate the direct, private-to-private transfer of large-scale organic streams for industrial bioconversion, leaving insect-based waste management companies in a legal vacuum when trying to formalize their raw material supply chains.

The absence of formal recognition for private solutions as critical actors within the waste-management value chain prevents insect-based bioconversion from accessing public-sector incentives and state-supported funding. While Decree 0670 of 2025 explicitly calls for market stimulants and bioeconomy projects to divert organic matter from landfills, the current regulatory framework fails to establish binding mechanisms or practical mandates that compel waste generators to seek innovative, circular alternatives.

Finally, there is a fragmentation in the responsibilities between MinAmbiente and MinVivienda regarding the leadership of sustainable solutions to organic waste generation, which results in a lack of coordination and comprehensive planning.

b) **Agricultural section:** The Colombian Agricultural Institute (ICA) and the Ministry of Agriculture (MinAgricultura) govern the inputs and outputs of animal production. The current difficulty lies in the absence of clear rules and procedures for the formal market entry of insect-based products. Specifically, three main regulatory gaps have been identified:

1. **Product and Producer Registration (Resolution 61252 of 2020):** This resolution governs animal feed production. However, it lacks specific mentions regarding insect-based protein, among other novel ingredients, leaving it under the general concept of animal feed. Thus, there is uncertainty in clients with respect to the possibility of using insects as feed to their animals, which also translates into uncertainty for investors and funders regarding the potential market of the products.
2. **Substrate Restrictions:** A critical barrier is the lack of criteria regarding allowed substrates for insect feeding. Current biosecurity rules are vague regarding the use of post-consumer food waste or pre-consumer industrial by-products as insect feed. Following the rigid European or US models without local adaptation prevents the sector from achieving true circularity, as it may restrict the "input" to high-cost, clean agricultural materials instead of utilizing the massive volumes of organic waste currently destined for landfills. It is key to promote clear regulation that assures both product biosecurity and real circularity.
3. **Entomological Production Manual:** Unlike the poultry or bovine industries, and due to its novelty, Colombia lacks Good Productive Practices specifically designed for insect production. The absence of institutional standardization forces each project to independently negotiate biosecurity protocols with clients, regulatory authorities, and other stakeholders, resulting in fragmented requirements and significant legal uncertainty for investors.

From an agro-industrial perspective, insects must be formally recognized as a distinct category of livestock. This demands the development of specialized technical manuals and streamlined protocols by the national technical authority, equivalent to those existing for traditional species. Establishing such a framework is essential to catalyze the entry of new market players, foster consumer trust, and mitigate systemic operational risks for producers, ultimately leveling the playing field for this emerging sector.

Level 3: Practical Implementation Hurdles

While the legislation provides a formal structure, the practical implementation reveals deep-seated inefficiencies and market distortions that hinder the sector's enabling environment. This section outlines the "real-world" obstacles encountered by pioneers in the Colombian insect farming industry.

- **The "First Mover" Penalty and Public-Sector Inexperience:** The lack of precedents in insect-related environmental licensing has created a prohibitive "learning tax" for innovators. In practice, there is a near-total absence of granted wildlife management (Zoocría) permits for industrial insects in Colombia. Environmental authorities often lack the technical expertise to evaluate these projects, leading to a reliance on expensive external consultancies for both the regulator and the applicant. Paradoxically, it is currently simpler and faster to permit high-impact environmental projects (such as traditional extractive industries) because the expertise and procedural "tracks" already exist. For insect farming, the process exceeds 12 months and incurs administrative costs of USD 15,000 or more, regardless of project scale. This creates a regressive constraint where circular solutions face the same financial burden as large-scale environmental liabilities.
- **Discretionary Oversight:** The absence of specific guidelines from ICA subjects projects to the "discretionary criteria" of its officials, who often default to a conservative posture, rejecting innovative applications or demanding variable documentation. Producers have experienced shifting requirements between different applications, leading to multiple failed attempts and high sunk costs.

- The "Status Quo" Bias in Waste Management: The transition from a linear to a circular model is delayed by a lack of mandates for waste generators and a lack of transparency in supply chains. Large-scale waste generators suffer from a lack of internal governance regarding their organic by-products, often ignoring the volume, quality, and operational flow of their discards. Without this data, aligning expectations for industrial bioconversion is nearly impossible.

In the absence of binding obligations, greater landfill taxes or recycling incentives, waste generators and even public service providers tend to maintain the status quo (landfilling) whenever market or logistical fluctuations occur. The survival of valorization businesses currently relies on "corporate voluntariness," which is insufficient to drive systemic change.

- Unfair Competition: Sustainable waste management faces a disadvantage due to a lack of environmental enforcement. There is a significant absence of environmental and sanitary surveillance regarding the illegal use of organic waste for direct animal feeding (a practice prohibited by Colombian law). This illegal demand creates a parallel market that artificially inflates the price of organic sub-products, eroding the margins of legal bioconversion solutions.
- Regulatory Asymmetries: Currently, the fiscal and regulatory architecture inadvertently subsidizes non-sustainable raw materials for animal nutrition through preferential tax treatments, such as VAT exemptions or specialized deductions. Sustainable alternatives, specifically insect protein, are excluded from these incentives, creating an artificial price disadvantage that restrains market entry.

This asymmetry is also operational: while national insect-based producers must navigate different legal procedures (such as a wildlife management permit), imported ingredients—including insect-based products from other jurisdictions—are exempt from these specific domestic burdens. This creates an altered market where the regulatory system effectively penalizes local circular innovation while lowering the barriers for conventional, and often higher-impact, imported alternatives.

Table 1. Regulatory traffic light: Current state of the insect farming sector in Colombia

Dimension	Critical Bottleneck	Business & Investability Impact
Environmental Licensing	Mandatory classification as Wildlife Management under Law 611/2000	Timelines of 18–36 months and costs >USD 15k. Hold back scaling and excludes SMEs.
Regulatory Competitiveness	Benefits to traditional and imported inputs (i.e., VAT exemptions).	Significant disadvantage against non-sustainable or imported products.
Private waste management solution	High corporate willingness but no regulatory incentives for long-term commitment.	Supply chains initially rely on "voluntariness", creating high operational risk.
Institutional Support	Strong local engagement but a lack of national stability and continuity.	Lack of continuity in policy implementation and framework development.
Product Regulations	No specific guidelines for insect-based products.	Uncertainty among clients, investors, and other stakeholders.
Public Policy Alignment	Robust high-level support: ENEC, CONPES 4051, and "Basura Cero" Program.	A strong political mandate provides the legal basis to implement solutions.

INTERNATIONAL COMPARATIVE ANALYSIS

To bridge the gap between Colombian regulatory inertia and global industrial trends, it is essential to analyze how leading jurisdictions have decoupled economic growth from environmental risk. While the European Union and the United States have established the "gold standard" for safety, Argentina offers the most recent and relevant roadmap for Latin America.

The European Union: The EU operates under a "Safety-First" principle. Following the "novel food" and "feed" regulations, the European Food Safety Authority has authorized several insect species (including BSF and Tenebrio) for aquaculture, poultry, and porcine feed.

- ✓ Strengths: It provides the highest level of consumer trust and clear technical guidelines for use and export to premium markets.
- ✗ Limitations: Its allowed list of substrates is extremely restrictive, prohibiting the use of waste. This limits the environmental upside of biotechnology and its solution to the urban waste management crisis.

The United States: In the U.S., the Association of American Feed Control Officials defines the standards for insect-based ingredients on a species-by-species and animal-by-animal basis (e.g., BSF larvae for dried poultry feed or dog food).

- ✓ Strengths: Highly pragmatic and market-oriented, facilitating large-scale investments in pet food and animal nutrition.
- ✗ Limitations: The requirement for "Feed-Grade" inputs prevents the industry from utilizing organic streams that are currently destined for landfills.

Argentina: Positioned as the regional leader in 2024 by adding a specific chapter regarding insect-based products for animal nutrition to its Animal Product Inspection Regulation.

- ✓ Strengths: It explicitly defines "insect-based establishments" and provides a clear list of authorized species. By integrating these facilities into HACCP, GMP, and SSOP standards, Argentina treats insects as a formal industrial sector rather than a wildlife project.
- ✗ Limitations: While the regulation is highly advanced in the "output" (the meal/oil), it still maintains a conservative approach to the "input" (the waste used as substrate).

Table 2. International regulatory benchmark

Jurisdiction	Main Advantage	Limitation
European Union	Highest global quality standards	Extremely rigid substrate rules; prohibits urban organic waste.
United States	Facilitates rapid commercial scaling in pet food and poultry.	High barrier for entry regarding "feed-grade" input requirements.
Argentina	Clear categories for species, products, and biosecurity guidelines.	Still focused on agro-industrial inputs rather than urban circularity.
Colombia	High political will and availability of waste.	Elevated costs & regulatory burden, no specific legislation.

4. THE JOURNEY TO COMPLIANCE

The following sequential roadmap outlines the administrative and technical requirements a startup based on insect biotechnology must fulfill to achieve full legal operation in Colombia. This process is categorized into three critical phases: foundation, sanitary authorization, and environmental compliance.

Phase I: Organizational and Operational Foundations

1. Incorporation via the Chamber of Commerce. The creation of a legal entity, typically a Simplified Joint Stock Company (SAS), is the first essential step. This provides limited liability for founders, establishes a formal credit history for the company, and serves as a non-negotiable requirement for institutional investors and corporate clients/providers.

Required documentation:

- ✓ Notarized company bylaws signed by its partners.
- ✓ Identification of the Legal Representative.
- ✓ RUES form.

2. Tax Preparation. Obtaining the National Tax Registry from DIAN enables formal accounting and electronic invoicing. This is critical for establishing commercial relationships with corporate clients/providers who require tax-deductible expenses and formal supplier verification.

Required documentation:

- ✓ Incorporation documentation.
- ✓ Identification of the Legal Representative.
- ✓ Preliminary RUT form issued by the DIAN at the incorporation.

3. Labor and Social Security Compliance. The business must enroll in the national social security system, including pension and severance funds, health insurance (EPS), and labor risks insurance companies (ARL). Correct risk classification at the ARL level is vital due to the industrial nature of biomass handling and facility maintenance.

Required documentation:

- ✓ Certificate of Existence and Legal Representation issued by the Chamber of Commerce.
 - ✓ Identification of the Legal Representative.
 - ✓ Entities registration forms.
4. Land Use and Zoning Verification. Before any significant infrastructure investment, the company must obtain a Land Use Concept from the local planning authority. This document confirms that the facility is located in an area specifically zoned for industrial or agro-industrial activities, preventing future legal closures. For this purpose, the business should verify this information before any land acquisition/leasing.

Required documentation:

- ✓ Ownership land certificate
- ✓ Formal request for the Land Use Concept, signed by the owner, directed to the Municipal Planning Office.

Phase II: Environmental Licensing

5. Environmental Licensing for Experimental Wildlife Management. Producers must apply to the corresponding Regional Autonomous Corporation (CAR) for a temporary license for promotional purposes (zoocría de fomento), which includes an initial hunting permit to obtain parental stock. Upon the successful completion of the experimental phase, the license must be modified for commercial exploitation. This stage represents the primary regulatory obstacle, as it can exceed 12 months in duration and involve administrative and consultancy costs of USD 15,000 or more.

Required documentation:

- ✓ Environmental Impact Assessment.
- ✓ Technical descriptive report of the species.
- ✓ Administrative filings, including technical information about the productive facility and activities.
- ✓ Specific certification from governmental entities, as specified in art. 2.2.2.3.6.2. from Decree 1075 of 2015.

Phase III: Technical and Sanitary Authorizations

6. Animal Feed Manufacturer Registry (ICA). Under Resolution 61252, companies must register as manufacturers of animal feed. This process, conducted through an electronic platform, requires declarations about the implementation of Good Manufacturing Practices (GMP) and the approval of a technical advisor (zootechnical professional). The projected administrative cost for 2026 is COP 2,491,000.

Required documentation:

- ✓ Certificate of Existence and Legal Representation issued by the Chamber of Commerce.
 - ✓ Filing an electronic form at [Simplifica](#) platform regarding production facilities, products, and suppliers, if applicable.
7. Specific Product Registry (ICA). A specific registry is required when the insect-based product (e.g., meal or oil) is marketed as a final feed or direct additive. This registry may be omitted if the product is sold exclusively as a raw material to other registered manufacturers for further transformation. The projected cost for 2026 is COP 1,866,550.

Required documentation:

- ✓ Technical data of the product.
- ✓ Filing an electronic form at [Simplifica](#) platform regarding use indications, formulation, and product packaging.

Figure 3. Colombian Insect Farming Regulatory Journey



Source: Own elaboration

Additional Strategic Milestones

8. Strategic Growth and Institutional Integration. Once core compliance is achieved, startups should pursue the following optional steps to enhance their market position and sustainability profile:
 1. Export Registry: Enrollment with customs agencies and the VUCE to enable international trade. This also implies ICA authorization of product export.
 2. BIC Status: Formally adopting the Benefit and Collective Interest (BIC) status to align the corporate charter with social and environmental goals. Furthermore, B-Corp certifications and other environmental seals might be a key tool for ESG implementation and an attractive feature for the business, depending on its stakeholders.
 3. Green Business Program: Joining the CAR's Green Business initiatives to increase governmental support and access to specialized sustainable markets using the National Green Seal.
 4. Circular Economy Governance: Active participation in regional circular economy tables and "Basura Cero" programs to ensure long-term alignment with national waste management policies and potential participation in innovative projects.

5. ADVOCACY IN ACTION: P4G PARTNERSHIP INTERVENTIONS

Thanks to the P4G Partnerships program, Residua Biocircular, a BSF producer, in alliance with Tecnova, has functioned as a critical catalyst to bridge the gap between Colombia's sustainability goals and the operational realities of the insect industry. The following strategic interventions were prioritized to mitigate the constraints identified in the regulatory landscape, moving from broad political advocacy to specific technical standardization.

1. **Regulatory Sandbox Promotion for Insect Farming:** The central intervention of the partnership is the promotion of a Regulatory Sandbox specifically designed for insect rearing and processing. This controlled experimentation mechanism aims to create a safe space where startups can operate under flexible rules while authorities capture real-time scientific data. The Sandbox is designed to:
 - ⊙ Assess the use of diverse organic substrates in real-world conditions to generate safety data.
 - ⊙ Standardize industrial biosecurity protocols that create trust in all participants and stakeholders of the insect-based products' value chain.
 - ⊙ Provide the ICA and Ministries with technical evidence to update the regulation.
 - ⊙ Grant "Temporary Operation Certificates" to innovative companies, allowing them to commercialize products while the final regulation is being drafted.
2. **Regional Leadership in Circular Economy Platforms:** At the regional level, the partnership actively participated in the Circular Economy Table of the Regional Commission for Competitiveness and Innovation (CRCI) through "Santander Competitivo." The bioconversion solution was presented as a fundamental pillar for regional competitiveness, fostering technical debates and consolidating relationships with local stakeholders. Despite progress being temporarily affected by changes in local municipal administration, this engagement solidified the insect business's presence in regional development plans.

3. **Legislative Advocacy at the National Congress:** In a landmark event organized by the CDMB, a strategic showcase was held at the Congress of the Republic of Colombia. The objective was to present the regulatory hurdles to national legislators and highlight the potential of insects as a systemic solution to the country's environmental and food security crises. This intervention successfully elevated the conversation from a purely administrative level to a national legislative interest.
4. **Technical Committee for Environmental Licensing Standardization:** A high-impact technical committee was established in collaboration with the CDMB (Regional Autonomous Corporation for the Defense of the Bucaramanga Plateau) to define a clear reference structure for environmental license documentation. This intervention directly attacks the primary bottleneck identified. By standardizing the Terms of Reference for documentation, the partnership aims to:
 - ✓ Eliminate administrative discretion during the evaluation process.
 - ✓ Develop a regulatory precedent for new businesses with insect-based technologies.
 - ✓ Accelerate approval timelines by providing a technical manual that guides both the applicant and the environmental evaluator.
5. **Strategic Alignment with the National Reindustrialization Policy:** The partnership engaged with entities responsible for goals 5.20 and 5.27 of the National Reindustrialization Policy. However, these efforts were significantly impacted by the high turnover and governmental instability within the roles in charge of policy implementation. Consequently, other mechanisms were pursued, such as the regulatory sandbox application with the National Planning Department.

6. PRECISE RECOMMENDATIONS & ROADMAP FOR CHANGE

The following roadmap serves as a strategic blueprint to transform the identified regulatory barriers into an enabling environment for circular bioeconomy investments in Colombia.

Table 3. Partnership recommendations for regulatory change

Detected Problem	Relevant Regulatory Instrument	Proposed Regulatory Change	Responsible Entities	Priority
Excessive administrative burden	Law 611 of 2000 & Decree 1076 of 2015	Amend art 2.2.2.3.6.2. of Decree 1076 of 2015 to eliminate the requirement of submitting an Environmental Impact Assessment (EIA) for obtaining environmental licenses for promotional wildlife management projects involving specific industrial insect species.	MinAmbiente	High
Absence of Insect-based product regulation	ICA Resolution 61252 (Feed) & Res. 150 (Bio-inputs).	Develop a specific Resolution for insect industrial production, regarding allowed species, substrate, use of by-products, and GMP.	ICA	High

Waste supply chain transparency and incentives	Decree 1077 of 2015.	Implement a consolidated system for tracking organic waste generation and recovery to help companies and solvers to identify market opportunities. Furthermore, leverage this information to promote territorial pacts that include measurable commitments from the private sector for sustainable waste management.	MinVivienda	Medium
Lack of technical guidelines	N.A.	Support the industry in drafting a self-regulatory code of conduct to standardize biosecurity, and leverage this framework for the development of formal national manuals.	ICA / MinAgricultura / Private Sector Associations	Medium
Lack of practical data for rulemaking	N.A.	Launch the Regulatory Sandbox to collect data on current players regarding environmental safety and industrial biosecurity in a controlled environment.	MinAmbiente / MinAgricultura / DNP	High

Final Thoughts: From Inertia to Leadership

The transition toward a circular economy is no longer a matter of environmental choice, but of economic survival and sovereign security. As this document has demonstrated, insect farming represents one of the most efficient "nature-positive" technologies available to solve the structural crisis of organic waste management while simultaneously de-risking the national supply of high-quality protein and bio-fertilizers.

However, the "Regulatory Traffic Light" remains the ultimate gatekeeper. Colombia currently finds itself at a crossroads: it possesses the political mandate to boost organic waste circular management, yet it remains bound to a legal system that ignores bioeconomy innovators. The disconnect between national policy priorities and the operative level creates a "valley of death" for startups and an impediment for the institutional capital that P4G seeks to mobilize.

The path forward requires a shift in the regulatory paradigm:

- **Embracing the Sandbox:** We must move away from rigid, preventative legislation toward an experimental, data-driven approach. The Regulatory Sandbox is not an "exemption" from the law, but a laboratory for the law itself.
- **Empowering the Private Sector:** As highlighted in recommendations, transparency and self-regulation are powerful tools. When private players set high (i.e., sustainable waste solutions, biosecurity standards), it facilitates the rule-making function for entities such as MinAgricultura and MinAmbiente.
- **Public-Sector Stability:** Insect farming success depends equally on the creation of new rules and the continuity of processes. Real progress requires governmental reliability that allows for long-term planning with clear accountability. This consistency is what will provide the security needed to navigate the entire regulatory journey.

In conclusion, if the recommendations outlined are implemented, Colombia will not only meet its international climate commitments but will also secure its position as a regional leader in the insect protein market. This partnership has provided the spark; it is now up to the institutional engine to construct the tools for this industry to scale.

REFERENCES

Global Market Insights. (2023). *Animal Feed Insect Protein Market*.

Grand View Horizon. (2024). *Latin America Edible Insects Market Size & Outlook*.

OECD/FAO. (2025). OECD-FAO Agricultural Outlook 2025-2034. (OECD Publishing). Paris/FAO, Rome. doi:<https://doi.org/10.1787/601276cd-en>

Research and Markets. (2024). *Colombia Animal Feed Market*.

Rethink Priorities. (2024, December 5). *Rethink Priorities*. Retrieved from Insect farming: investment trends and projected production capacity: [https://rethinkpriorities.org/research-area/investments-into-insect-farming/#Around_\\$2B_has_been_invested_into_insect_farming](https://rethinkpriorities.org/research-area/investments-into-insect-farming/#Around_$2B_has_been_invested_into_insect_farming)

United Nations. (2024). World Population Prospects 2024: Data Portal. Retrieved from United Nations: <https://population.un.org/dataportal/>

United Nations. (n.d.). UN Comtrade Database.

World Bank – MinVivienda. (2021). Tratamiento de residuos sólidos en el marco del servicio público de aseo. Retrieved from https://www.minvivienda.gov.co/sites/default/files/documentos/20210806-entregable-1-v5-definitiva_0.pdf