UNSUSTAINABLE INVESTMENT:

INTERNATIONAL FINANCE CORPORATION'S GAPS IN ADDRESSING BIODIVERSITY LOSS, POLLUTION, AND RESOURCE USE IN INDUSTRIAL LIVESTOCK INVESTMENTS

December 2025

STOP FINANCING FACTORY FARMING

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The **Stop Financing Factory Farming Campaign** works in partnership with locally affected communities and organizations to shift development finance away from industrial livestock production towards healthier, more humane and sustainable food systems. The campaign's global Steering Committee includes: the Bank Information Center, Compassion in World Farming, Friends of the Earth U.S., The Global Forest Coalition, International Accountability Project, Sinergia Animal, and World Animal Protection. The campaign has more than 30 organizational members and partners globally.

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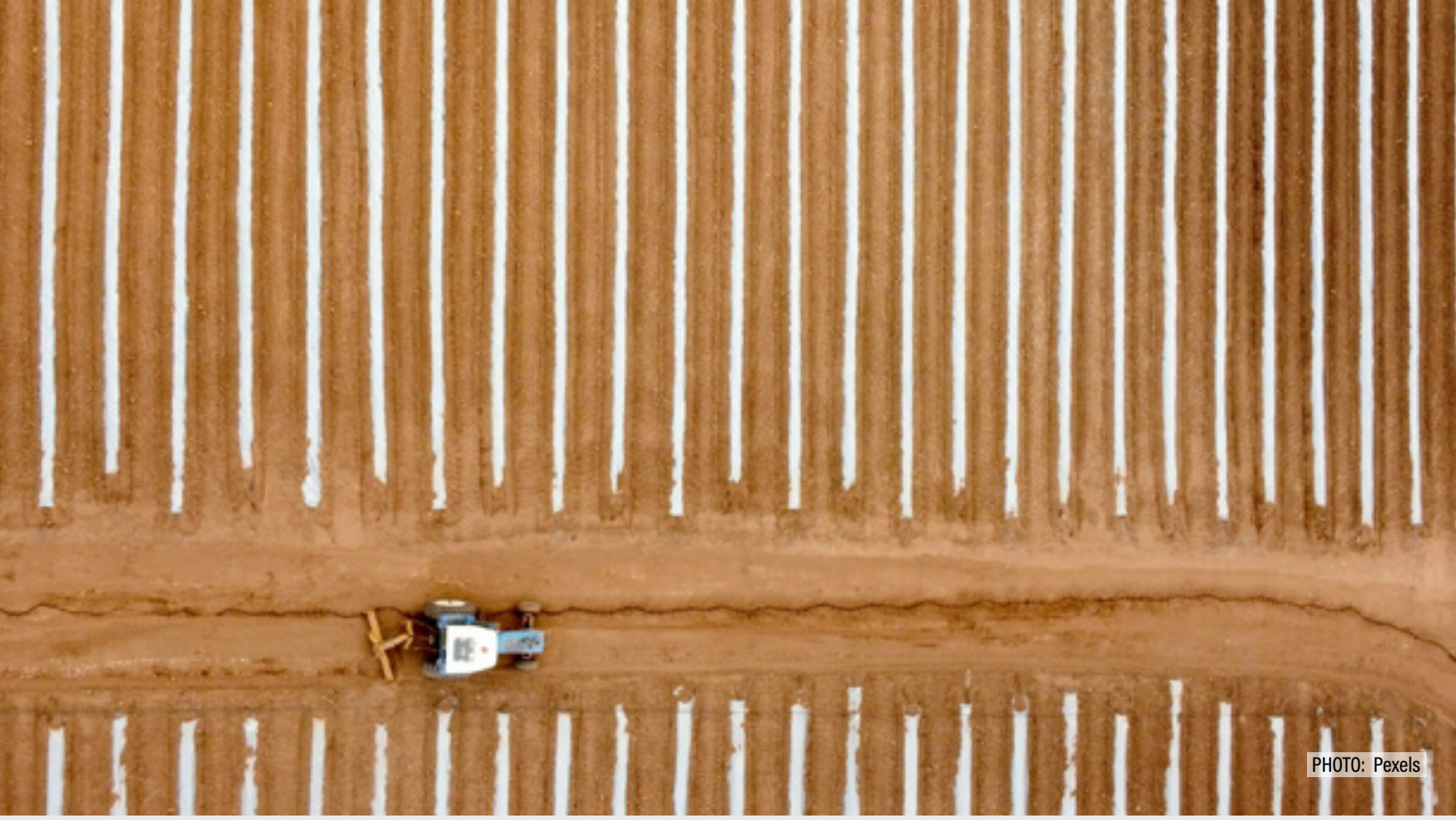
TABLE OF CONTENTS



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EXECUTIVE SUMMARY

Industrial animal agriculture, a key driver of biodiversity loss, pollution and resource overexploitation

Humanity is confronting an intensifying environmental polycrisis—a convergence of interlinked and mutually reinforcing crises, including climate change, biodiversity loss, pollution, and resource depletion—that has driven the Earth beyond seven of the nine established planetary boundaries. With its wide-ranging impacts, including greenhouse gas emissions, deforestation, excessive water and energy use, and pollution, industrial animal agriculture is a key driver of these planetary boundary transgressions.

Industrial animal agriculture (IAA), often referred to as factory farming, has replaced diversified, extensive, smallholder-driven livestock production systems with specialized, concentrated corporate-owned systems that confine thousands of animals indoors, rely on manure lagoons that pollute air and water, and disproportionately harm rural and low-income communities. A handful of multinational corporations control the system through vertically integrated supply chains, using concentrated feed, routine antimicrobials, and selective breeding to maximize production—often at the expense of animal welfare, farmer autonomy, and ecosystem health.

Livestock production drives nearly 20% of global greenhouse gas emissions [1], occupies 70% of global agricultural land, and threatens more than 17,900 species. It is also a major source of nutrient

runoff, microbial contamination, and hazardous waste, while consuming vast amounts of water and energy.

Despite these impacts, the International Finance Corporation (IFC)—the World Bank's private-sector lending arm—invested nearly $2 billion between 2020 and 2025 to expand IAA in developing countries. IFC relies on its Performance Standards (PS) and other safeguards to mitigate these harms, yet civil society groups have repeatedly flagged significant environmental and social damage linked to IFC-financed IAA projects.

The objective of this report is to assess the extent to which IFC investee clients comply with the institution's environmental management requirements and recommendations. It is a sequel to the first Unsustainable Investment report, which assessed client adherence to IFC's greenhouse gas emissions requirements and found that between 2020 and 2025 the IFC approved 38 investments totalling around $2 billion in industrial meat, dairy, and animal feed projects that largely failed to meet those requirements. This study re-evaluates the same 38 IFC-funded industrial animal agriculture (IAA) projects, this time focusing on requirements pertaining to biodiversity loss, pollution (air emissions, wastewater, solid waste), and resource use (water and energy) and additionally makes a focused assessment of a subset of 18 projects centered on primary livestock production.

This analysis draws exclusively on information contained in the projects' Environmental and Social Review Summaries (ESRS) and summary Environmental and Social Action Plans (ESAPs) disclosed by IFC at the time of project approval, recognizing that the time-bound corrective measures set out in the ESAPs are intended to be implemented over time.

Summary of findings

Biodiversity loss

The assessment revealed uneven adherence to IFC's biodiversity conservation requirements and recommendations by industrial animal agriculture (IAA) as well as primary livestock production projects. Of 38 IAA projects, the biodiversity provisions of PS6 were relevant to 32 but applied in only 26, with several projects—such as GXYX's hog expansion in China—showing no evidence of applying PS6 despite operating in sensitive habitats. While reporting on risks to critical, natural, or modified habitats was done by most of the projects, it was generally low on granularity, with only a few projects providing detailed habitat classification or threshold analysis. Application of the mitigation hierarchy was limited: most projects did not demonstrate avoidance of high-value habitats, and only a few included design-based minimization measures. No restoration measures were reported, while one project (Omarsa) included a biodiversity offset, indicating significant anticipated residual impacts.

Very few projects reported significant site-level biodiversity impacts, with a sizeable share stating that they were located in modified habitats. The few that did report site-level impacts had put in place mitigation plans. For instance, MCS Agri in Mongolia reported impacts on critical habitat and proposed mitigation measures aimed at achieving a net gain in biodiversity.

Likewise, only a few projects reported supply chain–related impacts; however, all of these disclosed plans to implement traceability measures or to shift away from suppliers associated with habitat conversion. The primary livestock

production projects showed comparable trends, with most identifying their sites as modified habitats and a small number reporting impacts—each accompanied by mitigation or traceability plans.

Pollution

Pollution prevention and management provisions were variably applied across both IAA and 'primary livestock production' projects. Some projects were exempt, such as those that did not involve facility construction or expansion. Among the projects assessed, adherence to pollution impact assessment requirements was low: several projects considered only one of the two required parameters (ambient conditions and cumulative impacts), and a few provided no evidence of assessment. Compliance with national and international standards for air emissions, wastewater discharge, and solid waste was mixed. While some projects exceeded limits at the time of ESRS disclosure, many included plans within ESAPs to address non-compliance over time.

Resource use (water and energy)

Application of IFC's resource use efficiency provisions (PS3) showed partial adherence across both IAA and 'primary livestock production' projects. Among IAA projects, adherence to the water use reduction hierarchy was limited, with only one project actively avoiding water use and most reporting partial measures such as reduce, recycle, or treat steps. Water and energy efficiency benchmarks were met inconsistently, with a small number of projects achieving or exceeding standards, while others fell short or provided no reporting. Many projects, however, disclosed plans in their ESAPs to improve resource use efficiency over time, suggesting that initial non-compliance may be addressed during implementation. Patterns were similar among primary livestock production projects, with only modest adherence to water and energy efficiency benchmarks and limited reporting on the application of the water use hierarchy.

Overall findings

Across biodiversity, pollution, and resource use, the findings indicate that while IFC's requirements and recommendations were often relevant, their application and reporting were inconsistent. Projects generally demonstrated low adherence to detailed assessment, mitigation, and efficiency requirements. Reporting gaps were common, though many ESAPs contained plans to improve compliance over time.

Key recommendations for IFC

If IFC is to align its investments with the World Bank Group's environmental commitments and planetary boundaries, a decisive course correction is needed. This should include:

(i) reassessing the compatibility of industrial animal agriculture with sustainable development;

(ii) mandating full, transparent, and timely disclosure of compliance with environmental requirements even beyond the project approval stage;

(iii) strengthening due diligence and independent verification;

(iv) strictly enforcing accountability mechanisms for non-compliance to ensure safeguards are meaningful;

(v) prioritizing financing for alternative food production models that are non-polluting, resource-efficient, and have a lower ecological footprint.

INTRODUCTION

The Earth is facing an environmental polycrisis marked by the convergence of climate change, biodiversity loss, pollution, and depletion of natural resources – multiple threats that have assumed planetary proportions. The 2025 Planetary Health Check (PHC) Report underscores this reality, showing that seven of the nine critical Earth system thresholds[1]—climate change, biosphere integrity, land-system change, freshwater use, biogeochemical flows (nitrogen and phosphorus), release of novel entities (e.g., synthetic chemicals, microplastics, and Genetically Modified Organisms), and ocean acidification—have already been breached, pushing the Earth well beyond the safe operating space for humanity [2]. With its wide-ranging environmental impacts, industrial animal agriculture—commonly referred to as "factory farming"—drives exceedances of all seven planetary boundaries that the planet has crossed.

Industrial animal agriculture (IAA) refers to large-scale, capital-intensive, and specialized systems that encompass livestock production, processing, distribution and retail, as well as feed production. These systems are marked by a high degree of centralization, with a shrinking number of farms managing an ever-larger number of animals under increasingly confined conditions. Since the mid-1950s, this model has expanded across developed and developing economies, replacing smaller farms with concentrated animal feeding operations (CAFOs) that confine thousands to hundreds of thousands of animals indoors for most or all of their lives. For waste management, these facilities rely on manure pits or lagoons that pollute water bodies and aquifers, disproportionately affecting the rural and low-income communities where they are located. Power is concentrated in off-farm corporations (often multinational conglomerates), leaving farmers with limited autonomy, while vertical integration across the supply chain allows these firms to own or tightly control input suppliers, production, processing, and retail. The model relies on concentrated feed to accelerate growth and maximize efficiency, along with the routine use of antimicrobials to counter the heightened disease risks inherent in high-density animal confinement. In addition, animals are selectively bred for rapid growth or high yields—often at the expense of their welfare. While these strategies are designed to maximize efficiency and economies of scale, they result in extensive social and environmental costs.

Livestock accounts at least 14.5% of global greenhouse gas emissions and roughly half of the agricultural sector's total emissions [3]. It drives much of the global land-use change, as roughly one-third of the calories produced by the world's crops are used to feed farmed animals [4]. Together, these impacts make the agricultural sector responsible for roughly 30% of global greenhouse gas emissions when land-use change is included [1] and the second-largest driver of climate change after the fossil fuel–based energy sector [5]. The impact on biodiversity is equally profound. Including both pasture and feed crop cultivation, animal agriculture occupies nearly 70% of global agricultural land [3] and has converted around 30% of Earth's total land area [6], resulting in extensive habitat loss and species decline. According to the International Union for Conservation of Nature (IUCN), livestock farming threatens more than 21,250 species listed on the Red List of Threatened Species [7]. IAA is a major source of nutrient (nitrogen and phosphorus) and microbial pollution [8] as well as of air emissions and (often hazardous) solid waste. IAA has a high water, energy and materials footprint. For instance, global livestock production appropriates 4,387 km^3/yr of green (stored in soil and vegetation) and blue water (stored in water bodies) for the production of feed crops, forages, and grazed biomass [9].

Despite the well-documented environmental externalities of IAA, the International Finance Corporation (IFC)—the World Bank's private-sector lending arm and the world's largest development finance institution focused on emerging economies—continues to invest in the introduction and expansion of IAA in developing countries, asserting that such investments align with the World Bank Group's commitments to sustainable economic development and promoting food security [10]. Between March 2020 and March 2025, IFC invested nearly $2 billion in industrial meat, dairy, and feed projects in countries where frontline communities are already experiencing severe consequences of the environmental crises driven by IAA [11]. In parallel, and in an effort to contain the fallout from these very investments, the IFC has adopted a suite of environmental policies requiring its investee clients to mitigate environmental impacts—an approach that manages externalities rather than addressing the deeper sustainability contradictions inherent in financing industrial animal agriculture in the first place.

IFC's environmental safeguards

IFC's suite of environmental policies encompass requirements and recommendations on environmental impact assessment and management for investee clients. These policies include, in addition to IFC's Performance Standards (financing requirements), its Good Practice Notes (e.g., IFC Practices for Sustainable Investment in Private Sector Livestock Operations) as well as the World Bank Group's Environmental Health and Safety Guidelines—both generic and industry specific. IFC's Performance Standards are applied not only to the bank's own investments but also to those of 37 other development banks [12] and 130 other financial institutions (Equator Principle Financial Institutions) [13] that have benchmarked their financing requirements against them. Billions of dollars in financing every year are screened through IFC's Performance Standards, with 20 billion USD (disbursed investments) routed through IFC in 2024 alone [14].

IFC applies a structured environmental and social (E&S) risk and impact assessment process during project appraisal. The findings are summarized in the Environmental and Social Review Summary (ESRS), a public-facing document disclosed prior to Board consideration. The ESRS sets out the project description, key environmental and social risks identified, the applicable IFC Performance Standards, IFC's judgment on the client's compliance trajectory, and references to agreed mitigation measures (pointing to the ESAP). Its primary audience is external—civil society, communities, and other stakeholders—serving as a transparency tool. To ensure these risks are not only disclosed but also effectively managed, IFC works with the client to prepare an Environmental and Social Action Plan (ESAP). The ESAP translates risk and impact assessment findings into specific, time-bound corrective actions—most notably mitigation measures such as installing air and water pollution controls, improving waste management systems, enhancing resource efficiency, and introducing monitoring programs for emissions and effluents. It sets deadlines, milestones, and responsibilities, and becomes a binding part of the legal investment agreement, ensuring that compliance with IFC's Performance Standards is not optional but enforceable. While the ESAP primarily guides IFC and the client, a summary version is disclosed alongside the ESRS. Taken together, the ESRS communicates IFC's appraisal and compliance expectations to the public, while the ESAP operationalizes those expectations into enforceable commitments for project implementation and monitoring [15] [16].

Fine-tuned over decades of international application and ongoing stakeholder consultations, IFC's environmental and social policies and due diligence procedures are widely regarded as industry best practice [12]. Nevertheless, Civil

Society Organizations (CSOs) have repeatedly raised concerns that, despite these safeguards, IFC-financed industrial animal agriculture (IAA) projects have caused significant environmental and social harms—most notably in the cases of Pronaca in Ecuador, Alvoar in Brazil, Guangxi Yangxiang Co., Ltd. in China, and Metagro in Mongolia. Clients' ability to deliver sustainable environmental outcomes depends, at least in part, on the extent to which they comply with IFC's requirements and recommendations. In this respect, client adherence becomes a key measure of whether IFC's investments in private-sector livestock operations can genuinely be considered "sustainable," as asserted in IFC's policies.

The ***Unsustainable Investment*** series of reports provides a quantitative assessment of the extent to which IFC investee clients comply with—or intend to comply with—the institution's environmental management requirements and recommendations outlined in its suite of environmental policies. The analysis draws exclusively on information contained in each project's Environmental and Social Review Summary (ESRS) and the summary version of its Environmental and Social Action Plan (ESAP) disclosed on IFC's Disclosure website. While the preceding report, *Unsustainable Investment: International Finance Corporation's Failures to Address GHG Emissions in Industrial Livestock Operations*, focused on client adherence to climate-related requirements, this study examines adherence in relation to three additional environmental impacts: biodiversity loss, pollution (air emissions, wastewater, and solid waste), and resource use (water and energy). It also assesses whether all relevant IFC standards and policies were applied to the projects, identifying any unwarranted exclusions.

It is important to note that this assessment is based solely on information publicly disclosed by IFC at the project approval stage. Adherence to requirements that may occur during the course of ESAP implementation is not captured in this analysis. The report therefore records any planned mitigation measures outlined in the ESAP summaries, to account for adherence that may occur but has not yet been publicly disclosed.

Projects across livestock supply chains—such as feed production, processing, and distribution, and not just primary livestock production[2]—are included in the assessment because they directly support and intensify industrial livestock systems, potentially enabling higher levels of production and consumption and the associated environmental impacts (Fig.1). For example, dairy processing plants aggregate milk from hundreds or thousands of farmers, feed mills supply industrial-scale livestock operations, and processing or distribution facilities facilitate the large-scale production and sale of animal products. These activities extend the environmental and social impacts of industrial livestock beyond the livestock farm, making such projects an important part of industrial animal agriculture. Their inclusion is therefore based on the scale and nature of their influence on industrialized livestock systems, rather than on whether they are formally classified as livestock production, ensuring the report captures the full spectrum of impacts of industrial animal agriculture. However, a focused assessment was also conducted for 18 "primary livestock production" projects that involve on-farm activities such as raising, breeding, and fattening of animals up to the point of slaughter. These 18 projects form a subset of the 38 but exclude feed production, and livestock processing, distribution, and retail, allowing for a closer examination of client adherence specifically within livestock production.

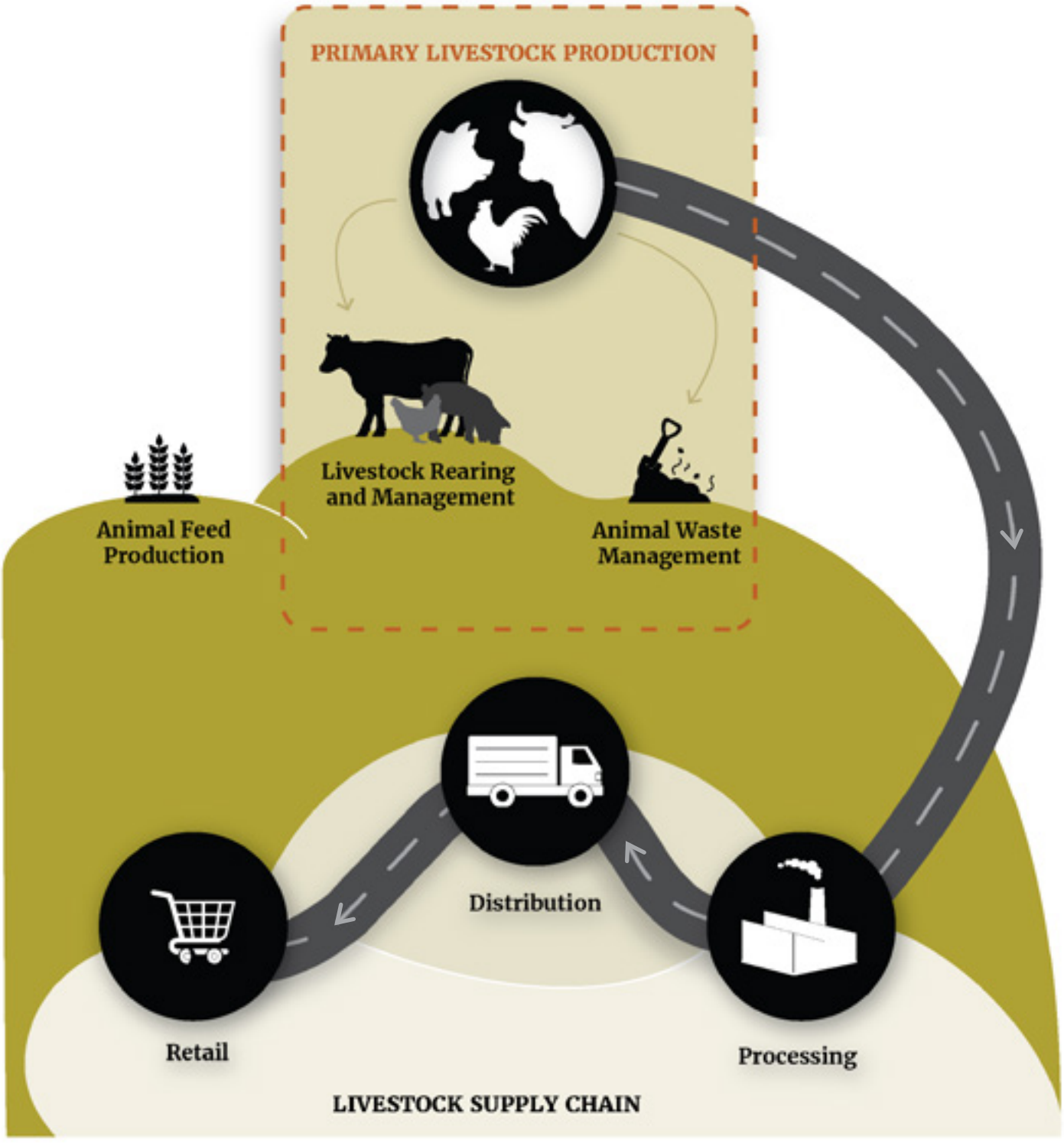

Fig. 1: Industrial Animal Agriculture

KEY PATHWAYS OF THE ENVIRONMENTAL IMPACT OF INDUSTRIAL ANIMAL AGRICULTURE

Biodiversity loss

Industrial animal agriculture drives biodiversity loss through multiple impact pathways, most notably large-scale deforestation, habitat conversion, fragmentation, and ecosystem simplification resulting from monoculture feed production and pasture expansion. Other key pathways include nutrient and animal waste pollution (including eutrophication), air pollution from ammonia and nitrous oxide, and intensive agrochemical use.

Impact Pathway	Description of Impact
Deforestation & Habitat Conversion	Expansion of cattle ranching and feed crop production (e.g., corn, and soy) drives large-scale deforestation and consequent habitat loss, especially in tropical regions like the Amazon, Cerrado, and Gran Chaco.
Habitat Fragmentation & Ecosystem Simplification	Clearing forests and savannas for monoculture feed crops or pastures fragments landscapes, reduces connectivity for wildlife, and simplifies ecosystems. Species richness in farmland is dramatically lower than in natural habitats.
Nutrient Pollution & Eutrophication[3]	Runoff of nitrogen and phosphorus from manure and fertilizers used in feed production causes algal blooms and hypoxic "dead zones" in aquatic systems.
Air Pollution	Ammonia from manure volatilization acidifies soils and damages sensitive terrestrial ecosystems.
Agrochemical Use (Pesticides & Herbicides)	Soy and corn feed monocultures depend on heavy pesticide and herbicide use, which harm pollinators (bees, butterflies) and non-target plants. Glyphosate use in soy/corn fields, for example, has contributed to monarch butterfly population collapse.
Waste Mismanagement (Heavy Metals & Pathogens)	Animal waste contains heavy metals such as copper, zinc, and lead—residues from feed and veterinary pharmaceuticals—that accumulate in soils and pose a threat to soil biodiversity. Pathogen-laden runoff from factory farms contaminates freshwater ecosystems, causing waterborne diseases, fish kills, and disruption of aquatic food webs, ultimately degrading biodiversity and ecosystem health.

Pollution (air emissions, wastewater and solid waste)

Industrial animal agriculture generates pollution across three key categories—air emissions, wastewater, and solid waste—each of which affects the environment through multiple pathways. These include the release of gases and particulates into the atmosphere, the discharge and infiltration of nutrient- and chemical-laden wastewater into surface and groundwater, and the accumulation and decomposition of organic and inorganic solid waste on land and in soils. These pathways collectively affect air and water quality, as well as soil and overall ecosystem health.

Category	Impact Pathway	Description of Impact
Air Emissions	Manure management	Emissions of ammonia (NH_3), methane (CH_4), and nitrous oxide (N_2O) from manure affect air quality.
	Feed storage	Dust, spores, and bioaerosols from feed storage units degrade local air quality.
	HFC leaks from cooling and refrigeration systems	Hydrofluorocarbons (HFCs) harm the ozone layer and act as potent short-lived climate pollutants.
	Combustion (boilers, generators, machinery)	Releases particulate matter (PM), sulphur oxides (SOx), nitrogen oxides (NOx), and carbon monoxide (CO), lowering air quality.
	Transport (vehicles, trucks)	Vehicle and truck emissions release particulate matter (PM), nitrogen oxides (NOx), and carbon monoxide (CO), contributing to smog and poor air quality.
Wastewater	Direct discharge to surface waters	Nutrients (nitrogen and phosphorus) from wastewater deplete oxygen, and cause eutrophication in water bodies, harming aquatic life.
	Groundwater infiltration	Leachates from wastewater such as nitrates, phosphates, and chemicals contaminate soil and groundwater, affecting ecosystem health.
Solid Waste	Organic waste (manure, carcasses, offal)	Decomposition of organic waste releases ammonia (NH_3), methane (CH_4), and other pollutants, causing nutrient runoff, soil degradation, and air pollution.
	Inorganic waste (plastics, construction debris)	Leachates from inorganic wastes—such as heavy metals (lead, cadmium), microplastics, and toxic chemicals—contaminate soil and water, harming ecosystems. Accumulation of inorganic waste can clog soils and waterways, reducing soil porosity and permeability, impeding water infiltration, and disrupting root growth and soil aeration. In waterways, it can obstruct flow and degrade water quality. Together, these effects compromise soil fertility, ecosystem function, and the health of surrounding aquatic and terrestrial environments.

Resource use (water and energy)

Industrial animal agriculture consumes substantial amounts of water and energy across a range of pathways—from feed cultivation and milling, through on-farm operations, processing, and distribution, to waste management—each pathway generating distinct resource pressures and environmental impacts.

Impact Pathway	Description of Impact
Feed production	Large amounts of water and energy are required to grow feed crops (e.g., corn, and soy). Irrigation contributes to freshwater depletion, aquifer stress, and altered river flows, especially in water-scarce regions. Fertilizers and pesticides used in monocrop feed cultivation also demand high-energy inputs.
Feed milling	Facilities that grind, mix, pellet, and process feed for livestock consume large amounts of electricity and fuel. Dust suppression and cooling may also require water.
On-farm operations	Energy is used for heating, cooling, lighting, and ventilation in animal housing, along with automated feeding systems. Water is needed for livestock to drink and for cleaning pens and equipment, leading to significant consumption.
Processing and slaughter	Slaughterhouses and processing plants are highly water-intensive (e.g., carcass washing, cleaning, rendering). Energy use is also high for refrigeration, freezing, and processing equipment.
Distribution (Transport and Logistics)	Transporting animals, feed, and processed products, especially across global value chains, requires fuel and refrigeration, increasing energy demand. Cold storage facilities consume substantial electricity for freezing and refrigeration.
Waste management	Treating and disposing of manure, wastewater, and slaughter waste require large volumes of water and energy. Inadequate treatment can also result in water contamination.

METHODOLOGY

Step 1: Extracting environmental provisions from IFC's policies

Environmental provisions were extracted from the following documents:

Source Document	Purpose	Relevant Content for Analysis
IFC Performance Standards and Guidance Notes	Define client responsibilities for managing environmental and social risks and impacts.	Performance Standards are mandatory for clients; Guidance Notes elaborate on requirements and provide good practice examples.
IFC Practices for Sustainable Investment in Private Sector Livestock Operations	Builds upon the Performance Standards to articulate sector-specific sustainability practices.	Includes expectations related to GHG emissions and biodiversity. Clients are expected to align within three years.
World Bank Environmental, Health, and Safety (EHS) Guidelines	Provide technical reference points for Good International Industry Practice (GIIP).	Serve as benchmarks for environmental and safety performance in various sectors, including agriculture.

Step 2: Classification and scope of environmental provisions

Component	Description
Classification Criteria	Environmental provisions were classified as either: - Requirements – what clients must do, based on enforceable language - Recommendations – what clients should do, based on advisory language.
Exclusions	Procedural "how-to" guidance was excluded. Only outcome- or action-oriented provisions were included.
Precedence Across Documents	Where the same provision appeared in multiple documents, the version from the IFC Performance Standards was given precedence due to its greater enforceability.
Scope of Analysis	The analysis focused exclusively on environmental provisions. Provisions related to health, safety, social, and community issues were excluded.
Thematic Areas Covered	Environmental provisions related to the following impacts were extracted: • Biodiversity loss • Pollution • Resource use.
Reference	See Appendix 1 for the full list of extracted requirements and recommendations.

Step 3: Assessing projects against IFC's environmental requirements and recommendations

Component	Description
Scope	**Timeframe:** March 2020–March 2025.[4] **Type of investments covered:** direct lending, intermediated financing, general corporate finance, and advisory services. **Number of projects covered:** • 38 IFC-funded industrial animal agriculture (IAA) projects spanning the entire livestock supply chain, including feed production, livestock production, meat and dairy processing, and retail. • Focused analysis of 18 primary livestock production projects, involving operations such as breeding, hatching, feeding, and fattening of animals up to the point of slaughter. This focused evaluation was conducted in response to IFC's feedback that the first *Unsustainable Investment* report lacked sufficient nuance in its categorization of livestock sector projects.
Assessment of Client Adherence	**Requirements:** Using information from each project's ESRS and the summary version of the ESAP published on IFC's Disclosure website, adherence to IFC's requirements was assessed by rating projects as high, low, zero, or no evidence provided, based on specific adherence criteria. The best practice for each requirement—conceived as the ideal standard—was also articulated. **Recommendations:** Using the same sources, adherence to IFC's recommendations was assessed using a Yes/No binary indicator. Instances where no evidence was provided were indicated separately.
Sources of Evidence	Environmental and Social Review Summaries (ESRS) and summary versions of Environmental and Social Action Plans (ESAPs) available on IFC's Disclosure website.

KEY FINDINGS: BIODIVERSITY LOSS

This section presents findings from the assessment of the extent to which the reviewed IFC-funded projects adhered to the Bank's requirements and recommendations on biodiversity impact assessment and management.

IFC's requirements and recommendations on biodiversity impact assessment and management

A review of IFC's suite of environmental policies revealed three requirements and three recommendations with respect to biodiversity conservation. For each requirement, the corresponding industry best practice—based on our review of industry standards—is also provided.

For additional information regarding requirements, recommendations, and adherence criteria please refer to Annex 1.

PHOTO: Shutterstock

IFC's requirements and recommendations on biodiversity impact assessment and management

Biodiversity impact assessment	Requirement 1.1	Assess whether the operations of the project (or those of primary suppliers) pose risk to critical, natural or modified habitat	**Best Practice:** Client reports on overlap of the company's operations as well as primary and secondary suppliers with critical, natural or modified habitat with detailed criteria and threshold analysis to determine whether the habitat was modified, natural or critical
Biodiversity impact management	Recommendation 1.1	Apply the mitigation hierarchy	
	Requirement 1.2	If the project is located in/ impacts critical habitat, design mitigation measures to achieve net gain of biodiversity	**Best Practice:** Client avoids siting project in critical habitat
	Recommendation 1.2	If the project is located in/ impacts natural habitat, design mitigation measures to achieve no net loss of biodiversity, where feasible	
	Recommendation 1.3	If the project is located in/ impacts modified habitat with significant (but not critical) biodiversity value, minimize conversion or degradation of habitat and find opportunities to enhance it	
	Requirement 1.3	Mitigate supply chain impacts	**Best Practice:** The client commits to establishing supply chain traceability for both primary and secondary suppliers and to permanently shifting to suppliers—including to those in other regions, if necessary—that can demonstrate they do not significantly contribute to the conversion of natural or critical habitats. The client also commits to zero-deforestation targets across its supply chains.

Client adherence to IFC's requirements and recommendations on biodiversity: IAA projects[5] (n=38)

Applicability and application of IFC Performance Standard 6 (PS6): Biodiversity Conservation and Sustainable Natural Resource Management

IFC PS6 Applicable (No. of projects out of 38)	IFC PS6 Applied (No. of projects out of 38)		
	Yes	No evidence	Rationale for not applying PS6 provided
32	26	6	1

Applicability and application of biodiversity conservation provisions of PS6: Of the 38 IAA projects evaluated, the biodiversity conservation provisions of Performance Standard 6 (PS6) were applicable[6] to 32 projects but were applied to only 26 (n=26/32). For six (n=6/32) projects, the ESRS and ESAP summaries provided no evidence of PS6 provisions being applied, even though these provisions were relevant because the projects involved either the construction or expansion of greenfield facilities, or the primary production of living natural resources. For instance, the ESRS or ESAP summary for the hog production expansion project of the Chinese integrated pork producer GXYX provides no evidence of the application of PS6's biodiversity conservation provisions, despite the project's location within Yaji Mountain Forest Park in Guangxi Province. According to the ESRS of the project: *"To expand its hog production capacity and strengthen its vertical integration, GXYX has launched a US$264 million expansion project in Yaji Mountain Forest Park, Guangxi Province, adjacent to its existing multi-story pig farms."*

Only one project (Suguna III) provided a rationale for non-application of PS6. It stated: *"Also, considering the locations and size of the facilities, no biodiversity-related impacts are expected due to the project and thus PS6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources) is not applicable."*

Client adherence to IFC requirement on biodiversity impact assessment

Requirement	Adherence (No. of projects out of 26)[7]		
	High	Low	Zero
1.1. Assess whether the operations of the project (or those of primary suppliers) pose risk to critical, natural or modified habitat	3	23	0

- **Assessment of risk to critical, natural or modified habitat**. Of the 26 projects that applied the biodiversity conservation provisions of PS6, all (n=26/26) reported on whether projects operations—or those of their primary suppliers—posed risks to critical, natural, or modified habitats (Requirement 1.1) (see Appendix 1 for adherence criteria). However, 23 (n=23/26) of these projects demonstrated low adherence to this requirement, as they reported only spatial overlaps between operations and such habitats, without providing the criteria or threshold analysis necessary to classify habitat type. Only three (n=3/26) projects demonstrated high adherence by including information on the thresholds used to identify critical or natural habitats.
- **Application of the mitigation hierarchy.** Very few IAA projects explicitly reported having applied[8] the mitigation hierarchy[9] (Fig. 2) to manage biodiversity impacts (Recommendation 1.1); however, it should be noted that findings reflect what clients have reported and not necessarily actual practice. None (n=0/26) of the projects indicated whether they had deliberately 'avoided' critical or natural habitats, or other areas of high biodiversity value, during siting decisions—the first step in the mitigation hierarchy—or whether siting in modified habitats occurred by default. Five (n=5/26) projects reported incorporating design-based measures to minimize biodiversity impacts in their Biodiversity Action Plans (BAPs) (the second step of the mitigation hierarchy). One (n=1/16) project by Ecuador-based integrated shrimp and tilapia producer Santa Priscila reportedly included several design-based avoidance and minimization measures in its BAP. As per their ESRS: *"To ensure conformance with PS6 requirements, the Company will (i) hire a qualified ecologist with experience on powerlines lines to conduct a habitat classification along the TL and electricity distribution lines with respect to PS6 definitions and identify priority species at risk of collision and electrocution; (ii) seek to avoid habitats of highest risk; (iii) with respect to distribution lines, select designs that minimize the risk of bird electrocution; (iv) install bird flight diverters in habitats associated with priority birds; and (v) maintain bird flight diverters for the duration of the Project. Based on this assessment, the Company will also hire an international consultant with experience in fatality monitoring to design a fatality monitoring program of birds and procure a team of biologists to undertake fatality monitoring and report on results for the first three years of Project".* None (n=0/26) of the projects reported including restoration measures in their BAPs (the third step of the mitigation hierarchy). One (n=1/26) project—undertaken by Ecuador-based shrimp producer and processor Omarsa—reported provisions for a biodiversity offset in its BAP (the last step of the mitigation hierarchy), indicating that the project anticipated significant residual impacts on biodiversity that could not be avoided, minimized, or restored. As offsetting is intended to be a last-resort measure within the mitigation hierarchy, its inclusion underscores the severity of the project's potential impacts.

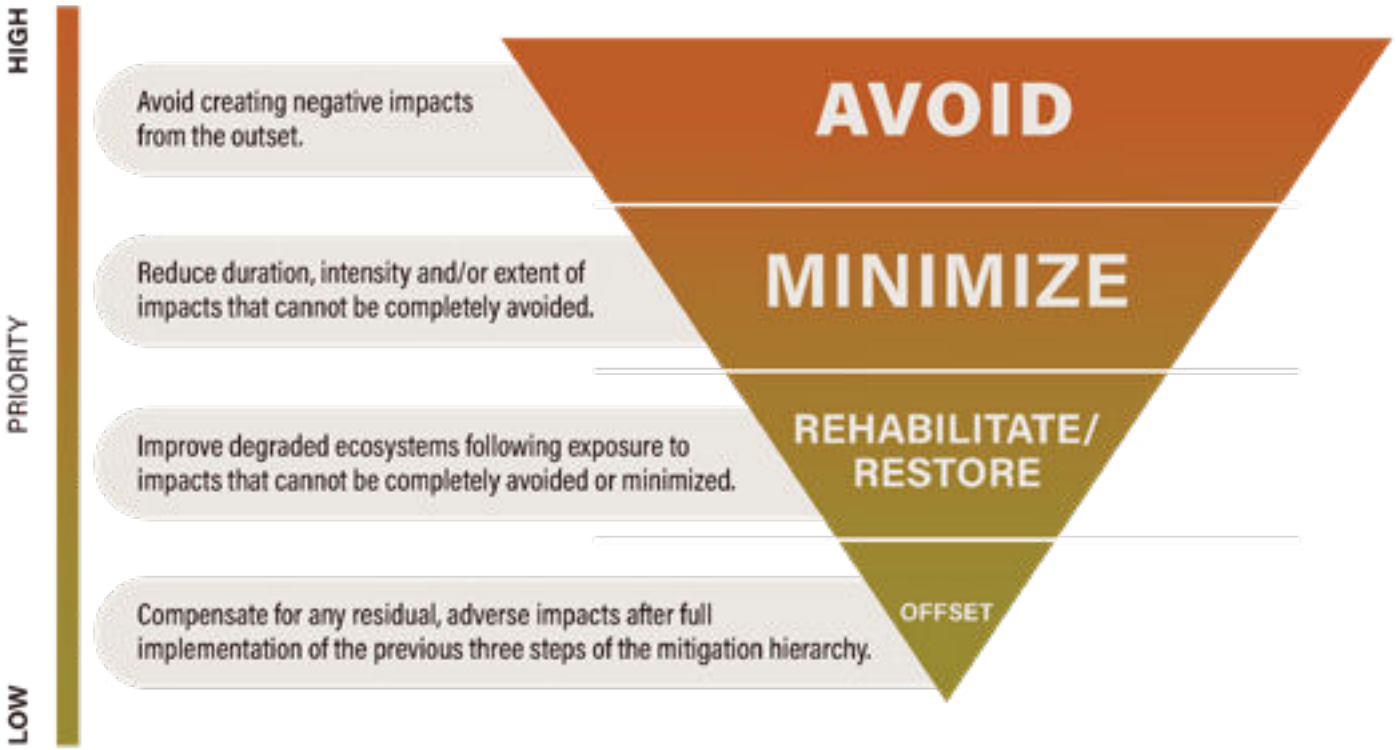

Fig. 2 The Mitigation Hierarchy (Image Source)

Number of projects with impacts on biodiversity

No. of projects that reported overlap with critical, natural or modified habitat (Requirement 1.1)	No. of projects that reported significant biodiversity impact from site-level operations	No. of projects that reported significant biodiversity impact from supply chains	Projects that reported overlap with modified habitat or found no significant biodiversity impact
26	7	10	13

- **Projects with site-level biodiversity impacts and respective mitigation plans**: Thirteen (n=13/26) projects (out of the 26 that reported overlap with critical, natural, or modified habitat under Requirement 1.1) stated that their operations (or supply chains) are either located in consolidated agricultural areas—classified as modified habitat—or will not involve any land conversion, and therefore are unlikely to result in significant biodiversity impacts. Seven (n=7/26) projects reported biodiversity impacts from site-level operations. Of these projects,

one (n=1/7) —by the Mongolian integrated beef producer MCS Agri—reported impacts on critical habitat, a matter of particular concern given the heightened level of protection such areas warrant. The project proposed mitigation measures intended to deliver a ***net gain*** in biodiversity (Requirement 1.2). The ESRS of MCS noted: *"The project itself is located in an area of modified grassland habitat around 10 km east of the protected area. Species values of the surrounding grassland habitats were surveyed, and several species of conservation interest were identified. These include Mongolian gazelle Procapra gutturosa (IUCN LC), Steppe Eagle Aquila nipalensis (IUCN EN), and Mongolian Marmot Marmota sibirica (IUCN EN), with the latter species identified as triggering critical habitat on a precautionary basis."* It went on to state: *"Based on the impact assessments, Metagro will develop corrective actions for achieving Net Gain for CH which will be detailed in a BAP and other mitigations to address other impacts (e.g., for the OHTL)."* Two (n=2/7) other projects—by Omarsa Farm and Mavin—reported impacts on natural habitat; however, only Omarsa Farm provided a mitigation plan designed to achieve ***no net loss*** of biodiversity (Recommendation 1.2). In addition, four (n=4/7) projects reported measures to mitigate impacts on modified habitat (Recommendation 1.3).

- **Projects with biodiversity impacts within supply chains and respective mitigation plans:** Of the 26 projects reporting on the biodiversity conservation provisions of PS6, ten (n=10/26) noted the risk of sourcing from farms that had converted critical or natural habitats (Requirement 1.1). While eight (n=8/10) of these reported low adherences (see Appendix 1 for adherence criteria) to the requirement of managing such supply chain risks—limiting procurement from suppliers that do not meet IFC PS6 requirements—only two (n=2/10) projects demonstrated high adherence by establishing plans to implement strict supply chain traceability measures and transition away from suppliers that pose a risk of converting critical or natural habitats (Requirement 1.3).

Client adherence to IFC's requirements and recommendations on biodiversity: livestock production projects[10] (n=18)

Applicability and application of IFC PS6

IFC PS6 Applicable (No. of projects out of 18)	IFC PS6 Applied (No. of projects out of 18)		
	Yes	No evidence	Rationale for not applying provided
18	13	5	1

Client adherence to IFC requirement on biodiversity impact assessment

Requirement	Adherence (No. of projects)		
	High	Low	Zero
1.1 Assess whether the operations of the project (or those of primary suppliers) pose risk to critical, natural or modified habitat	2	11	0

- **Applicability and application of biodiversity conservation provisions of PS6**: Of the 18 'primary livestock production' projects evaluated, the biodiversity conservation provisions of Performance Standard 6 (PS6) were applicable[6] to all but were applied only by 13 projects (n=13/18). For five (n=5/18) projects, there was no evidence in the ESRS or ESAP summaries of PS6 provisions being applied, despite their clear relevance—either due to the construction or expansion of greenfield facilities or involvement in the primary production of living natural resources. Among these, only one (n=1/5) project (Suguna III) provided a rationale for their non-application.
- **Assessment of risk to critical, natural or modified habitat**. Of the 13 primary livestock production projects that applied the biodiversity conservation provisions of PS6, all (n=13/13) reported on whether project operations (or those of primary suppliers) posed risks to critical, natural, or modified habitats (Requirement 1.1; see Appendix 1 for adherence criteria), while three did not provide such reporting. Eleven (n=11/13) projects demonstrated low adherence to Requirement 1.1, typically noting only overlaps between operations and various habitat types without including the criteria or threshold analysis needed to classify habitat type. Only two (n=2/13) projects demonstrated high adherence, providing detailed information on thresholds used to identify critical or natural habitats.
- **Application of the mitigation hierarchy.** Very few livestock production projects explicitly reported applying the mitigation hierarchy to manage biodiversity impacts (Recommendation 1.1). It is important to note, however, that these findings are based on reported information and may not fully reflect actual practices. None (n=0/13) of the projects out of the 13 that reported risk to critical natural or modified habitats on indicated that they had intentionally "avoided" critical or natural habitats or other areas of high biodiversity value during site selection—the first step of the mitigation hierarchy. Four (n=4/13) projects reported incorporating design-based measures to "minimize" biodiversity impacts within their Biodiversity Action Plans (BAPs) (the second step of the mitigation hierarchy), with one (n=1/13) of these also noting the use of design-based "avoidance" measures. No (n=0/13) projects reported including restoration measures in their BAPs (the third step of the mitigation hierarchy), and one (n=1/13) mentioned provisions for a biodiversity offset (the last step of the mitigation hierarchy).

Number of projects with impacts on biodiversity

No. of projects that reported overlap with critical, natural or modified habitat (Requirement 1.1)	No. of projects that reported significant biodiversity impact from site-level operations	No. of projects that reported significant biodiversity impact from supply chains	Projects that reported overlap with modified habitat or found no significant biodiversity impact
13	5	4	6

- **Projects with site-level biodiversity impacts and respective mitigation plans.** Six (n=6/13) of the 13 projects that reported overlaps with critical, natural, or modified habitats indicated that their operations (or supply chains) are located in consolidated agricultural areas classified as modified habitat, or that no land conversion would occur—suggesting limited potential for significant biodiversity impacts (Requirement 1.1). Five (n=5/13) projects reported biodiversity impacts from their sites (Requirement 1.1). Among these, one project (n=1/5), the Mongolian integrated beef producer MCS Agri acknowledged impacts on critical habitat—an outcome that international best practice seeks to avoid due to the irreplaceable nature of such areas—and proposed mitigation measures aimed at achieving a net gain in biodiversity (Requirement 1.2). Two (n=2/5) projects (Omarsa Farm and Mavin) reported impacts on natural habitats, though only Omarsa Farm outlined a mitigation plan designed to achieve no net loss (Recommendation 1.2). Two (n=2/5) additional projects reported measures to mitigate the loss of modified habitat (Recommendation 1.3).
- **Projects with biodiversity impacts within supply chains and respective mitigation plans.** Four (n=4/13) projects reported the risk of sourcing from farms that involve conversion of critical/natural habitat. Three (n=3/4) of these demonstrate adherence, albeit low (see Appendix 1 for adherence criteria), to the requirement of managing these supply chain risks by limiting supply from suppliers that do not meet IFC PS6 requirements (Requirement 1.3). One (n=3/4) project, by Ecuador-based shrimp producer and processor Omarsa, purportedly put in place plans for supply chain traceability and to transition away from suppliers who pose risks of conversion of critical/natural habitat (Requirement 1.3).

KEY FINDINGS: POLLUTION

This section presents findings from the assessment of the extent to which the reviewed IFC-funded projects adhered to the Bank's requirements and recommendations on biodiversity impact assessment and management.

IFC's requirements and recommendations on pollution impact assessment and management

Pollution Impact assessment (air emissions, wastewater, and solid waste)	Requirement 2.1	Assess impact within the environmental context (e.g., ambient conditions, assimilative capacity, environmentally sensitive receptors) of the project including assessment of cumulative impacts	**Best Practice:** The client reports that a wide range of parameters of the environmental context, including ambient conditions, assimilative capacity, and environmentally sensitive receptors, are considered during impact assessment and that cumulative impacts are assessed. Where projected impacts exceed the finite assimilative capacity of the environment, projects should be subject to a comply-or-explain standard that articulates how anticipated benefits outweigh negative impacts.
Pollution Impact management (air emissions, wastewater, and solid waste)	Recommendation 2.1	Ensure air emissions don't reach or exceed relevant international or national standards	
	Recommendation 2.2	Ensure wastewater discharge does not reach or exceed relevant international or national standards	
	Recommendation 2.3	Ensure waste generation does not reach or exceed international and national standards	

Client adherence to IFC requirements and recommendations on pollution: IAA projects (n=38)

Applicability and application of IFC PS3

IFC PS3 Applicable (No. of projects out of 38)	IFC PS3 Applied (No. of projects out of 38)	
	Yes	No
33	33	0

Client adherence to IFC's requirement on pollution impact assessment

Requirement	Adherence (No. of projects out of 33)			
	High	Low	Zero	No Evidence
2.1 Assess impact within the environmental context (ambient conditions) of the project including assessment of cumulative impacts	1	13	2	17

Client adherence to IFC's recommendations on pollution impact management

Recommendation	Adherence (No. of projects out of 33)			Planned in ESAP
	Yes	No	No Evidence	
2.1 Ensure air emissions don't reach or exceed relevant international or national standards	19	3	11	6
2.2 Ensure wastewater discharge does not reach or exceed relevant international or national standards	19	7	7	12
2.3 Ensure waste disposal does not reach or exceed international and national standards	4	0	29	19

- **Application of pollution prevention and management provisions.** Pollution prevention and management provisions were not applicable to 5 (n=5/38) of the 38 assessed projects, as these did not involve the construction or operation of production or processing facilities. For example, the proposed IFC loan to the Brazilian feed crop producer and trader Louis Dreyfus Company Brasil S.A. was intended to support the purchase of crops from eligible farmers committed to zero deforestation and the avoidance of natural habitat conversion, and therefore did not entail the application of pollution-related provisions.

- **Adherence to pollution impact assessment provisions.** Of the 33 (n=33/38) projects examined for pollution prevention and management, 13 (n=13/33) reported low adherence to Requirement 2.1, which calls for assessing the impact of pollutants and waste by considering both the broader environmental context (ambient conditions) and cumulative impacts. These projects addressed only one of the two parameters. One (n=1/33) project, by Ukrainian feed producer and trader Astarta, presented at least one instance of considering both the parameters. In its ESRS, Astarta reported: *"The company regularly monitors ambient air at the border of the Sanitary Protection Zone (SPZ) of the facilities, which, for the Globynsky soybean processing plant, is 100 meters from the emission source, as defined by regulatory requirements (ambient conditions reference). Results of the emission dispersion modeling for SPC, including the cumulative impact from the Globynsky soybean processing plant, are within national legal requirements and WHO Ambient Air Quality Guidelines at the SPZ border (cumulative impact reference). Filtration fields are equipped with monitoring wells located along the perimeter to monitor groundwater quality" (ambient conditions reference).* By contrast, in the ESRS of two (n=2/33) projects, it was explicitly stated that neither ambient conditions nor cumulative impacts were considered. For example, the ESRS of Indian integrated poultry producer Suguna III stated: *"It was noted that the ambient air quality and stack emissions monitoring was not conducted regularly at the visited facilities."* For the remaining 17 (n=17/33) projects, the ESRS did not contain any evidence of reporting on this requirement. It should be noted, however, that these assessment practices were observed at the project approval stage, during assessment of the environmental risks and impacts and disclosure of the ESRS. The ESAP may have subsequently included actions to strengthen or enhance these practices over time.

- **Compliance with national and international air emissions standards.** Of the 33 projects to which pollution-related provisions were applied, three (n=3/33) reported air emissions exceeding relevant national or international standards, including the World Bank EHS Guidelines. For instance, the ESRS of Ugandan integrated poultry producer HMH Rainbow noted: *"HMH Rainbow undertakes annual EAs that include air quality and noise measurement. The latest EA (2021) showed that some sections in the Farm 1 complex recorded high dust concentrations, exceeding particulate matter (PM2.5 and PM10) limits under Uganda's regulatory requirements."* However, this reflects non-compliance only at the time of project approval, when the environmental assessment was conducted and the ESRS disclosed. The associated ESAPs may well include measures to improve air emissions management. Indeed, six (n=6/33) projects explicitly disclosed such plans. Nineteen (n=19/33) projects confirmed compliance, while eleven (n=11/33) did not report their compliance status (Recommendation 2.1).

- **Compliance with national and international wastewater discharge standards.** Of the 33 projects subject to pollution-related provisions, seven (n=7/33) reported wastewater discharge

values in which at least one parameter exceeded relevant national or international standards. For example, the ESRS of Yemen-based dairy processor HSA Foods stated: *"HSA Foods currently do not have a process for regular monitoring and testing of wastewater quality, although testing has been undertaken at Nadfood Hodaida, Nadfood Taiz, and Yemen Sugar; measurements for BOD, COD, total suspended solids, oil and grease, and total nitrogen exceed WBG EHS Guidelines for effluent discharged to surface waters."* Again, this indicates non-compliance only at the project approval stage, when the ESRS was prepared. The corresponding ESAPs may contain measures on wastewater management. In fact, 12 (n=12/33) projects explicitly disclosed such plans. Nineteen projects (n=19/33) confirmed compliance, and seven (n=7/33) did not report their compliance status (Recommendation 2.2).

- **Compliance with national and international solid waste generation and disposal standards.** Of the 33 projects subject to pollution-related provisions, only four (n=4/33) reported on solid waste generation and disposal in relation to relevant national or international standards, including the World Bank EHS Guidelines: all four (n=4/4) confirmed compliance (Recommendation 2.3). The ESRS or ESAP summaries of 29 (n=29/33) projects did not contain any evidence on compliance with this requirement. The ESAPs of 18 (n=18/33) projects included plans to improve solid waste management.

PHOTO: Unsplash

Client Adherence to IFC requirements and recommendations on pollution, livestock production projects (n=18)

Applicability and application of IFC PS3

IFC PS3 Applicable (No. of projects out of 18)	IFC PS3 Applied (No. of projects out of 18)	
	Yes	No
18	18	0

Client adherence to IFC's requirement on pollution impact assessment

Requirement	**Adherence (No. of projects out of 18)**			
	High	Low	Zero	No Evidence
2.1 Assess impact within the environmental context (ambient conditions) of the project including assessment of cumulative impacts	0	6	1	11

Client adherence to IFC's requirement on pollution impact management

Recommendation	**Adherence (No. of projects out of 18)**			**Planned in ESAP**
	Yes	No	No Evidence	
2.1 Ensure air emissions don't reach or exceed relevant international or national standards	9	1	8	4
2.2 Ensure wastewater discharge does not reach or exceed relevant international or national standards	10	4	4	7
2.3 Ensure waste disposal does not reach or exceed international and national guidelines and standards	2	0	16	11

- **Application of pollution prevention and management provisions.** Pollution prevention and management requirements were applicable to all (n=18/18) of the assessed "primary livestock production" projects, as these involved animal production activities.
- **Adherence to pollution prevention and management provisions.** Of the 18 "primary livestock production" projects examined for pollution prevention, six (n=6/18) reported low adherence to Requirement 2.1, which calls for assessing both the broader environmental context (ambient conditions) and cumulative impacts. These projects addressed only one of the two parameters, rather than both as required. None (n=0/18) demonstrated high adherence, not having considered both parameters. Eleven (n=11/18) projects did not report on this requirement (no evidence), while one (n=1/18) project by Indian integrated poultry producer Suguna reported in the negative i.e., not having measured ambient air quality (zero adherence). It should be noted, however, that these assessment practices were observed at the project approval stage, during the evaluation of environmental risks and impacts and the disclosure of the ESRS. The ESAP may have subsequently included measures to strengthen or enhance these practices over time.
- **Compliance with national and international air emissions standards.** Of the 18 projects to which pollution-related provisions applied, one (n=1/18) reported air emissions exceeding relevant national or international standards, including the World Bank EHS Guidelines. However, this reflects non-compliance only at the time of project approval, when the environmental assessment was conducted and the ESRS prepared. The associated ESAPs may well include measures to improve air emissions management. Indeed, four (n=4/18) projects explicitly disclosed such plans in the summary ESAPs. Nine (n=9/18) projects confirmed compliance, while eight (n=8/18) did not report their compliance status (Recommendation 2.1).
- **Compliance with national and international wastewater discharge standards.** Of the 18 livestock production projects subject to pollution-related provisions, four (n=4/18) reported wastewater discharge values in which at least one parameter exceeded relevant national or international standards. Again, this indicates non-compliance only at the project approval stage, when the ESRS was disclosed. The corresponding ESAPs may contain measures to improve wastewater management. In fact, seven projects (n=7/18) explicitly disclosed such plans. Ten (n=10/18) projects confirmed compliance, and four (n=4/18) did not report their compliance status (Recommendation 2.2).
- **Compliance with national and international solid waste generation and disposal standards.** Of the 18 projects subject to pollution-related provisions, only two (n=2/18) reported on solid waste generation and disposal in relation to relevant national or international standards, including the World Bank EHS Guidelines, confirming compliance. Eleven (n=11/18) disclosed plans to put in place solid waste management measures in their ESAPs (Recommendation 2.3).

KEY FINDINGS: RESOURCE USE

This section presents findings from the assessment of the extent to which the reviewed IFC-funded projects adhered to the Bank's requirements and recommendations on biodiversity impact assessment and management.

IFC's requirements and recommendations on resource use impact assessment and management

A review of IFC's suite of environmental policies revealed three requirements and three recommendations with respect to biodiversity conservation. For each requirement, the corresponding industry best practice—based on our review of industry standards—is also provided.

Requirement 3.1	Apply water use reduction hierarchy[11] (Fig.3) to avoid causing water stress to third parties	**Best practice:** The client prioritizes the avoidance of unnecessary water use, minimize consumption through efficient housing and cleaning systems, maximize on-site reuse and recycling of process water and effluents, and discharge treated wastewater only as a last resort.
Recommendation 3.1	Strive to achieve and exceed benchmark levels of water use efficiency	
Recommendation 3.2	Strive to achieve and exceed benchmark levels of energy use efficiency	

Applicability and application of IFC PS3

IFC PS3 Applicable (No. of projects out of 38)	IFC PS3 Applied (No. of projects out of 38)	
	Yes	No
33	33	0

Client adherence to IFC requirements and recommendations on resource use: IAA projects (n=38)

Requirement	Adherence (No. of projects out of 33)		
	High	Low	Zero
3.1 Apply water use reduction hierarchy to avoid causing water stress to third parties	1	12	20

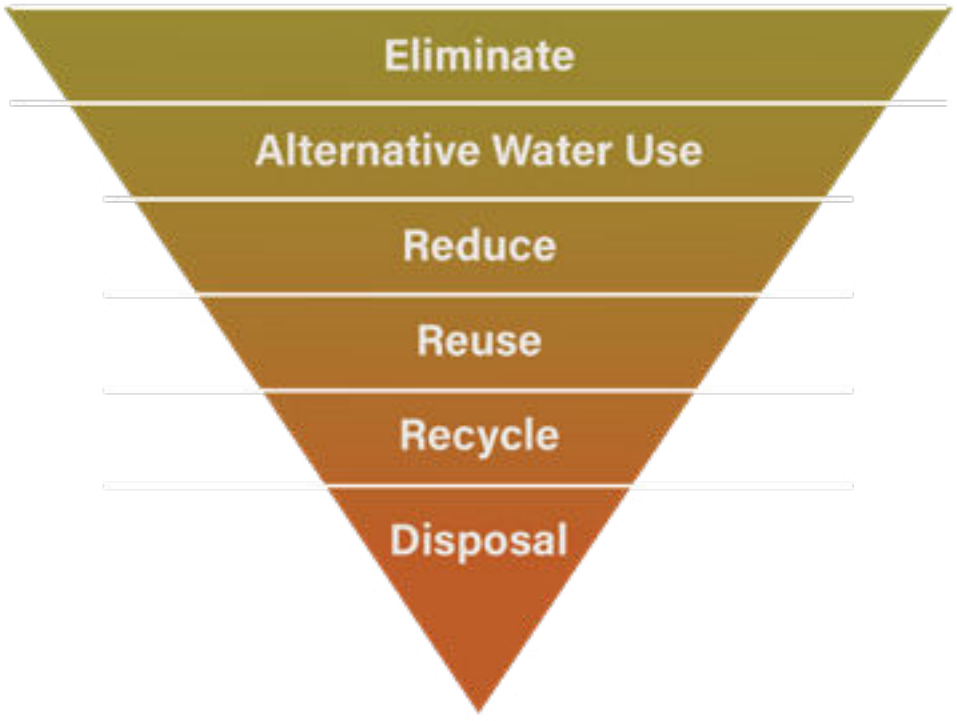

Fig. 3: The Water Use Reduction Hierarchy (Manan and Wan Alwi, 2006).

Recommendation	Adherence (No. of projects out of 33)			Planned in ESAP
	Yes	No	No Evidence	
3.1 Strive to achieve and exceed benchmark levels of water use efficiency	8	5	20	16
3.2 Strive to achieve and exceed benchmark levels of energy use efficiency	5	3	25	11

- **Application of resource use efficiency provisions**. Out of the 38 IAA projects assessed, resource use provisions of PS3 were applicable to 33 (n=33/38) projects that involved feed or livestock production or processing operations.
- **Application of water use reduction hierarchy.** Out of the 33 projects to which the resource use provisions were applicable, 13 (n=13/33) projects demonstrated adherence to the requirement of applying the water use reduction hierarchy. Twelve (n=12/13) of these projects showed partial adherence by reporting only measures on reduce and recycle steps of the hierarchy. Only one (n=1/13) project reported measures to avoid the use of water (Requirement 3.1).
- **Compliance with benchmark levels of water use efficiency.** Out of the 33 projects to which the resource use provisions were applicable, eight (n=8/33) projects report that they achieve or exceed benchmark levels of water use efficiency. Five (n=5/33) projects report falling below relevant benchmarks. It should, however, be noted that this reflects the resource use status at the project approval stage, at the time of ESRS disclosure. The ESAP may have included measures to improve water use efficiency, and indeed, 16 (n=16/33) projects explicitly disclose such plans in their ESAP summaries. Twenty (n=20/33) projects did not report on compliance with water use efficiency benchmarks.
- **Compliance with benchmark levels of energy use efficiency.** Of the 33 projects to which the resource-use provisions applied, five (n=5/33) reported achieving or surpassing benchmark levels of energy efficiency, while three (n=3/33) reported falling short. However, this indicates non-compliance only at the time of project approval, when the ESRS was prepared. The corresponding ESAPs may include measures to address the gaps in energy use efficiency. Indeed, eleven (n=11/33) projects explicitly disclosed such plans. Twenty five projects (n=25/33) did not report on compliance with energy efficiency benchmarks.

Applicability and application of IFC PS3

IFC PS3 Applicable (No. of projects out of 38)	IFC PS3 Applied (No. of projects out of 38)	
	Yes	No
18	18	0

Client adherence to IFC requirements and recommendations on resource use: livestock production projects (n=18)

Requirement	Adherence (No. of projects out of 18)		
	High	Low	Zero
3.1 Apply water use reduction hierarchy to avoid causing water stress to third parties	1	7	10

Recommendation	Adherence No. of projects out of 18)			Planned in ESAP
	Yes	No	No Evidence	
3.1 Strive to achieve and exceed benchmark levels of water use efficiency	5	0	13	8
3.2 Strive to achieve and exceed benchmark levels of energy use efficiency	1	1	16	12

- **Application of resource use efficiency provisions**. Out of the 18 livestock production projects assessed, resource use provisions of PS3 were applicable to all (n=18/18) the projects.
- **Application of water use reduction hierarchy.** Eight (n=8/18) projects demonstrated adherence to the requirement of applying the water use reduction hierarchy. Seven (n=7/8) of these projects showed partial adherence by reporting only measures on reduce and recycle steps of the hierarchy. Only one (n=1/8) project reported measures to avoid the use of water. The remaining 10 (n=10/18) projects had no information in their ESRS of reporting on this requirement (Requirement 3.1).
- **Compliance with benchmark levels of water use efficiency.** Five (n=5/18) projects reported achieving or exceeding benchmark levels of water use efficiency. Eight (n=8/18) projects reported plans to improve water use efficiency (Recommendation 3.1).
- **Compliance with benchmark levels of energy use efficiency.** Only one (n=1/18) project reported that they achieve or exceed benchmark levels of energy use efficiency. One project, Ecuadorian shrimp producer and processor Omarsa farm, reported not achieving the energy use benchmark (n=1/18). The ESRS of Omarsa states "Electricity consumption is still above WBG EHS Guidelines for Fish Processing – Table 3". Twelve (n=12/18) projects reported plans to improve water use efficiency (Recommendation 3.2)

CONCLUSION

This assessment underscores a persistent gap between IFC's environmental safeguards and reported client adherence in industrial animal agriculture projects. Across biodiversity, pollution, and resource use, most projects either did not adhere to the requirements or failed to adequately disclose evidence of adherence.

The findings presented in this report are based solely on information disclosed in the Environmental and Social Review Summaries (ESRS) at the time of project approval. They reflect project risks, planned mitigation measures, and initial adherence to IFC requirements but do **not** assess whether future compliance was achieved through the implementation of Environmental and Social Action Plans (ESAPs). While ESAPs outline corrective actions and time-bound commitments, there is limited information in the public domain on whether these measures were fully implemented or effective. This lack of transparency and disclosure makes it difficult to evaluate actual environmental outcomes beyond the project approval stage and underscores the need for more robust, publicly accessible reporting on ESAP implementation.

On biodiversity, IFC's disclosures indicate that most projects offered little more than superficial habitat assessments, without providing the criteria or threshold analysis necessary to classify habitat type, and rarely demonstrated application of the mitigation hierarchy or robust supply chain safeguards. This is particularly concerning in this sector since the global food system is the primary driver of biodiversity loss (17).

On pollution, some projects reported exceedances of air emissions, wastewater and solid waste values from national or international standards, while many others reported no information on compliance with these standards. This is concerning since multiple active IFC agribusiness projects have official complaints lodged against them based on pollution impacts on local communities. However, there were a few that mentioned future plans of putting in place requisite equipment and infrastructure to manage pollution-related impacts.

On resource use, although some projects referenced efficiency measures, ESRS disclosures consistently show that very few provided adequate evidence of applying the full water-use reduction hierarchy or meeting benchmark levels for water and energy efficiency. This too is concerning as meat and dairy are estimated to be responsible for around a third to 40 per cent of agriculture's water demands. This is an inefficient use of a limited resource, especially given that animal products only provide 18 per cent of the world's calories [18].

These findings point to two interlinked problems evident in IFC's disclosure data: weak client adherence in practice and poor reporting of adherence. Even when companies may be implementing measures, the lack of transparent and verifiable disclosures prevents IFC and external stakeholders from confirming whether requirements are actually being met. IFC is also weak in not updating disclosures to "showcase" progress; the absence of progress reporting leaves both IFC and its clients fully exposed to the conclusion that no progress has been made. Without disclosure, accountability is effectively absent.

For IFC, this raises fundamental questions about the sustainability of financing industrial animal

agriculture. The institution's safeguards, though robust on paper, are weakened by inconsistent client adherence, limited disclosure, and the absence of verification (both at the time of ESRS disclosure and on an ongoing basis) or enforceable consequences. In effect, this amounts to managing reputational and compliance risks rather than addressing the deeper sustainability contradictions of supporting a sector that is a major driver of climate change, biodiversity loss, pollution, and resource depletion.

If IFC is to bring its investments in line with the World Bank Group's sustainability commitments and the planetary boundaries, a decisive course correction is urgently needed. This begins with a fundamental reassessment of whether industrial animal agriculture is compatible with sustainable development[12] at all, given its outsized contribution to climate change, biodiversity loss, and resource depletion. IFC must also require full, transparent, and timely disclosure of client compliance with environmental requirements so that progress can be independently assessed. Strengthened due diligence and independent verification processes are essential to move beyond reliance on self-reported data. Where clients fail to comply, IFC should enforce meaningful accountability mechanisms, including corrective action plans and consequences for non-compliance, to ensure that its safeguards carry real weight. Finally, IFC should shift its financial support toward food production models that are not polluting or extractive—models that can deliver food security without exacerbating the environmental crises we face.

PHOTO: Unsplash

ANNEX 1: REQUIREMENTS AND RECOMMENDATIONS SPECIFIED IN IFC'S ENVIRONMENTAL POLICIES

Biodiversity loss

Requirements and recommendations on biodiversity impact assessment

Requirement 1.1: Assess whether the operations of the project (or those of primary suppliers) poses risk to critical, natural or modified habitat

"Based on the risks and impacts identification process, the requirements of this Performance Standard are applied to projects (i) located in modified, natural, and critical habitats;" – **PS6 para 5**

"Where a client is purchasing primary production (especially but not exclusively food and fiber commodities) that is known to be produced in regions where there is a risk of significant conversion of natural and/or critical habitats, systems and verification practices will be adopted as part of the client's ESMS to evaluate its primary suppliers." – **PS6 para 30**

ZERO ADHERENCE – Client does not assess, and report overlap of the operations of the project or those of primary suppliers on critical, natural or modified habitat

LOW ADHERENCE – Client simply reports overlap of the operations of the project or those of primary suppliers with critical, natural or modified habitat without providing criteria and threshold analysis to determine whether the habitat was modified, natural or critical

HIGH ADHERENCE – Client reports overlap of the operations of the project or those of primary suppliers with critical, natural or modified habitat with detailed criteria and threshold analysis to determine whether the habitat was modified, natural or critical

BEST PRACTICE – Client reports overlap of the company's operations as well as primary and secondary suppliers with critical, natural or modified habitat with detailed criteria and threshold analysis to determine whether the habitat was modified, natural or critical

Requirements and recommendations on impact management

Recommendation 1.1: Apply the mitigation hierarchy

"As a matter of priority, the client should seek to avoid impacts on biodiversity and ecosystem services. When avoidance of impacts is not possible, measures to minimize impacts and restore biodiversity and ecosystem services should be implemented." – **PS6 Para 7**

"For the protection and conservation of biodiversity, the mitigation hierarchy includes biodiversity offsets, which may be considered only after appropriate avoidance, minimization, and restoration measures have been applied." – **PS6 Para 10**

Requirement 1.2: If the project is located in/impacts critical habitat, design mitigation measures to achieve net gain of biodiversity

"A biodiversity offset should be designed and implemented to achieve measurable conservation outcomes that can reasonably be expected to result in no net loss and preferably a net gain of biodiversity; however, a net gain is required in critical habitats." – **PS6 para 10**

ZERO ADHERENCE: Client reports no mitigation measures even when project is located in critical habitat

LOW ADHERENCE: Client reports mitigation measures to achieve a no net loss of biodiversity in when project is located in critical habitat

HIGH ADHERENCE: Client reports mitigation measures to achieve a net gain of biodiversity in when project is located in critical habitat

BEST PRACTICE: Client avoids siting project in critical habitat

Recommendation 1.2: If the project is located in/impacts natural habitat (devoid of any critical biodiversity values), design mitigation measures to achieve no net loss of biodiversity, where feasible.

"In areas of natural habitat, mitigation measures will be designed to achieve no net loss of biodiversity where feasible." – **PS6 Para 15**

"As described in paragraph 15 of Performance Standard 6, in all areas of natural habitat, regardless of the prospects of significant conversion and degradation, the client should design and implement mitigation measures to achieve no net loss of biodiversity, where feasible, through the application of various on-site and offset mitigation measures." – **Guidance Note 6, GN43**

Recommendation 1.3: If the project is located in/impacts modified habitat with significant (but not critical) biodiversity value, minimize conversion or degradation of habitat and find opportunities to enhance it

"This Performance Standard applies to those areas of modified habitat that include significant biodiversity value, as determined by the risks and impacts identification process required in Performance Standard 1. The client should minimize impacts on such biodiversity and implement mitigation measures as appropriate." – PS6 Para 12

"In areas of modified habitat, the client will exercise care to minimize any conversion or degradation of such habitat, and will, depending on the nature and scale of the project, identify opportunities to enhance habitat and protect and conserve biodiversity as part of their operations." - **Guidance Note 6, GN37**

Requirement 1.3: Mitigate supply chain risks

"Where a client is purchasing primary production (especially but not exclusively food and fiber commodities) that is known to be produced in regions where there is a risk of significant conversion of natural and/or critical habitats, systems and verification practices will be adopted as part of the client's ESMS to evaluate its primary suppliers. The systems and verification practices will... (iii) limit procurement to those suppliers that can demonstrate that they are not contributing to significant conversion of natural and/or critical habitats (this may be demonstrated by delivery of certified product, or progress towards verification or certification under a credible scheme in certain commodities and/or locations); and (iv) where possible, require actions to shift the client's primary supply chain over time to suppliers that can demonstrate that they are not significantly adversely impacting these areas." - **PS6 para 30**

"Before investing in a livestock operation, and as part of its due diligence, IFC undertakes a biodiversity risk assessment, including how the investee company identifies, traces, assesses, and manages risks in its direct operations and

supply chain. The risk assessment determines if livestock or feed grains originate from areas that risk significant conversion of natural and critical habitats. Based on the materiality of identified biodiversity risks, within 3 years IFC requires investee companies to:

- Mitigate the impacts of their operations and/ or develop a Sustainability Sourcing Policy. This includes establishing traceability and a supply chain management system of third- party suppliers of livestock and feed grains.
- Limit procurement to producers that can verify they are not causing significant conversion of natural and/or critical habitats or
- Remedy gaps where such verification is not presently possible, and do so in a timely manner that is protective of biodiversity or
- Shift sourcing to other producers or regions" – **SI Practices**

ZERO ADHERENCE: Client reports no mitigation measures when there is a risk of significant conversion of natural and/or critical habitats by primary suppliers

LOW ADHERENCE: Client reports plans to limit procurement to those suppliers that can demonstrate that they are not contributing to significant conversion of natural and/or critical habitats

HIGH ADHERENCE: The client reports plans to establish time-bound supply chain traceability and to permanently transition to suppliers—including those in other regions, if necessary—that can demonstrate they are not contributing significantly to the conversion of natural or critical habitats.

BEST PRACTICE: The client commits to establishing supply chain traceability for both primary and secondary suppliers and to permanently shifting to suppliers—including to those in other regions, if necessary—that can demonstrate they do not significantly contribute to the conversion of natural or critical habitats. The client also commits to zero-deforestation targets across its supply chains.

Pollution (Air emissions, wastewater, waste and pesticide use)

Requirements and recommendations on impact assessment

Requirement 2.1: Assess impact within the environmental context (e.g., ambient conditions, assimilative capacity, environmentally sensitive receptors) of the project including assessing cumulative impacts

"To address potential adverse project impacts on existing ambient conditions, the client will consider relevant factors, including, for example (i) existing ambient conditions; (ii) the finite assimilative capacity of the environment; (iii) existing and future land use; (iv) the project's proximity to areas of importance to biodiversity; and (v) the potential for cumulative impacts with uncertain and/or irreversible consequences." - **PS3, para 11**

"Large projects with potentially significant emissions and/or high impacts, however, may require monitoring of impacts on the surrounding environment (i.e., changes in ambient levels)" – **Guidance Note 3, GN1**

"Considerations should include background ambient conditions (that may occur due to natural and/or anthropogenic causes not related to the project), the presence of local communities, environmentally sensitive receptors (such as potable water supplies or protected areas), the expected project demand

for water, and the availability of waste disposal facilities. Potential for cumulative impacts should also be reviewed." **- Guidance Note 3, GN3**

"Receiving water use and assimilative capacity, taking other sources of discharges to the receiving water into consideration, should also influence the acceptable pollution loadings and effluent discharge quality." -

ZERO ADHERENCE: The client does not report whether the broader environmental context (ambient conditions) or cumulative impacts are considered during the assessment of the impact of pollutants and waste.

LOW ADHERENCE: The client reports considering either the broader environmental context (ambient conditions) or cumulative impacts when assessing the impact of pollutants and waste.

HIGH ADHERENCE: The client reports that both the broader environmental context (ambient conditions) and cumulative impacts are considered during the assessment of the impact of pollutants and waste.

BEST PRACTICE: The client reports that a wide range of parameters of the environmental context, including ambient conditions, assimilative capacity, and environmentally sensitive receptors, are considered during impact assessment, and that cumulative impacts are assessed. Where projected impacts exceed the finite assimilative capacity of the environment, projects should be subjected to a comply-or-explain standard that articulates how anticipated benefits outweigh negative impacts.

Requirements and recommendations on impact management

Recommendation 2.1: Ensure emissions don't reach or exceed relevant international and national guidelines and standards

"Projects with significant sources of air emissions, and potential for significant impacts to ambient air quality, should prevent or minimize impacts by ensuring that: Emissions do not result in pollutant concentrations that reach or exceed relevant ambient quality guidelines and standards by applying national legislated standards, or in their absence, the current WHO Air Quality Guidelines, or other internationally recognized sources" **– EHS Guidelines, 1.1 Air Emissions and Ambient Air Quality** [13]

Recommendation 2.2: Ensure wastewater discharge does not reach or exceed relevant international and national guidelines and standards

"Discharges of process wastewater, sanitary wastewater, wastewater from utility operations or stormwater to surface water should not result in contaminant concentrations in excess of local ambient water quality criteria or, in the absence of local criteria, other sources of ambient water quality" - **EHS Guidelines, 1.3 Wastewater and Ambient Water Quality** [14]

Recommendation 2.3: Ensure waste generation does not reach or exceed relevant international and national guidelines and standards

"The following Tables 2 and 3 provide examples of resource consumption indicators for energy and water, in addition to waste generation in this sector. Industry benchmark values are provided for comparative purposes only and individual projects should target continual improvement in these areas."[15]

"Tables 2 and 3 present information on resource use and waste generation in the dairy processing sector, which can be considered as indicators of this sector's efficiency and may be used to track performance changes over time."[16]

Resource use

Requirement 3.1: Apply water use reduction hierarchy to avoid causing water stress to third parties

"When the project is a potentially significant consumer of water...the client shall adopt measures that avoid or reduce water usage so that the project's water consumption does not have significant adverse impacts on others. These measures include, but are not limited to, the use of additional technically feasible water conservation measures within the client's operations, the use of alternative water supplies, water consumption offsets to reduce total demand for water resources to within the available supply, and evaluation of alternative project locations." – PS3, para 9

"When a project is a significant net consumer of water, or contributes to depletion of water resources to the extent that third parties' ability to access water is adversely affected, then the client shall reduce the project's water consumption to a level at which these adverse impacts are adequately mitigated, as determined by a suitable community engagement process. Actions that the client should consider to achieve this objective include but are not limited to re-siting of the project, additional resource efficiency measures within the project site (e.g., reverse osmosis-based water recovery, dry cooling), alternative provision of water, and water consumption offsets outside the project boundary." - Guidance Note 3, GN26

ZERO ADHERENCE: The client does not report whether it has applied the water use reduction hierarchy to minimize overall freshwater consumption

LOW ADHERENCE: The client reports having applied some of the steps of the water use reduction hierarchy

HIGH ADHERENCE: The client reports having systematically applied all the steps of the water use reduction hierarchy

BEST PRACTICE: The client prioritizes the avoidance of unnecessary water use, minimize consumption through efficient housing and cleaning systems, maximize on-site reuse and recycling of process water and effluents, and discharge treated wastewater only as a last resort

Recommendation 3.1: Strive to achieve and exceed benchmark levels of water use efficiency

"Industry benchmark values are provided for comparative purposes only and individual projects should target continual improvement in these areas." – **EHS Guidelines Meat Processing** [17]

Recommendation 3.2: Strive to achieve and exceed benchmark levels of energy use efficiency

"Industry benchmark values are provided for comparative purposes only and individual projects should target continual improvement in these areas." – **EHS Guidelines Meat Processing**

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ENDNOTES

[1] The nine processes that underpin Earth's stability, resilience to disruptions, and vital life-support functions.

[2] Breeding, hatching, feeding and fattening of animals up to the point of slaughter.

[3] Eutrophication is the process by which water bodies become overly enriched with nutrients, such as nitrogen and phosphorus, leading to excessive algal growth and oxygen depletion that harms aquatic life.

[4] This represents the latest five-year period for which data were available at the time this analysis was initiated. We judged five years to provide a sufficient, yet still recent, sample size for a substantive analysis.

[5] These 38 projects span the entire supply chain—from feed production to livestock production, processing, distribution, and retail.

[6] "Based on the risks and impacts identification process, the requirements of this Performance Standard are applied to projects (i) located in modified, natural, and critical habitats; (ii) that potentially impact on or are dependent on ecosystem services over which the client has direct management control or significant influence; or (iii) that include the production of living natural resources (e.g., agriculture, animal husbandry, fisheries, forestry)." - PS 6 Para 5

[7] This is the number of projects that applied the biodiversity conservation provisions of PS6.

[8] Demonstrating and documenting that each step has been completed in turn.

[9] A structured approach to managing biodiversity impacts that prioritizes first avoiding impacts on critical, natural, and modified habitats; then minimizing unavoidable impacts; restoring or rehabilitating affected ecosystems; and, as a last resort, implementing biodiversity offsets to achieve no net loss or a net gain of biodiversity.

[10] These are the 18 projects that involve on-farm activities including breeding, rearing, housing, feeding, watering, manure and wastewater management, and slaughter.

[11] A structured approach to water management that ranks strategies from most to least preferred—prioritizing source elimination (avoidance), followed by source reduction, then reuse/recycling, and finally discharge after treatment—to minimize overall freshwater consumption [13] .

[12] The World Bank has already documented the need for change in the agricultural and food system. "The world's food systems, which millions of people around the world rely on for nourishment, jobs and economic opportunities, are no longer fit for purpose"-Food Systems 2030, World Bank. See also Recipe for a Livable Planet: Achieving Net Zero Emissions in the Agrifood System (World Bank, 2024).

[13] Table 1.1.1 on WHO Ambient Air Quality Guidelines in EHS Guidelines, 1.3 Wastewater and Ambient Water Quality.

[14] Table 1 in EHS Guidelines each for Mammalian Livestock Production, Meat Processing, Poultry Processing and Dairy Processing respectively contains guidelines on effluent levels guidelines indicative of good international industry practice (GIIP) as reflected in relevant standards of countries with recognized regulatory frameworks.

Table 3 of EHS Guidelines for Dairy Processing also provides industry benchmarks for wastewater discharge.

[15] Table 2 of EHS Guidelines for Meat Processing provides industry benchmarks for waste generation in the meat processing sector.

[16] Table 2 of EHS Guidelines for Meat Processing provides industry benchmarks for waste generation in the dairy sector.

[17] Table 3 in EHS Guidelines Meat Processing and Dairy Processing present industry benchmarks for water, and energy consumption.