GLOBAL CAGE-FREE MARKETS:

Opportunities and Challenges for The Hospitality Industry

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Purpose and Use of This Report

This report was commissioned by the World Sustainable Hospitality Alliance (WSHA) to support informed discussion and learning among its members regarding cage-free egg sourcing across global hospitality markets. The analysis is intended to provide an independent, evidence-based overview of market conditions, supply-chain dynamics, and stakeholder perspectives.

The findings, interpretations, and conclusions expressed in this report are those of the authors and do not necessarily reflect the views, positions, or policies of WSHA or any individual member company.

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The report draws on a combination of publicly available sources and aggregated, anonymized information shared voluntarily by participating organizations. No company-specific, commercially sensitive, or identifiable data are disclosed. Any examples or figures are illustrative and should not be interpreted as benchmarks or targets for individual companies.

Limitations

Market conditions, regulatory frameworks, and supply-chain dynamics vary significantly across regions and may change over time. The analysis reflects conditions and information available during the research period and may not capture subsequent developments. Readers are encouraged to seek updated information and independent advice when making decisions.

Executive Summary

This research examines how global hospitality companies are navigating the transition to cage-free egg sourcing in global markets. While public commitments to cage-free sourcing are now widespread, progress varies substantially across countries and regions due to differences in regulation, supply-chain capacity, procurement structures, and the allocation of purchasing authority across business models, particularly in franchisor–franchisee structures. In some markets, cage-free eggs are widely available and routinely sourced; in others, physical supply remains limited, prohibitively expensive, or operationally difficult to access. Whether corporate commitments translate into practice depends fundamentally on where cage-free sourcing is feasible today and where structural constraints persist.

This research is structured in two phases. Phase 1, documented in this report, focuses on diagnosing why these differences arise and which constraints shape outcomes in practice. We combine global regulatory and production evidence with confidential interviews with hotel groups, purchasing organizations, and animal-welfare groups (AWGs), alongside a market-level analysis of selected focus countries (France, the United States, Brazil, Indonesia, China, Japan, India, Morocco, and Mexico). The objective is diagnostic: to identify where cage-free sourcing is currently feasible, where constraints persist, and why. A potential Phase 2 will build on these findings to design practical, market-specific solutions and procurement guidance tailored to different hospitality business models and sourcing environments.

Across markets, six findings emerge:

- **Consumer demand plays a limited direct role in hospitality egg sourcing.** Unlike retail settings, hospitality firms act as intermediaries rather than final-choice environments, meaning guests typically do not directly observe, compare, or select egg production methods. As a result, cage-free adoption in hospitality is driven primarily by regulation, procurement structures, cost constraints, and supplier availability rather than by consumer demand signals.
- **Corporate cage-free commitments are set at the global level, but hospitality adoption depends on national regulatory environments.** Regulations create the conditions for cage-free supply to exist and scale. In regions/countries such as Western Europe and parts of the United States, regulations, including cage-free mandates and bans on battery cages, have supported the development of stable and more readily available cage-free supply, which is associated with higher adoption within the hospitality sector. In much of Asia, Africa, and Latin America, cage-free eggs remain limited in availability or difficult to source at scale, and adoption has correspondingly been more constrained.
- **Hospitality cage-free sourcing and adoption is constrained by supply availability.** Product availability varies across regions and countries, driven by differences in production capacity, verification systems, and distribution infrastructure, which in turn shape sourcing feasibility and procurement costs. In markets such as Western Europe and the United States, where production capacity and verification systems are more developed, cage-free shell egg-sourcing is widely available or actively expanding with moderate price premiums, but liquid and processed egg products remain more constrained. Many markets in Latin America and parts of Asia remain the most constrained by limited production capacity, fragmented distribution, and undeveloped verification systems, restricting near-term sourcing options even where corporate commitments exist. In Africa, cage-free sourcing remains at a pre-transition stage, largely due to the absence of cage-free egg production capacity.

- **Hospitality adoption depends critically on operational and procurement conditions, including egg format, price premiums, and purchasing coordination.** Liquid and processed eggs are operationally important for hotels but remain difficult to source in cage-free form than shell eggs in many markets. Decentralized and fragmented purchasing—across brands, properties, and franchisees— while centralized procurement, menu adjustments, and supplier coordination support greater adoption.
- **Financing constraints and risk allocation are key operational barriers to cage-free production**. Transition costs, including retrofitting, production downtime, and compliance investments, are substantial and often require multi-year commitments to secure financing and justify investment, slowing supply expansion. While hospitality firms are not responsible for production investment, procurement practices influence supplier risk: demand for multiple egg formats and specifications, combined with short-term contracts and decentralized purchasing across buyers, increases uncertainty for producers and reduces investment incentives. Centralized procurement, longer-term contracts, and volume commitments can help reduce investment risk and support expansion where supply chains exist.
- **Limited data on cage-free adoption and gaps in reporting lead to delayed or conservative adoption.** In several regions and countries, hotels lack the ability to distinguish cage-free from conventional purchases, track certification status, or aggregate sourcing data across suppliers and egg formats. This lack of visibility constrains firms' ability to monitor progress, assess feasibility, benchmark across markets, and plan phased transitions. These challenges are especially pronounced in countries without regulatory reporting requirements or standardized verification frameworks.

Taken together, the Phase 1 findings show that cage-free adoption in hospitality is not demand-driven. Instead, it is shaped by regulatory environments; enabled or constrained by supply availability; slowed by financing and risk; conditioned by operational feasibility; and governed by information and verification systems. Variation in these factors across markets explains why cage-free sourcing is readily implemented in some regions but remains limited or infeasible in others. In many countries, cage-free supply chains are still underdeveloped or absent altogether, meaning hospitality firms cannot source cage-free eggs at scale because the necessary production, verification, and distribution systems are not yet in place.

Within these constraints, hospitality companies are not responsible for creating cage-free supply and lack the capacity to do so on their own; rather, their role is to use and support supply where it exists. They can nonetheless support transitions through procurement coordination, supplier engagement and education, menu adjustments, and phased implementation strategies.

Future phase will build on these findings to examine how hospitality companies can support cage-free transitions under different market conditions. It will develop market-specific implementation pathways and identify practical tools that help hospitality firms navigate regulatory, verification, and supply constraints. Drawing on science-based evidence, future phase will evaluate a range of solutions discussed by AWGs, policymakers, and hospitality companies, including procurement strategies, cage-free credit mechanisms, education and capacity-building initiatives, and approaches for engaging with local cage-free producers where supply exists. The objective is to translate corporate commitments into durable sourcing outcomes where supply chains are in place, while clarifying realistic roles and expectations in markets where cage-free supply remains underdeveloped.

Meet the Team

Dr. Vincenzina Caputo is an agricultural and food economist. She serves as a Professor and the Homer Nowlin Endowed Chair in Consumer and Food Economics in the department of Agricultural, Food, and Resource Economics at Michigan State University (MSU). She is the Director of the Food Choice & Policy Lab, where she leads a research program that integrates economics, behavioral science, and policy analysis to examine how consumers and decision-makers make food, management, and policy choices, and how these choices impact the food systems, supply chains, and policy. Her work translates empirical evidence into practical recommendations for farmers, retailers, foodservice operators, manufacturers, consumers, and policymakers, and her expertise is frequently sought by industry leaders and policy institutions to inform strategic decisions and address sector-specific challenges.

Her research is supported by a range of public, industry, and commodity partners, including the National Science Foundation, the U.S. Department of Agriculture, the Food Industry Association, Farm Foundation, and commodity organizations such as the United Egg Producers and the United Soybean Board, as well as regional partners including the United Dairy Industry of Michigan and Michigan Alliance for Animal Agriculture, among others. Her work has been published in leading journals, including *Nature Food*, *American Journal of Agricultural Economics*, *Journal of Economic Behavior & Organization*, *Economic Inquiry*, *European Review of Agricultural Economics*, and *Food Policy*, among others. She serves on the board of directors of the Agricultural & Applied Economics Association and board of directors of the International Consortium on Applied Bioeconomy Research. She serves as one of the editors-in-chief of the *European Review of Agricultural Economics,* and she is the director of the Survey Design and Experimental Methods in Applied and Agricultural Economics international workshop at MSU.

Dr. Jiayu Sun is a Post-Doctoral Research Associate at the Food Choice & Policy Lab at Michigan State University. She earned her Ph.D. in Agricultural Economics from Michigan State University in 2024. Her research applies a wide range of methods, including economic experiments, large-scale surveys, econometrics, big data, and machine learning, to address key societal challenges in food systems. Her research has been published in leading academic journals, including the *American Journal of Agricultural Economics*, *Food Policy*, and *Applied Economic Perspectives and Policy*, among others. Currently, she is working on the USDA-NIFA-funded MealClick project, where she uses real incentivized basket-based choice experiments to study consumer demand in online food-away-from-home environments and to evaluate policy and industry tools designed to promote healthier food choices.

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Introduction

In recent years, many major hotel groups[1] have set time-bound commitments to transition to 100 percent cage-free sourcing (Chicken Watch, 2025), mirroring earlier pledges adopted by large food retailers such as Walmart (Walmart, 2025), Kroger (The Kroger Family of Companies, 2022), Aldi (Aldi, 2024), Carrefour (Carrefour Group, 2022), as well as food manufacturers like Nestlé (2017). However, while according to Open Wing Alliance cage-free eggs have become a visible indicator of responsible sourcing across the global food industry (Open Wing Alliance, 2025), the channels through which such commitments emerge differ between hospitality and other sectors. Unlike supermarkets, for example, where consumer demand plays a driving role in cage-free egg adoption as shoppers compare and select production methods, consumers typically do not choose hotels based on egg-sourcing practices in hospitality. As a result, commitments in the hospitality sector are less linked to consumer demand and more influenced by expectations promoted by animal-welfare organizations (AWOs) across the food supply chain.

Some of these challenges are specific to the hospitality sector. A central issue is that commitments are set globally, while supply availability, regulation, certification systems, and pricing dynamics remain local and vary widely across regions in which hospitality operators operate. Operators in Europe generally face fewer constraints, as cage-free supply chains are relatively well established and supported by regulation and strong retailer standards (The Humane League, 2024), with operators in North America and parts of Latin America encountering similar conditions (The Humane League, 2024). Operators in much of Asia, the Middle East, and Africa often face more binding constraints, as egg production continues to rely largely on conventional cage systems, certified cage-free suppliers may be limited or absent, and price premiums, where supply exists, can be significant (The Humane League, 2024). As a result, many companies may meet cage-free goals in one region yet face limited access in another, creating operational, financial, and reputational risks.

Other challenges are not unique to hospitality and resemble those faced by retailers and other food-sector buyers. Cost and demand considerations play a key role in shaping the feasibility of transitioning to cage-free sourcing. Cage-free eggs typically involve higher production and procurement costs (Caputo et al. 2023), and evidence from consumer markets shows that price sensitivity can limit the extent to which these premiums can be absorbed (Caputo et al. 2025; Caputo et al. 2023). While hospitality differs from retail, similar pressures apply: eggs are purchased in high volumes, used across multiple service lines, and managed within tight budget constraints. In markets with established supply, higher costs can slow adoption; in markets with limited supply, cage-free sourcing may not yet be operationally feasible.

This research is designed to support the hospitality sector in navigating the transition. The reporting is organized in two phases. **Phase 1 (this report)** is diagnostic: it maps the global cage-free landscape for hospitality and explains why progress differs across markets, formats, and hotel business models. It identifies where cage-free sourcing is operationally feasible today, where constraints remain binding, and which gaps (e.g., production, certification, processing,

[1]EggTrack appears to be one of the largest publicly available databases of company commitments and progress to cage-free eggs, however its latest report is for 2023 (see EggTrack - Better welfare for egg laying hens), and some companies interviewed as part of this research noted it didn't fully reflect their current position.

distribution, or pricing) most often limit execution. **Future phase (next stage)** will move from diagnosis to implementation, using the Phase 1 evidence to design and test market-specific procurement pathways and transitional solutions (including when and how tools such as cage-free credits can credibly complement physical sourcing).

This Phase 1 report is structured as follows.

- **Chapter 1** establishes the global context for cage-free sourcing in hospitality by reviewing production systems, certification programs, regulatory adoption, private-sector commitments, and the supply-chain conditions that determine feasibility across regions, including constraints at the producer, midstream, and demand levels.

- **Chapter 2** provides country-level market assessments, drawing on confidential stakeholder interviews with hospitality companies and AWOs, complemented by publicly available data. This chapter examines how cage-free transitions unfold in practice across nine focus markets and classifies them by transition stage, distinguishing mature transition markets (France and the United States), early-to-active transition markets (Brazil, Indonesia, China, Japan, India, and Mexico), and a pre-transition market (Morocco).

- **Chapter 3** reports additional cross-cutting perspectives from animal-welfare organizations and hotel companies, documenting areas of agreement and misalignment and translating these insights into procurement-relevant implications. In doing so, it identifies priority focus areas for future phases, including constraints related to physical supply availability, procurement design and execution, data visibility and reporting, and the potential role of solutions such as cage-free credit mechanism, contracting and risk-sharing arrangements, internal coordination across managed and franchised properties, product-format strategies, and governed transitional mechanisms.

Methodology and Data

The analysis underlying this **Phase 1** report combines global evidence, market-specific data, and insights from practitioners across the hospitality supply chain. Because data availability varies substantially across countries, particularly in emerging and pre-transition markets, the approach draws on multiple complementary sources. The methodology is designed to support a diagnostic assessment of cage-free sourcing in hospitality and to inform the design of implementation-focused research in future phase. The analysis operates at two connected levels. First, a global evidence base informs **Chapter 1**, which establishes the structural context for cage-free sourcing. Second, market- and firm-level evidence informs **Chapters 2 and 3**, which examine how cage-free transitions unfold in practice across countries and hotel business models.

Chapter 1 relies mostly on existing global evidence. The research team conducted extensive analysis drawing on (i) government statistics, (ii) academic studies, including producer surveys and consumer willingness-to-pay research, (iii) certification and housing-standard documents, (iv) AWG and industry reports, (v) regulatory assessments, and (vi) market analyses from global suppliers. These sources provided the foundation for describing global production systems, regulatory trends, pricing dynamics, corporate commitments, and structural supply-chain constraints.

Chapters 2 and 3 integrate existing evidence with new information generated through this project. Country-level market assessments draw on confidential procurement and internal reporting data shared by member companies of the World Sustainable Hospitality Alliance, including information on egg product formats, sourcing volumes, pricing, supplier availability, and progress toward cage-free commitments. These data are complemented by targeted, semi-structured interviews with seven hotel groups and three AWGs.

The seven hotel groups include diverse market segments, ranging from economy to luxury, and represent diverse ownership and operating models: three primarily franchised portfolios, one fully managed portfolio, one mixed franchised–managed portfolio, and two portfolios that include franchised, managed, and owned properties. Across these hotel groups, the research team interviewed 12 professionals, including six sustainability and environmental leads, three food and beverage sourcing leads, two procurement leads, and one cooperative lead. Among the three AWGs, two focus on animal welfare broadly, while one specializes in cage-free egg production and sourcing.

All interviews were conducted remotely via Zoom in December 2025. Interview insights were particularly important for validating market-level assessments in regions where publicly available data are limited and for identifying priority constraints and solution pathways to be examined in future phase, including supply availability constraints, procurement design challenges, reporting and data visibility gaps, and the potential role of transitional tools.

Chapter 1. Global Landscape and Foundations

Summary

Chapter 1 provides the global context for cage-free sourcing in the hospitality sector. It reviews the production systems, certification frameworks, regulatory environments, and private-sector commitments that define cage-free egg markets worldwide. The chapter finds substantial variation across regions in how cage-free sourcing is defined, regulated, and implemented.

The analysis shows that regulatory mandates in Western Europe and parts of the United States have supported the development of stable cage-free supply, while many other regions rely primarily on voluntary commitments and third-party certifications, resulting in more limited availability. The chapter also documents a mismatch between where eggs are produced globally and where cage-free systems are most prevalent, complicating sourcing for hospitality companies operating across multiple markets. In addition, it shows that constraints extend beyond farm-level production: midstream processing, distribution capacity, and product-format availability play a central role in determining whether cage-free eggs can be sourced reliably for hospitality use.

1.1. Foundations of Cage-Free Sourcing

Cage-free sourcing is defined through a combination of government regulation, third-party certification, and, in some markets, industry-led standards. Some countries specify minimum legal welfare requirements, while others rely on voluntary certification programs to verify space allowances, nest box ratios, and behavioral enrichments. These differences influence how "cage-free" is interpreted across regions and affect availability, pricing, and procurement risk. The sections below outline the core production systems and certification frameworks that underpin cage-free sourcing globally.

Housing Systems

Egg production systems fall broadly into two categories: cage systems and cage-free systems (See **Figure 1**). These differences translate into variable sourcing feasibility, pricing pressures, and operational risk.

Cage systems include battery cages and enriched cages. Battery cages confine hens in small wire enclosures and remain widely used in major producing countries such as the United States and China, where roughly 70 percent of laying hens are housed in these systems (Mendez and Peacock, 2022). Battery cages were banned in the European Union in 2012. Enriched cages provide slightly more space and limited enrichments such as perches and nest boxes, but the European Commission has indicated plans to propose legislation to phase out cages, with a possible entry into force from 2027 (European Union External Action Service, 2021). The United States has no federal standards governing cage enrichments, and China likewise lacks national legislation on laying-hen housing (Williams, 2022).

Cage-free systems include aviary barns, single-level floor systems, and free-range systems that provide outdoor access. Designs vary, but all cage-free barns share the absence of cages and the ability for hens to move, perch, nest, scratch, and dustbathe. Cage-free does not imply outdoor access; outdoor access is typically required only under free-range standards when verified by third-

party certification programs such as Certified Humane and American Humane. These housing distinctions underpin corporate cage-free commitments and shape supply availability, pricing, certification requirements, and compliance frameworks across markets.

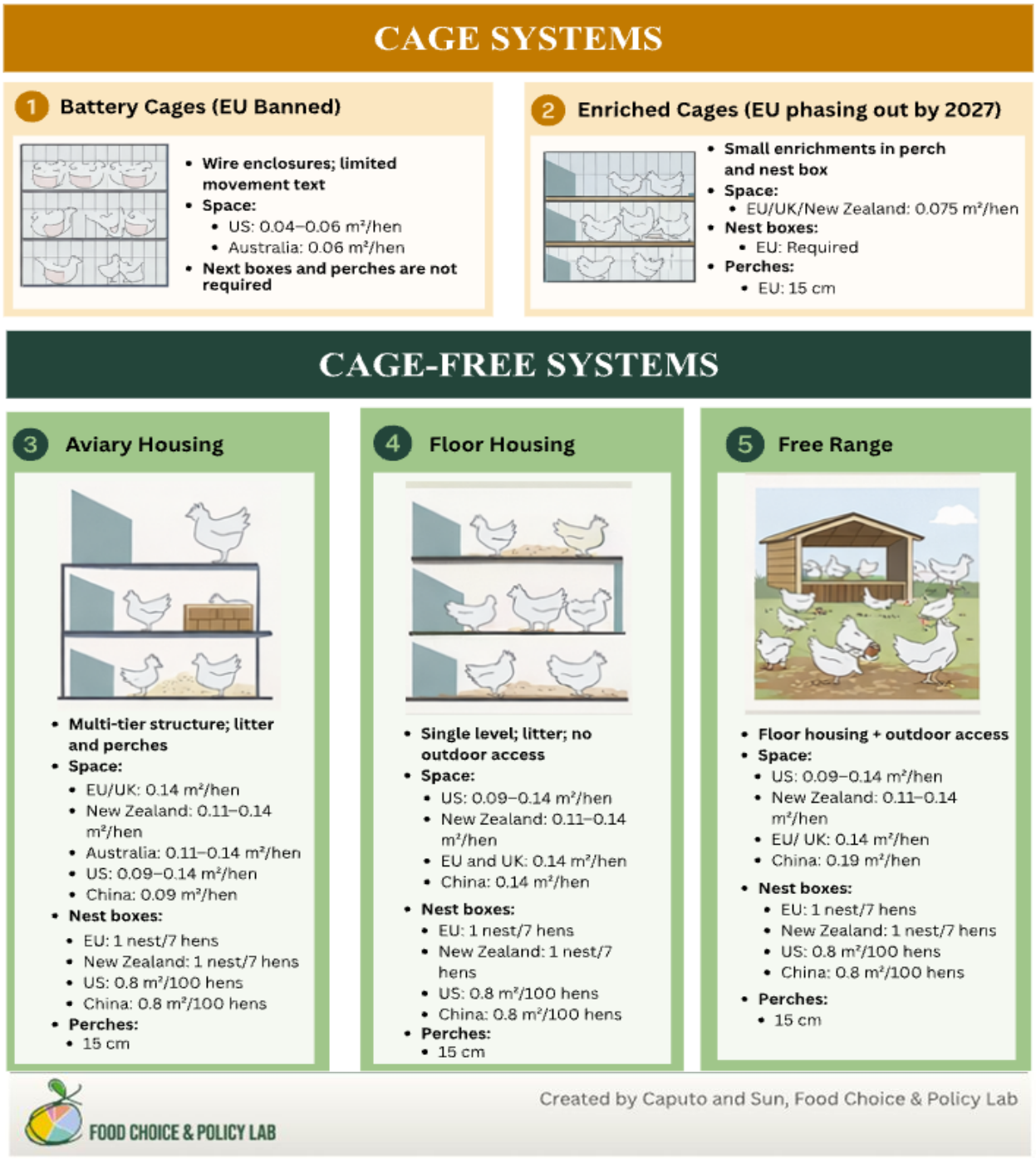

Figure 1. Housing systems and standards for egg-laying hens. **Source:** Authors' classification based on Windhorst, Hans-Wilhelm (2017); CWIF (n.d.); EUR-Lex (2019). **Note:** Space requirements are reported as specified in national regulations or certification standards and are not directly comparable across jurisdictions due to differences in measurement conventions (e.g., hens/m² vs. m²/hen). Housing systems should not be interpreted as a linear ranking of animal

welfare; other dimensions, such as food safety, environmental impacts, and worker health, also matter (Coalition for Sustainable Egg Supply, 2015).

Quality Standards & Certifications

Certification programs translate cage-free housing standards into verifiable welfare requirements in select markets. Major programs include American Humane Certified, UEP Certified Cage-Free, Certified Humane, CertifiedGAP, and Animal Welfare Approved (see **Table 1**).

Table 1. Summary of Cage-Free Certification Standards

Certificate	Geographical Coverage	Space (m²/hen)	Individual Nestboxes (hens/box)	Community Nestboxes (cm²/hen)	Perches (cm/hen)
American Humane Certified		0.09-0.14	5-7.	84	15
UEP Certified Cage-Free		0.09-0.14	5	84	15
Certified Humane		0.09-0.14	5	84	15
Certified GAP		0.14	6	92	12.5
Animal Welfare Approved		0.17	5	129	18

Created by Caputo and Sun, Food Choice & Policy Lab

Most programs require 0.09–0.14 m² per hen, specific nest box ratios, and 12–15 cm of perch space, although Animal Welfare Approved sets notably higher standards (0.17 m² per hen; 18 cm perches). Geographic reach varies considerably. UEP Certified Cage-Free and CertifiedGAP operate only in the United States. Animal Welfare Approved covers farms in the United States (100 farms) and Canada (8 farms). American Humane Certified covers farms in the United States (52), Canada (4), Lithuania (1), and Colombia (1). Certified Humane has the broadest global coverage, certifying farms across North America (e.g., United States, Canada), Latin America (e.g., Mexico, Argentina, Brazil, Chile, Colombia), Asia (e.g., India, Indonesia, Japan, Malaysia, Thailand, Vietnam), Oceania (Australia and New Zealand), and Europe (Türkiye) (Certified Humane, Global Impact).

These certifications complement regulations by providing consistent benchmarks in markets where legal definitions of cage-free are absent or incomplete, helping hospitality buyers harmonize procurement criteria across regions.

1.2 Global Production and Regulation

Global Production Patterns

Progress toward cage-free production remains variable across countries (see **Figure 2**). The world's largest egg producers (such as China, the United States, India, Indonesia, and Brazil (Global Coalition for Animal Welfare, 2023), account for the majority of global output but have relatively low cage-free shares.

China produces 40% of the world's eggs yet has only about 10% cage-free production. India, Indonesia, Brazil, and Mexico range between 5% and 10 %. The United States has made more progress, reaching roughly 35-40% Global Coalition for Animal Welfare, 2023). Countries with the highest cage-free shares, such as Germany (95%), the Netherlands (92%), France (65%), Italy (64 %), the United Kingdom (62%), Nigeria (50 %), and Egypt (50%), represent only around 6% of global egg output (Global Coalition for Animal Welfare, 2023). This mismatch between where eggs are produced and where welfare-focused systems are widespread poses a challenge for hospitality companies seeking consistent sourcing across markets.

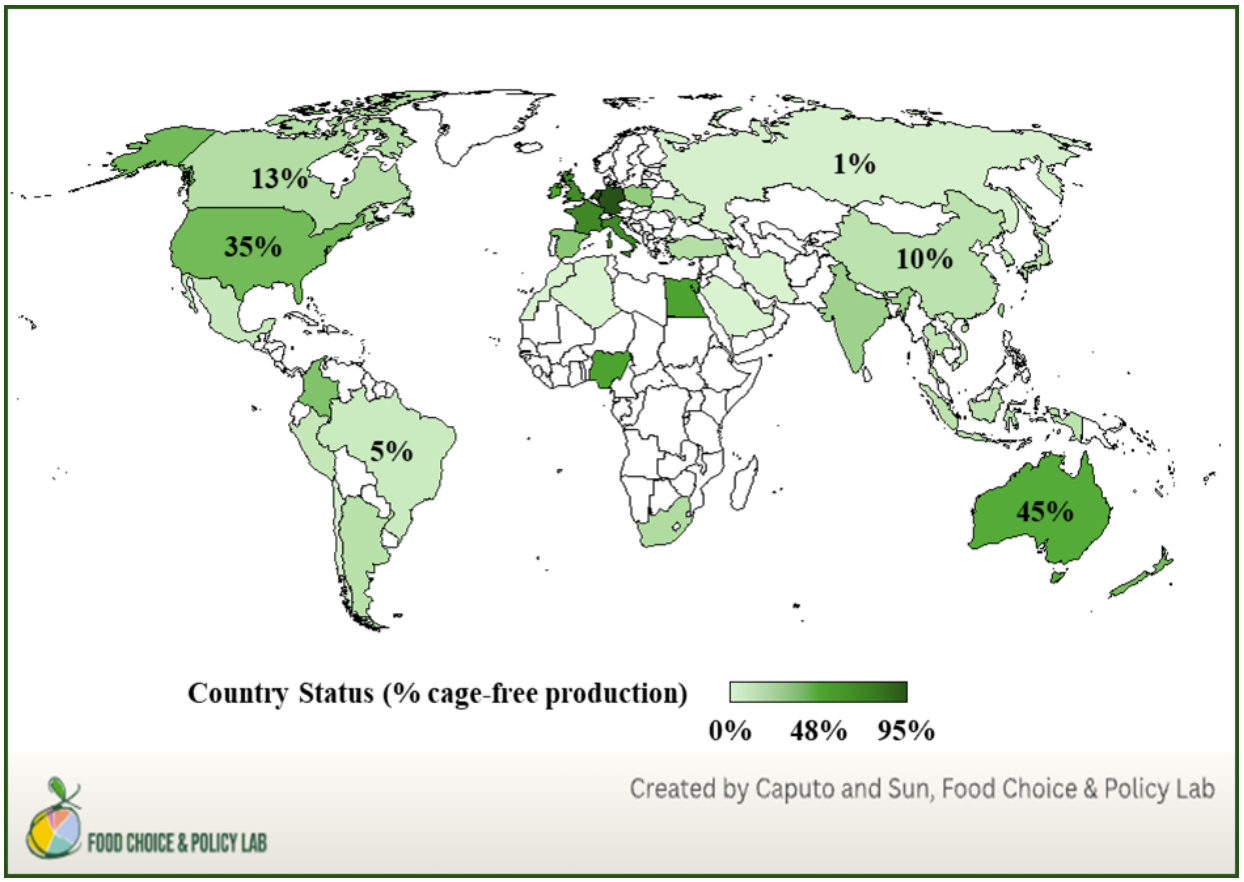

Figure 2. Share of Cage-free egg production across countries (% cage-free). **Data Source:** Global Coalition for Animal Welfare (2023)

Regulatory Systems and Cage-Free Adoption

In addition to the differences in cage-free eggs production across revisions and countries illustrated in Figure 2, Figure 3 also compared cage free production with existing regulations and cage free adoption by the hospitality sector. Three main findings emerge:

- **Regulatory systems vary across regions and countries, and the existence of animal welfare regulations is one of the strongest drivers of cage-free adoption**.

Bans on cage egg production (either total or battery-cage bans) are concentrated primarily in Europe, the United States, and Australia and New Zealand, while such regulations remain largely absent in CALA, Asia, and Africa. More specifically, the European Union banned barren battery cages in 2012 and is phasing out enriched cages by 2027, resulting in stable and widely available cage-free supply (EUR-Lex, 2019; ECI, 2021). In the United States, ten states have enacted cage-free laws governing production, sales, or both, with California's Proposition 12 accelerating national transition (California's Proposition 12). Cage-free supply chains across these regions are mature, stable, and widely accessible to hospitality operators.

Across Asia, regulatory frameworks are highly fragmented and cage-free adoption depends on voluntary commitments and private-sector investment. China and Japan have no national cage-free mandates and shifts toward cage-free systems are primarily market driven (The Humane League, 2024; Yang et al., 2025). Taiwan, Indonesia, and Thailand have introduced welfare standards and are seeing early adoption (The Poultry Site, 2020; WattPoultry, 2021; Feed Additive, 2025), while Israel adopted a nationwide phase out of cages for laying hens in 2022 and, once implemented in 2037, would become the only country in the region with such a ban (Government of Israel, 2022).

Latin American markets rely primarily on private-sector commitments, with Colombia as a significant outlier showing high adoption (The Humane League, 2024). Across Africa, approximately 39% of eggs already come from non-cage systems due to smallholder, backyard production, not regulated cage-free barns (The Humane League, 2024). No major cage-free laws exist, though foodservice companies are beginning to influence sourcing patterns voluntarily (The Humane League, 2024).

- **In regions and countries where cage free eggs are available, the adoption rates are high. These regulatory-pioneering regions also exhibit higher levels of cage-free egg production and adoption. In contrast, cage-free production and adoption remain limited across much of Asia, Africa, and CALA**.

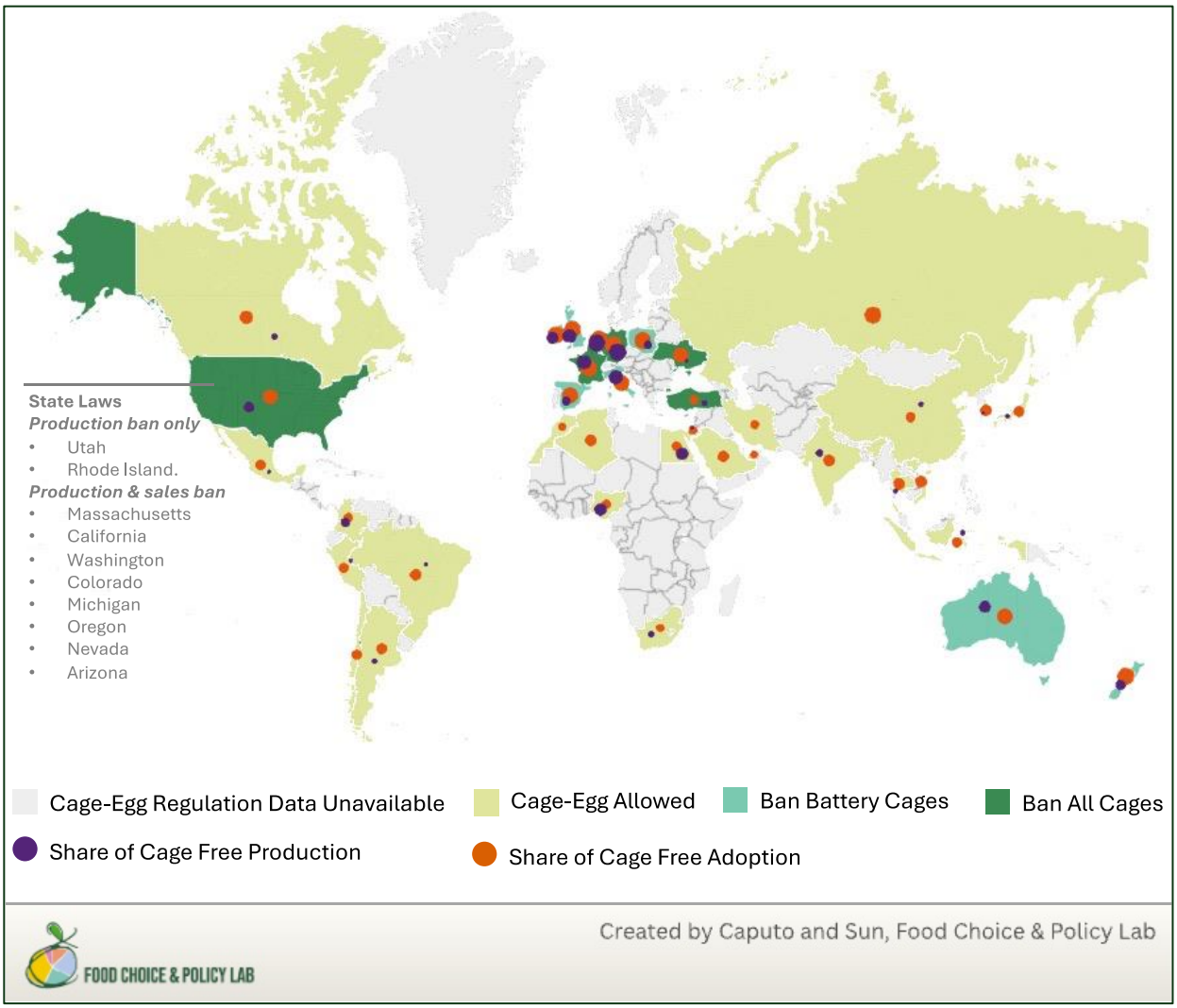

Figure 3. Global distribution of cage-egg production regulations, cage-free egg production, and cage-free adoption. **Notes**: 1) Information on cage-egg production regulations and cage-free egg production is drawn from the Global Coalition for Animal Welfare (2023). Cage-free adoption shares represent average adoption levels across multiple hotel groups within each country or region (internal data). 2) Circle size represents the share of cage-free egg production or adoption; larger circles indicate higher shares. 3) In the United States, cage-egg production bans apply at the state level and are currently in effect in 10 states (see Table 3).

Private-Sector Commitments and Hospitality Adoption

Given the scarcity of regulatory mandates across most regions, private-sector commitments remain major force shaping global demand for cage-free eggs. As of 2025, 2,816 companies worldwide have pledged to transition to cage-free sourcing, including restaurants, manufacturers, retailers, hospitality groups, foodservice companies, producers, and distributors (Chicken Watch, 2025). Europe leads with 1,458 commitments, followed by North America (611), Latin America (600), Asia (376), Oceania (178), and Africa (178). Within hospitality specifically (see **Figure 4**), commitments number 136 in Europe, 71 in Asia, 61 in Latin America, 52 in Africa, 47 in North

America, and 30 in Oceania, with further expansion expected by 2030. These pledges send strong market signals and elevate demand pressure, particularly in regions where regulated supply remains limited.

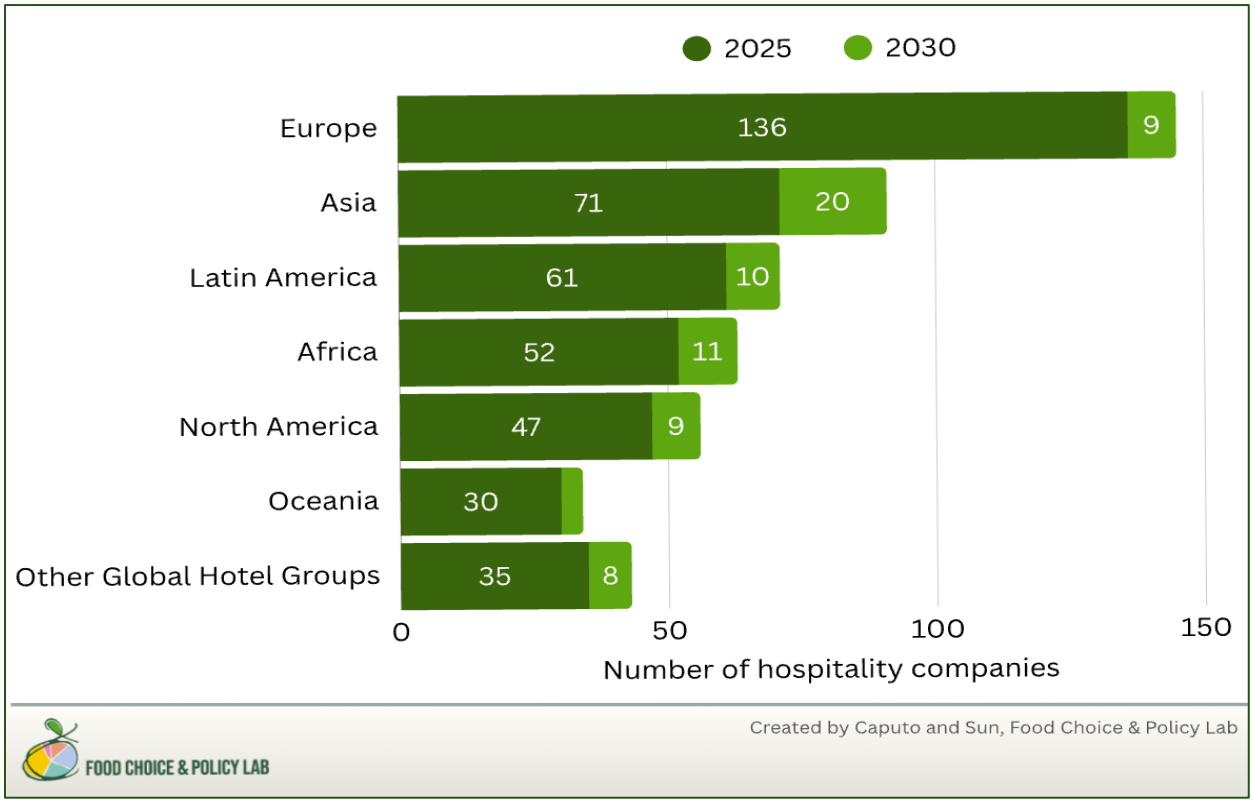

Figure 4. Number of hospitality companies committed to cage-free sourcing, by target fulfillment year (2025 and 2030). **Data Source:** Chicken Watch, 2025. **Note:** This figure reports statistics for the regions where cage-free sourcing commitments are intended to be achieved, rather than the locations of company headquarters.

To complement these public commitments, this analysis also draws on confidential internal reporting and procurement data shared by a group of global hospitality brands. These data provide portfolio-level cage-free sourcing percentages by country and region. For commercial and privacy reasons, results are presented only in aggregated form and are not attributed to individual companies.

Across portfolios, cage-free adoption broadly mirrors the geographic distribution of commitments shown in **Figure 4**, but actual progress depends on local supply conditions. Europe, North America, and Oceania exhibit the most advanced transitions, supported by mature supply chains, regulatory requirements, and accessible certification. In many of these markets, cage-free sourcing can now exceed 80-90% in managed hotels, and numerous properties have fully or nearly fully transitioned. By contrast, cage-free sourcing rates in franchised hotels remain substantially lower, typically around 30–50% in these regions, except in Europe, where adoption exceeds 90%. Adoption remains much lower in Asia, Latin America, the Middle East, and Africa, where cage-free eggs often account for less than half of hotel purchases and, in some countries, remain near

zero. These outcomes reflect limited certified supply, higher price premiums, and fragmented distribution networks, even when brand-level commitments are strong.

Where cage-free eggs are available, transitions follow predictable patterns. Markets with regulatory mandates or strong retailer-driven standards progress most rapidly. Voluntary, industry-led markets evolve more slowly, often beginning in major cities or upscale segments. Countries with little or no cage-free production face the highest barriers: many East and Southeast Asian markets report cage-free shares of 0–30%, while much of Latin America and the Caribbean ranges between 20–60%, depending on supplier development.

Hotel ownership structure and the hotel chain business model also shape adoption. Many global hotel brands represent a mix of managed and franchised hotels. In limited cases, brands may own hotels directly, but in most instances both managed and franchised hotels are owned by third parties. Hotel ownership itself varies widely, from large real estate investment companies to individual owners with a single property. While the hotel operator typically sets purchasing standards for the hotels it manages, owners may also influence purchasing decisions. In franchised hotels in particular, purchasing decisions may be shaped by multiple parties, including the brand, the operator, and the owner. Global hotel brands have varying levels of presence by country, which also influences how supply chains are structured in each case. Across all scenarios, the local hotel team often executes the actual purchasing and plays a critical role in product selection – particularly for fresh food and beverage items that require real-time judgement based on business needs, availability, and local market conditions, all while balancing those with the brand's global goals.

Hotels managed by the brands with cage-free egg goals often transition faster due to more visibility into the hotels' purchasing practices to help reinforce compliance, though this visibility is not uniform and can remain limited in some regions, constraining monitoring and compliance even within managed properties. In some markets, there can even be centralized procurement with standardized supplier contracts. Hotels that are outside of a structured procurement framework rely on local sourcing and therefore face greater exposure to supply constraints and price premiums, leading to visible differences in progress within the same brand. Aggregated portfolio averages reported through internal documents show substantial overall progress; many global brands report 60–80% cage-free sourcing across managed properties. However, there is significant market-level variation. Several regions/countries remain below 50%, such as Southeast Asia, Central America and Latin America, China, Japan, and Korea, and some have not begun the transition, such as Middle East and Africa. Even in regions with momentum, sourcing conditions vary widely across cities and suppliers due to inconsistent certification availability, distribution capacity, and local pricing. Cage-free sourcing rates are substantially lower in franchised properties. In most regions, franchised hotels report cage-free egg sourcing rates that are approximately 20–50 percentage points lower than those of managed properties within the same region (e.g., the United States, Australia, Japan, South Korea, Southeast Asia, the United Kingdom, and Canada). In contrast, cage-free sourcing rates are broadly comparable between managed and franchised hotels in China, Europe, the Middle East, and Africa.

1.3. Supply-Chain Constraints

The transition to cage-free sourcing is shaped not only by regulation and corporate commitments but by structural constraints across the egg supply chain (see **Figure 5**). These arise at the producer level, in midstream processing and distribution, and at the point of consumer demand.

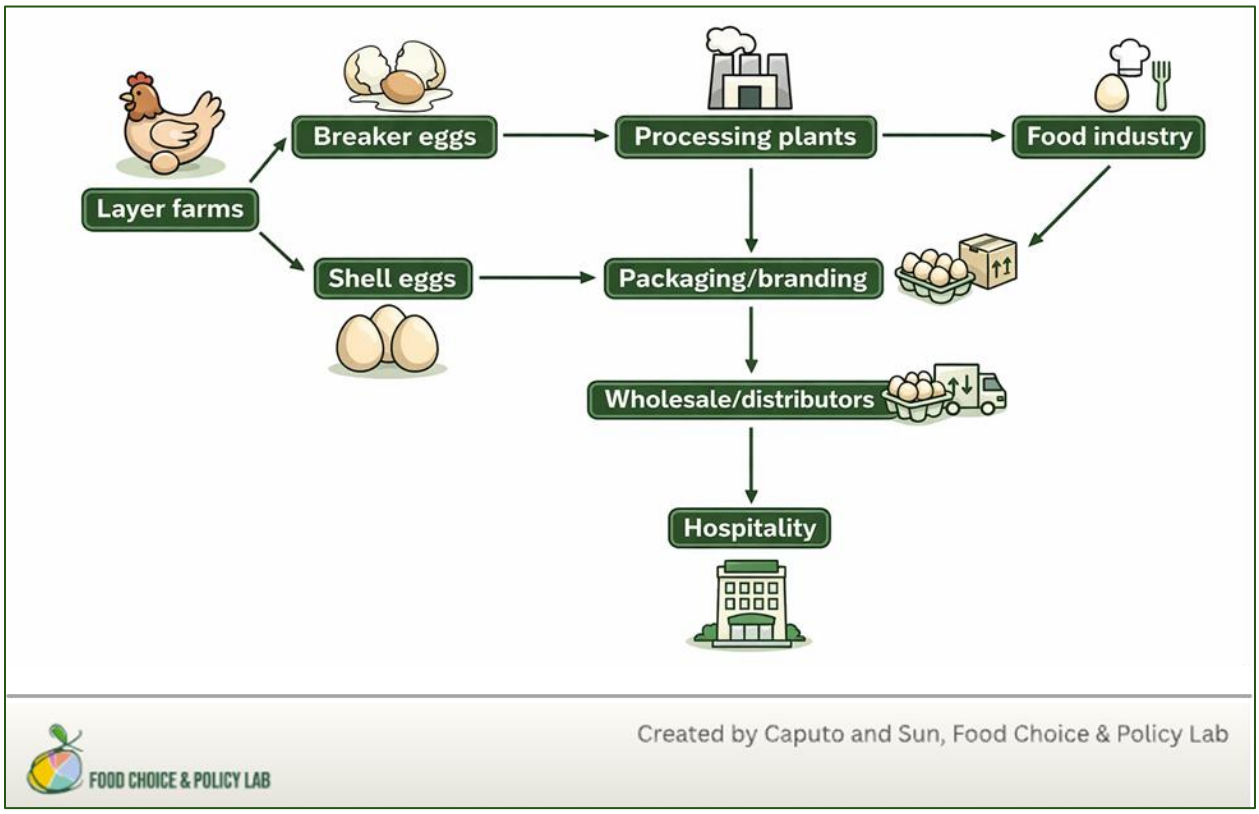

Figure 5. Egg supply chain in the hospitality industry. **Source:** Created by the authors; adapted from EW Nutrition.

Producer constraints

Shifting from conventional cages to cage-free systems is operationally complex and financially demanding for producers. Caputo et al. (2023) find that cage-free production requires more labor, higher management oversight, and substantial capital investment for retrofitting or constructing multi-tier aviary barns. The authors also find that early cycle mortality often increases as hens adapt to more complex environments, and disease management becomes more challenging due to dust levels, parasites, and floor eggs.

These factors raise both fixed and variable costs (Lusk and Norwood 2011), and these cost increases typically flow through to wholesale and retail prices (Carter et al. 2021; Matthews and Sumner 2015). Conversion is especially constrained in markets where producers have limited access to finance or operate in highly price-sensitive environments. For hospitality operators purchasing shell, liquid, and processed egg formats, these upstream constraints affect supply reliability and price stability. In markets where cage-free production remains limited, even strong brand-level commitments cannot be operationalized at scale.

Midstream constraints

Midstream processing, distribution, and product-format availability create additional barriers to cage-free sourcing. In the context of the egg supply chain, "midstream" refers to egg graders, liquid and processed egg manufacturers, and the distribution networks that supply hotels. These actors determine whether cage-free eggs, across shell, liquid, and processed formats, are available, certified, and priced for hospitality buyers.

Midstream conditions vary substantially across regions. Confidential aggregated procurement data shared by global hotel group, and reported here only in summary form, show marked cross-regional differences in cage-free sourcing outcomes. In more mature markets, such as the United States, the United Kingdom, Australia, and parts of Europe, cage-free products account for a large share of hospitality egg procurement (85-90%). In many growth and emerging markets across Asia, the Middle East, Africa, and Latin America, cage-free sourcing remains limited or nascent (0-25%).

In addition, the ability of the hospitality sector to influence upstream cage-free supply remains structurally limited, as foodservice represents a relatively small share of total egg utilization compared with retail**.** For example, in the United States, over half of egg production is sold as shell eggs through retail channels, while only about 12% is sold through foodservice, with the remainder processed or exported (UEP 2024).

These contrasts demonstrate that many hotel groups face supply midstream supply-chain limitations such as restricted distribution capacity, inconsistent availability of liquid and processed cage-free formats, and limited certified suppliers, rather than a lack of corporate commitment. As a result, scaling cage-free sourcing depends heavily on the capabilities and maturity of the midstream actors that service each market.

Demand-side constraints

Although global consumer interest in animal welfare is rising, its influence on hospitality sourcing is indirect because guests do not purchase eggs as standalone items. Demand is instead expressed through menu choices, price sensitivity, and expectations around brand sustainability. A large body of research shows that consumers support higher welfare standards in principle but are unwilling to absorb the full incremental cost of cage-free production in practice (Heng and Peterson, 2017; Lusk, 2018; Lai and Yue, 2020; Liu et al., 2022; Chang et al., 2023; He and Xiong, 2024; Varziri et al., 2024; Caputo et al., 2025; Estévez-Moreno et al., 2025; Murti et al., 2025). Caputo et al. (2025) find that while many U.S. consumers express support for animal welfare, half are unwilling to pay more than a thirty-cent premium per dozen eggs, and only a small share is willing to pay enough to cover total cage-free production costs. Lusk (2018) similarly shows that removing conventional eggs from the market leads 13–20 percent of consumers to exit the category entirely. These behavioral patterns constrain how much of the cage-free premium can be passed through to hotel menus, even among guests with strong ethical preferences

Price responses observed in retail markets further illustrate the challenge. When California implemented minimum space requirements for laying hens, retail egg prices increased by 17-33% (Mullally and Lusk, 2017), demonstrating the scale of pass-through pressures when production costs rise. Hospitality operations face even tighter constraints: menus must remain competitively priced, and significant cost increases are difficult to integrate without affecting guest expectations

or overall value perception, particularly in cost-sensitive market segments where food offerings are bundled into the room rate (e.g., breakfast in many midscale U.S. hotels).

Consumer understanding of “cage-free” adds another set of constraints. Many diners incorrectly assume that the term implies outdoor access or small-scale farming (Caputo et al., 2023), which can limit the perceived value of cage-free eggs when used in menu items. Guests who prioritize animal welfare often prefer labels such as organic, pasture-raised, or free-range and may view cage-free as a modest or incremental improvement (Caputo et al., 2025). This heterogeneity in expectations creates challenges for menu labeling and communication. While sustainability messaging can resonate with welfare-sensitive guests, claims must be accurate, contextualized, and aligned with production reality to avoid confusion or reputational risk.

Chapter 2. Market Assessment Across Regions and Countries

Summary

This chapter presents cross-cutting stakeholder perspectives on cage-free egg sourcing in the hospitality sector and examines how regulatory and market conditions shape transition progress across countries. Drawing on stakeholder interviews and publicly available data, it assesses nine countries in terms of regulatory frameworks, supply availability, cage-free production shares, price premiums, and consumer awareness. Based on these indicators, countries are grouped into three descriptive market categories: advanced transition markets, emerging transition markets, and a pre-transition market (Table 2).

Table 2. Cage-Free Markets across selected countries/regions

Market	Regulatory Environment	Supply Availability	Cage-Free Production Share	Price Premium	Consumer Awareness
Advanced Transition Markets					
France	Well established	Reliable and stable	65%	Low	High
US	Partially established	High availability; continuing to expand in unregulated states	35%	Medium	High
Active Transition Markets					
India	No regulation	Very limited availability; strong growth	20%	--	--
Indonesia	No regulation	Limited availability; currently 20 cage-free farms	10%	High	Low
China	No regulation	Limited availability; large egg producers transitioning to cage free	10%	--	--
Japan	No regulation	Limited availability; producer commitments emerging (23 producers)	8%	--	--
Mexico	No regulation	Limited availability; expanding rapidly	6%	--	--
Brazil	No regulation	Limited availability; improving	5%	High	Emerging
Pre-Transition Market					
Morocco	No regulation	Highly limited availability	0%	--	--

Red: Negative Attribute | Blue: Neutral Attribute | Green: Positive Attribute

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Notes: 1) Cage-free production shares refer to the share of cage-free egg production as a percentage of total egg production in each country and are based on Global Coalition for Animal

Welfare (2023). 2) Price premiums and consumer awareness are synthesized from interview evidence and publicly available sources; "--" indicates that these topics were not discussed by interviewees for specific countries.

2.1. Advanced Cage-Free Transition Markets

2.1.1. France

Regulatory Landscape

France follows EU requirements under Council Directive 1999/74/EC (EUR-Lex, 2019)., which banned conventional battery cages in 2012. France has since gone beyond the EU minimum: since 2022, the retail sale of shell eggs from any caged system has been prohibited, meaning that only non-cage eggs (barn, free-range, or organic) may be sold at retail (Poultry World, 2018).

Stakeholder interviews reinforced France's position, within the broader EU context, as a leading regulatory market for cage-free sourcing. AWGs noted that further restrictions on caged egg production remain plausible within the EU and pointed to an emerging policy issue: the application of animal-welfare standards to imports, which they view as important for protecting domestic producers and reducing the risk of regulatory leakage as cage-free requirements expand. Hotel groups similarly mentioned that Europe is the region where policy developments most directly shape cage-free sourcing decisions. Several reported collaborating with industry peers and AWGs to support more harmonized EU-wide standards, arguing that harmonized rules, once markets are ready, create a transparent level playing field for suppliers and hospitality buyers.

Prices and Demand Signals

Interviews suggest that hotels in France rely primarily on shell and liquid eggs, while powdered eggs are rarely used. Reported price gaps between cage-free and conventional eggs were described as moderate, averaging around 10% in Europe. Consumer awareness was reported to be relatively high in Western Europe (including France and the UK), where cage-free eggs are more visible in grocery retail and supported by labeling norms and public communication around animal welfare. In these markets, some guests may notice and value cage-free offerings, although interviewees emphasized that consumer recognition remains lower in regions where cage-free products are less visible at retail.

Supply Capacity & Conversion Pipeline

France was consistently described as a mature cage-free market, with reliable physical availability for hospitality sourcing over several years. Similar maturity was reported across other Western European markets such as Spain, Germany, and the UK, where suppliers can meet hospitality needs across formats, including shell and liquid eggs (and, where relevant, powdered eggs).

Corporate & Market Commitments

Public commitment tracking indicates that 285 companies in France have committed to achieving 100 percent cage-free eggs, spanning both production and purchaser segments. On the production side, 13 are producers and 109 are manufacturers have made the commitments. On the purchaser side, 50 restaurant companies, 38 hospitality companies, and 26 retailers have pledged to reach full cage-free sourcing (Chicken Watch, 2025). These commitments include both domestically

headquartered firms and global hospitality brands with operations in France. As with most public commitment databases, company presence represents reporting at the time commitments were made and may not fully capture subsequent changes in market presence or portfolio composition.

2.1.2. United States

In the United States, 10 states have mandated cage-free egg regulations (**Table 3**). Massachusetts (approved in 2016, effective in 2022) and California (approved in 2018, effective in 2022) were the earliest adopters, while Arizona is the most recent state to enact such requirements. All 10 states follow the UEP cage-free space standards; 0.09 m² per hen for multi-tier or partially slatted housing and 0.14 m² per hen for all-litter floor housing (see **Table 3**). Eight states, including Massachusetts, California, Washington, Colorado, Michigan, Oregon, Nevada, and Arizona, ban both the production and sale of eggs from caged hens. Utah and Rhode Island mandate cage-free production but do not restrict the retail sale of caged eggs. In states that restrict sales, regulations apply broadly across retail channels, including the hospitality sector.

Table 3. Summary of cage-free egg regulations across states

State	Regulation	Approve Year	Effective Year	Applies to Sales	Applies to Production
Massachusetts	Bill S. 2470	2016	2022	Yes	Yes
California	California's Proposition 12	2018	2022	Yes	Yes
Washington	House Bill 2049	2019	2023	Yes	Yes
Colorado	House Bill 1343	2020	2023	Yes	Yes
Michigan	Public Act 132 of 2019	2019	2024	Yes	Yes
Oregon	Senate Bill 1019	2019	2024	Yes	Yes
Nevada	Assembly Bill 399	2021	2024	Yes	Yes
Utah	Senate Bill 147	2021	2025	No	Yes
Rhode Island	House Bill 7456	2018	2026	No	Yes
Arizona	House Bill 2724	2022	2025	Yes	Yes

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Prices and Demand Signals

Across interviews, cost premiums were identified by hotel groups as the primary barrier to cage-free adoption in the U.S. Cage-free eggs remain approximately 20-35% more expensive than conventional eggs, although interviewees reported no consistent evidence of large price differences between certified and non-certified cage-free eggs. These premiums pose particular challenges for economy and midscale hotels, as well as properties offering complimentary breakfast, where higher ingredient costs cannot easily be passed on to guests. Availability gaps persist in developing and unregulated markets, and distribution challenges are especially acute for remote hotel locations. Secondary constraints include quality assurance, food safety requirements, and uneven distributor coverage of cage-free SKUs.

Hotels primarily rely on liquid eggs, especially in brands offering complimentary breakfast, while shell eggs are more common in premium and luxury segments. Powdered eggs are rarely used in hotel operations. Consumer awareness of cage-free eggs is relatively high in the U.S., particularly where cage-free labeling is visible in grocery retail. While some guests notice and appreciate cage-free offerings, interviewees noted that cage-free sourcing is not a primary driver of hotel choice.

Supply Capacity & Conversion Pipeline

The United States was described as a mature, high-availability market for cage-free eggs. AWGs noted substantial expansion of cage-free production, while certain hotel groups noted that cage-free eggs are no longer a major availability constraint in mainstream supply chains, particularly for liquid and processed formats commonly used in hospitality. Large North American producers now routinely offer cage-free options, allowing national contracts and efficient logistics.

Hotel groups confirmed that under normal conditions, cage-free supply is stable across North America and the Pacific region, although avian influenza outbreaks periodically disrupt availability and drive short-term shortages. Interviewees reported that centralized purchasing systems, including removing non–cage-free options from approved catalogues, have been effective in increasing uptake. Over the past 3-5 years, there was a notable increase in product variety, including shell eggs, liquid eggs, and ready-to-use scrambled or patty formats. While resilience to shocks is largely managed at the distributor level, overall trends point to gradually improving availability and market maturity for cage-free eggs in North America. However, hotel groups also observed that despite strong supply reliability in the United States, buyer knowledge and understanding of what constitutes a “good” or high-quality cage-free egg are inconsistent, suggesting an ongoing need for education and awareness-building among hospitality buyers.

Corporate & Market Commitments

In the United States, a total of 534 companies has committed to cage-free eggs, with restaurants (161) and retailers (123) leading these efforts. On the production side, 91 manufacturers and only 9 producers have made commitments. In hospitality industry, a total of 47 companies has committed to reaching 100% cage-free sourcing. A company first announced such a commitment in January 2014 (Chicken Watch, 2025). Following this announcement, 37 companies made commitments during the 2015–2020 period, with an additional nine companies announcing commitments between 2021 and 2025. Seven companies pledged to achieve full cage-free sourcing by 2020, while 32 set a 2025 target and eight set targets in the 2030 timeframe (Chicken Watch, 2025). A comprehensive list of companies and their commitments can be found in EggTrack.

The results from the interview suggest that most hospitality companies continue to maintain 2025 commitments, with North America (and parts of Europe) realistically able to reach 80-90% cage-free sourcing. Hotels confirmed that cage-free options are broadly available in the U.S., and some managed portfolios had already exceeded 90% cage-free sourcing by 2024, with remaining gaps attributed mainly to avian influenza disruptions and portfolio turnover.

However, interviewees noted that the complex hotel chain models limit enforcement, particularly for the franchise hotels, as companies can typically offer sourcing options but not mandate purchases. Decentralized purchasing structures, where properties use different menus, distributors, and sourcing strategies, slow transitions compared with sectors such as fast food, which benefit from uniform menus and centralized supply chains. Shell-egg sourcing remains particularly fragmented, while liquid and processed egg formats are easier to manage due to national distribution and lower costs. As a result, hotels that redesign menus to rely more heavily on liquid or processed cage-free eggs tend to transition more smoothly without affecting guest experience.

Hotels also reported that consumer demand is not a primary driver of cage-free adoption. Guests rarely choose hotels based on egg sourcing, and menu labeling primarily serves as values-aligned messaging rather than a tool to increase bookings. Instead, regulatory spillovers (such as California Proposition 12 and Massachusetts regulations) have been the most influential drivers, indirectly improving supply conditions in regulated markets. In unregulated states, progress remains slower and more uncertain. AWGs can play a supportive role, including advocacy efforts that complement regulatory and market developments.

2.2. Active Transition Markets

2.2.1. Brazil

Regulatory Landscape

Based on publicly available information, cage-free regulation in Latin America, including Brazil, remains limited compared to the European Union and the United States (The Humane League, 2024). Brazil has no national law banning caged egg production or mandating cage-free housing systems. As a result, cage-free adoption relies primarily on corporate and buyer commitments, with compliance typically verified through third-party certification standards rather than public regulation (Certified Humane, Global Impact).

Stakeholder interviews with AWGs and hotel groups underscored the limited development of market-level regulation in Brazil and across Latin America. Hotel groups identified regulation as the most effective long-term pathway for cage-free adoption, particularly when standards are harmonized across markets. At the same time, they noted that regulation is feasible only once adequate local cage-free supply exists; otherwise, public incentives or transition subsidies may be required. In the absence of regulation, hotels rely on a mix of AWG partnerships, voluntary corporate commitments, and industry collaboration, while recognizing the limitations of each approach.

Interviewees described AWGs as particularly valuable for guidance and supplier identification in early-transition markets, though some hotel groups noted that AWGs may not always have full visibility into the operational complexity of multinational hotel sourcing. Hotels also mentioned

the importance of sector-wide voluntary standards with shared auditing and verification, which can reduce duplication of effort across individual companies. Retailer-led initiatives were repeatedly cited as especially influential in unregulated markets due to supermarkets' greater purchasing power. While hotel groups expressed a willingness to absorb moderate cost increases to support cage-free sourcing, they also noted formalized thresholds beyond which adoption becomes infeasible.

AWGs further noted that in markets without regulation, leadership often emerges through a combination of credible certification schemes, with programs such as *Certified Humane* most frequently recommended, retailer-led initiatives, AWG–company partnerships, and sustainability alliances. While these mechanisms can be effective, AWGs cautioned that alliances may be slow-moving and, in some cases, risk serving as reputational "shields" rather than drivers of structural change. Additional AWG insights highlighted the importance of strong supplier partnerships and consumer awareness in unregulated markets.

Interviews indicated that in regions such as Latin America and Asia, supplier self-claims are viewed as less credible, leading procurement teams to rely heavily on third-party certification. In the United States, for instance, long-standing supplier relationships and established reputations allow greater reliance on supplier claims, reducing verification burdens.

Prices & Demand Signals

Interviewees identified cost as a major constraint in Brazil, particularly where cage-free supply remains limited. Shell eggs were described as the most accessible and lowest-cost option, while liquid eggs are available in some markets but less consistently. Hotels noted weak aggregate demand signals, which slow supplier investment and hinder the expansion of cage-free production.

Consumer awareness of cage-free eggs is emerging but varies across regions. AWGs reported that consumers in Latin America and APAC are increasingly learning the term "cage-free," often through English-language terminology rather than local translations, and that once informed, a substantial share expresses willingness to pay. Hotel groups, on the other hand, argued that consumer expectations remain relatively low in South America, with Brazil representing a partial exception due to sustained AWG-led awareness campaigns. Across regions, interviewees noted that actual willingness to pay remains limited, as most guests are reluctant to accept higher prices for sustainability-related attributes, including cage-free eggs.

Supply Capacity & Conversion Pipeline

Interview insights revealed divergent but complementary views on cage-free egg availability in Brazil. AWGs highlighted rapid recent growth in cage-free production, particularly in Brazil and Mexico, noting that with appropriate incentives, producers can transition existing barns to cage-free systems within roughly six months. AWGs also pointed to promising large-scale suppliers, such as *Mantiqueira* in Brazil, and noted that shell eggs are generally the most readily available format, while liquid and powdered products remain under development.

Hotel groups stressed that availability remains a practical constraint for hospitality buyers when price premiums, quality consistency, volume capacity, and distribution requirements are taken into

account. Even where cage-free producers exist, many are unable to meet the logistical and contractual needs of large hotel operators. As a result, Latin American markets were consistently characterized as early-stage or developing, where cage-free options are improving but not yet available at sufficient scale for widespread hospitality adoption. Overall, interviews suggest that while supply capacity is expanding, limited demand, high costs, and underdeveloped distribution networks continue to slow progress.

Corporate & Market Commitments

Public commitment tracking indicates that 236 companies, including 86 restaurants, 73 manufacturers, 26 hospitality companies, 25 retailers, 16 foodservice & catering, and 7 producers, in Brazil have committed to reaching 100 percent cage-free sourcing (Chicken Watch, 2025). In hospitality industry, 20 companies out of 26 have committed to 2025 targets, with an additional five companies extending commitments into the 2026–2030 period (Chicken Watch, 2025).

2.2.2. Indonesia

Regulatory Landscape

Publicly available information indicates that, as many other Asian countries, Indonesia lacks a regulatory framework governing cage-free egg production, although public discussion on animal welfare is increasing (The Humane League, 2024). Interview insights further suggest that regulatory dynamics observed in other unregulated markets also apply to Indonesia, including industry demand for national regulation alongside continued reliance on third-party certification in the absence of formal policy.

One AWG interview focusing on Asian markets provided additional region-specific insights. The AWG identified *Certified Humane* as the most credible cage-free standard in Asia, noting that it meets scientific benchmarks, combines well-established welfare criteria with rigorous auditing, and is widely implemented across the region. Other standards, such as China's Intertek/IQC, were viewed as adequate for basic compliance but not fully aligned with international benchmarks, while many local or government standards were considered insufficient to meet international benchmarks.

The AWG further noted that the quality of standards and rigor of implementation and auditing, accounting for roughly 60% of credit system evaluation, are more important than the proliferation of standards. Rather than developing new regulations, the AWG argued that multi-stakeholder certification systems often represent the most effective pathway, as government standards typically reflect minimum compliance.

Prices & Demand Signals

Interviews indicated that hotels in Indonesia primarily use shell and liquid eggs, with liquid formats playing an important operational role but not always being widely available. Cage-free price premiums are often high, limiting adoption. Consumer awareness of cage-free eggs remains generally low, though it is gradually increasing. Many consumers are still learning the term "cage-free," and in some markets are more familiar with the English term than local translations. While

cage-free eggs rarely influence hotel choice, interviewees noted that they may contribute to guest satisfaction when clearly communicated.

Supply Capacity & Conversion Pipeline

Interviewees reported that cage-free egg production in Asia, including Indonesia, has expanded rapidly over the past three to five years, although market maturity and effective availability for hospitality remain variable. AWGs point out significant growth across Asia, with most major urban markets now hosting multiple cage-free producers capable of serving hospitality clients. Indonesia has expanded from only a few producers to approximately 20 cage-free farms, primarily concentrated in Java and Bali. AWGs further noted that liquid and processed cage-free eggs, previously unavailable in many APAC markets, are beginning to emerge, signaling emerging supply-chain development.

Despite this growth, hotel groups noted that availability remains a major operational challenge, particularly for large hospitality buyers. Even where cage-free producers exist, many are unable to consistently meet volume, quality, distribution, and compliance requirements. Supply chains in APAC were described as highly localized and fragmented, limiting scalability. Interviewees reported that price premiums in developing markets can reach 80-300%, making adoption particularly difficult for franchise hotels. Physical supply constraints were described as most acute in remote or resort locations, including islands and rural destinations.

Corporate & Market Commitments

Public commitment tracking indicates that 121 companies in Indonesia have committed to achieving 100 percent cage-free sourcing, spanning restaurants (53), hospitality companies (35), manufacturers (19), retailers (7), food service and catering firms (6), and producers (1) (Chicken Watch, 2025). In the hospitality industry, the first such commitments were announced in December 2016 (Chicken Watch, 2025). Following these initial pledges, 16 companies made commitments between 2017 and 2020, and an additional 17 announced commitments between 2021 and 2025 (Chicken Watch, 2025). Overall, 26 companies are expected to reach full cage-free sourcing between 2021 and 2025, while seven have target dates extending into 2026–2030. A detailed list of companies and their corresponding commitments is provided by EggTrack.

2.2.3. China

China is the world's largest egg producer, accounting for approximately 40% of global egg production, with only about 10% of production comes from cage-free systems (Global Coalition for Animal Welfare, 2023). China has no national legislation governing laying-hen welfare, no ban on cages, and no mandatory labeling requirements for egg production methods (Global Coalition for Animal Welfare, 2023). China has no national legislation governing laying-hen welfare, no ban on cages, and no mandatory labeling requirements for egg production methods (Global Coalition for Animal Welfare, 2023). One interviewed AWG noted that a domestic certification system (Intertek/IQC) exists but is viewed as below international benchmarks, such as Certified Humane.

Despite the absence of regulation, industry commitments are substantial. Across sectors, 73 companies have publicly committed to sourcing cage-free eggs by 2025, with an additional 32

companies committing by 2030 (Chicken Watch, 2025). Among these 105 companies, most commitments come from the hospitality sector (35 companies), followed by manufacturers (29), restaurants (25), and retailers (7). However, there are no producers making cage free commitment.

Interview evidence suggests that China has experienced significant recent expansion in cage-free egg production. AWGs and hotel groups reported that dozens of producers are now operating cage-free systems nationwide, with several large companies entering cage-free production for the first time. One AWG highlighted that China's largest egg producer has launched new cage-free facilities, enabling national supply of shell, liquid, and processed cage-free eggs. Despite this progress, supply constraints remain for hospitality buyers, particularly in remote or resort locations, and overall availability remains less mature than in Europe or North America. AWGs characterized China as a rapidly developing market in which cage-free production is growing but not yet available at sufficient scale to support consistent hospitality sourcing nationwide.

2.2.4. India

India is the world's third-largest egg producer, accounting for approximately 7% of global egg production, with around 20% produced under cage-free systems (Global Coalition for Animal Welfare, 2023). Like China, India has no national legislation governing laying-hen welfare, no ban on cages, and no mandatory labeling requirements for production methods (Global Coalition for Animal Welfare, 2023).

Across industries, 52 companies have committed to sourcing cage-free eggs by 2025, with an additional 18 companies committing by 2030 (Chicken Watch, 2025). Among these 70 companies, manufacturers account for the largest share (24), followed by hospitality companies (17). Notably, no egg producers have made cage-free commitments (Chicken Watch, 2025).

Interviewed AWGs reported that India is experiencing strong growth in cage-free egg production, particularly in Southern India, where multiple farms are transitioning with technical support from AWGs. While availability remains variable across regions and constraints persist in some areas, producers nationwide are increasingly exploring transitions. AWGs mentioned that hybrid sourcing models, combining physical cage-free eggs with credits, have been especially effective in Southern India; however, no official data are publicly available on the volume of credits used. Overall, India was characterized as a developing but expanding market, with processed and liquid cage-free egg products beginning to emerge, although supply limitations remain in certain regions.

2.2.5. Japan

Japan accounts for approximately 3% of global egg production, with about 8% produced through cage-free systems (Global Coalition for Animal Welfare, 2023). Japan has no national legislation governing laying-hen welfare, no ban on cages, and no mandatory labeling requirements for egg production methods (Global Coalition for Animal Welfare, 2023).

Despite limited regulation, Japan exhibits relatively strong industry-led commitment. Across sectors, 129 companies have committed to sourcing cage-free eggs by 2025, with an additional 26 companies committing by 2030 (Chicken Watch, 2025). Among these 157 companies, manufacturers (40 companies) and hospitality companies (40 companies) account for the largest share of commitments. Notably, 23 egg producers have also made cage-free commitments,

distinguishing Japan from several other Asian markets, such as China and India (Chicken Watch, 2025).

According to AWG interviews, physical sourcing of cage-free eggs remains challenging in certain contexts, particularly remote or specialized locations such as ski resorts in northern Japan, where logistics and limited local supply constrain availability. In these cases, cage-free credits were viewed as particularly useful for addressing unavoidable gaps while physical supply remains constrained.

2.2.6. Mexico

Similar to Japan, Mexico accounts for approximately 3.3% of global egg production, with only about 6% of eggs produced through cage-free systems (Global Coalition for Animal Welfare, 2023). Mexico has no national legislation governing laying-hen welfare and no mandatory labeling requirements for egg production methods (Global Coalition for Animal Welfare, 2023). However, regulatory proposals are emerging. For example, in September 2023, Animal Equality in Mexico supported a law intended to enable the Federal Consumer Protection Agency to regulate cage-free egg production (Animal Equality, 2025), and in 2024, Mexico incorporated animal protection into its constitution, providing a legal foundation for potential future cage-free regulations (Animal Legal Defense Fund, 2025).

At present, the cage-free transition in Mexico is led largely by industry commitments. 133 companies have publicly committed to sourcing cage-free eggs by 2025, with an additional 31 companies committing by 2030 (Chicken Watch, 2025). Among these 164 companies, restaurants lead commitments (79 companies), followed by manufacturers (37 companies) and hospitality companies (31 companies). Notably, no egg producers have made cage-free commitments.

Interviewed AWGs cited Mexico as part of Latin America's rapid expansion in cage-free egg availability over the past three to five years. Within the hospitality sector, one hotel group reported that approximately 50% of eggs are cage-free.

2.3. Pre-Transition Market

2.3.1. Morocco

Morocco accounts for only 0.5% of global egg production, with no reported cage-free egg production (Global Coalition for Animal Welfare, 2023). Morocco has no national legislation governing laying-hen welfare, no ban on cages, and no mandatory labeling requirements for egg production methods (Global Coalition for Animal Welfare, 2023).

Interview evidence on Morocco specifically was limited. One AWG noted that regulation across Africa remains scarce, with South Africa as a notable exception where cage-free definitions and labeling requirements are expanding. According to Chicken Watch (2025), 36 companies in Morocco have committed to sourcing cage-free eggs by 2025, with an additional 10 companies committing by 2030. These commitments are led by the hospitality sector (18 companies), followed by manufacturers (14) and restaurants (11).

Although Morocco was not discussed in detail during interviews, AWGs characterized Africa more broadly as a region where cage-free egg availability remains highly limited. One hotel group further noted that parts of Sub-Saharan Africa are among the most constrained regions globally with respect to cage-free egg sourcing.

Chapter 3. Perspectives from AWGs and Hotel Groups

Summary

This chapter reports cross-cutting stakeholder perspectives on global cage-free sourcing in the hospitality sector. It documents shared views that egg-market vulnerability is structural, driven by shocks such as avian influenza, feed volatility, and logistics disruptions, rather than specific to cage-free systems. The chapter then outlines the main constraints and expansion opportunities identified in interviews, including financing and risk allocation, limited processing capacity for liquid and processed cage-free formats, and adoption dynamics shaped by cost, supply maturity, and procurement structures (managed versus franchised properties as well as the concentration of hotels). These procurement dynamics affect both managed and franchised properties, reflecting not only corporate purchasing policies but also hotel density within regions and, in many countries, the significant role of hotel owners in purchasing decisions.

3.1. Supply and Demand

3.1.1. Resilience of egg supply chain

Across interviews, AWG and hotel stakeholders argued that egg market vulnerability is structural rather than specific to cage-free production systems. AWGs noted that cage-free and caged systems exhibit similar resilience patterns**,** Shocks such as avian influenza, climate-related disruptions, feed price volatility, and shipping constraints affect both production systems in similar ways. Interviewees further noted that resilience trade-offs observed in broiler production do not necessarily translate to egg production, and that avian influenza remains a systemic risk regardless of housing system. Consistent with these views, prior research with egg producers finds no inherent resilience advantage of cage-free systems over caged systems from either a production or animal-welfare perspective (Caputo et al., 2023).

From the hospitality perspective, the egg supply chain was described as fragile, price-sensitive, and slow to recover from shocks. Disease outbreaks and supply disruptions were reported to have reduced available volumes and led to substantial price increases, in some cases doubling or more, in regions including Australia, Eastern Europe, and the United States. These shocks often persist for extended periods, undermining hotels' ability to source cage-free eggs consistently. While some stakeholders noted that credit mechanisms could offer short-term flexibility during temporary disruptions, most noted that resilience challenges reflect broader structural characteristics of the egg sector rather than cage-free systems per se.

3.1.2. Hospitality Egg Procurement Practices

Egg product format, supply maturity, and cost are key determinants of cage-free adoption in hospitality. Across stakeholders, shell eggs and liquid eggs were identified as the most relevant formats for hotels, while powdered eggs are rarely used. Liquid eggs, particularly ready-to-use products for large-scale food service, are operationally important but can be more difficult and costly to source in cage-free form. They require additional processing, consolidation, and distribution capacity, which remains limited in many markets, although in some countries they may face fewer health and safety barriers to cross-border distribution than shelled eggs. AWGs

noted that hospitality buyers often require very specific product attributes, such as egg size or frozen and ready-to-use formats, while rarely offering long-term purchasing commitments. This combination discourages producers from investing in or retrofitting facilities without shared risk.

Hotel groups identified supplier compliance, food safety, cost, availability, and volume capacity as their primary procurement criteria. Cage-free adoption is most feasible in markets where supply chains are mature, certification and compliance requirements can be met, and price premiums remain moderate. Where cage-free supply is inconsistent, expensive, or unable to meet insurance, food safety, or distribution requirements, hotels often continue to rely on conventional eggs despite corporate cage-free commitments. Interviewees indicated that price increases above roughly 50% are difficult for many hotels to absorb, and that in some markets no compliant cage-free suppliers exist at all. Constraints are even more pronounced among lower chain-scale segments (e.g., economy and midscale), where even a 20% increase in food and beverage costs can be cost-prohibitive.

While new cage-free suppliers are emerging in certain regions, stakeholders argued that limited consumer demand for animal-welfare-certified products in many markets reduces incentives for producers to expand capacity. Hotels also cited disease-related shocks, most notably avian influenza, as well as broader supply-chain disruptions, including COVID-19, as significant barriers, particularly in less mature markets where hospitality demand alone is insufficient to drive structural change. Some hotel participants further noted that knowledge gaps and misperceptions about costs remain an underappreciated challenge and, in some cases, can weigh more heavily on decision-making than actual price differences.

From a demand perspective, cage-free sourcing rarely drives hotel choice directly, but interviewees from AWGs indicated that it could contribute to guest satisfaction, reputational value, and repeat business when communicated effectively. Although consumer awareness of cage-free practices is growing globally, certification is valued within hospitality primarily for traceability and compliance rather than for direct consumer recognition. Practices such as menu labeling or emphasizing local farm partnerships were viewed positively but are applied inconsistently, limiting their potential reputational benefits. AWGs stressed that procurement decisions are typically guided first by animal-welfare objectives, followed by customer expectations, ESG goals, and food safety considerations.

3.2. Corporate Commitments and Implementation Gaps

Hotel groups reported meaningful progress toward fulfilling their cage-free commitments. One major group indicated that approximately 75-80% of total egg spend is already cage-free, with annual increases of 10-20%, including in regions that have historically been more challenging. Current operational priorities focus on onboarding compliant suppliers, supporting hotels without centralized procurement offices, training local teams, and facilitating phased transitions; for example, shifting to liquid cage-free eggs before shell eggs. In some cases, hotels are also pursuing strategies to reduce overall egg usage.

Despite this progress, hotel groups broadly acknowledged that most companies are unlikely to fully meet their 2025 cage-free commitments. Interviewees cited persistent supply constraints, fragmented market development, and high price premiums in many regions as key barriers. While cage-free sourcing has expanded substantially, particularly in more mature markets, hotels argued that market readiness over the next five years remains uncertain, making new public commitments

increasingly risky. As a result, companies continue to prioritize internal market-by-market targets, continent-level planning, and gradual expansion where supply is available, and cost premiums are manageable. Several groups viewed 80 or 90% cage-free sourcing by 2030 as more realistic than full compliance, depending on how their the hotels are distributed across regions.

AWGs offered a contrasting perspective, arguing that corporate cage-free commitments remain technically achievable but have been poorly implemented across much of the hospitality sector. Many hotel groups made public commitments between 2016 and 2018, yet AWGs noted that serious implementation efforts began only in the past one to two years, as operational capacity recovered following the COVID-19 disruption, resulting in delayed progress relative to initial timelines. AWGs mentioned significant gaps in internal communication, with local hotels often unaware of corporate commitments, as well as weak data tracking, particularly outside the United States and European Union, where companies may not be able to identify the egg products they are purchasing.

From the AWG perspective, commitments can be met through a combination of physical sourcing and cage-free credits, but success depends on actual purchasing behavior rather than public announcements. AWGs recommended more structured business planning, including mapping credible suppliers, distinguishing where physical sourcing is feasible, using credits strategically to address unavoidable gaps, providing training to local hotels, and offering long-term demand commitments to suppliers. They argued that 100% cage-free sourcing remains achievable by 2026–2030 if companies prioritize the issue and deploy available tools and suggested that failure to meet 2030 targets would reflect insufficient commitment rather than structural infeasibility. AWGs also underscored differences across hotel ownership models, noting that managed properties are generally easier to align with cage-free standards due to stronger headquarters control, while franchised properties pose greater challenges. In these cases, AWGs suggested making cage-free sourcing a brand standard, which has already been implemented at many hospitality companies according to hotel groups. Another suggestion from AWGs is the use of centralized credit mechanisms to offset non-compliant activity.

3.3. Constraints, Opportunities and Caveats for Expansion

Interviewees identified financing and risk allocation as the primary barriers to expanding cage-free production. AWGs noted that hospitality buyers often require specific product attributes, such as egg size, frozen or ready-to-use formats, while rarely offering long-term contracts. This combination discourages producers from retrofitting or investing in cage-free facilities without shared risk or demand guarantees. Transition costs, production downtime, and retrofitting expenses were described as substantial, typically requiring multi-year commitments to secure financing and justify investment. These challenges have likewise been documented by egg producers in the United States (Caputo et al., 2023). Hotel stakeholders further highlighted structural differences across egg formats. Shell eggs are typically supplied through fragmented, local networks, whereas hospitality buyers often prefer liquid or processed egg products due to lower labor requirements, food safety considerations, and more reliable national distribution. However, limited processing capacity for cage-free eggs, particularly for liquid and processed formats, was repeatedly cited as a key constraint on expanding cage-free supply.

Limited availability of suitable egg formats was repeatedly cited as a key constraint on expanding cage-free supply. Despite these challenges, AWGs and hotel groups identified several supply-

chain strategies that can support cage-free transitions without requiring direct investment by hospitality companies. These strategies fall into two broad categories: (1) coordinated supply-chain approaches and (2) the use of credit markets.

- **Coordinated supply-chain approaches.**

From the producer perspective, vertical integration, such as ownership of feed mills or egg-processing facilities, can improve cost control and enhance resilience to market disruptions. From the buyer perspective, supplier diversification allows large hotel groups to reduce reliance on single sources and better manage supply risks. Although hotels typically do not invest directly in cage-free production, they can support transitions by signaling demand through procurement policies, supplier standards, and ongoing engagement with key suppliers. In regions with established procurement offices, major suppliers are generally aware of hospitality demand for cage-free eggs, suggesting that demand signaling and coordinated supply-chain strategies, rather than ownership or direct investment, are the primary tools hotels use to encourage cage-free adoption.

- **The use of credit markets.**

In addition to these producer- and buyer-side strategies, interviewees also discussed the potential role of credit markets. Cage-free credits are a voluntary, market-based mechanism intended to support the expansion of cage-free egg production in contexts where physical sourcing is constrained. By decoupling financial support for cage-free production from physical egg procurement, credits allow hospitality companies to contribute to animal-welfare improvements without purchasing cage-free eggs in every market where they operate. Across interviews, AWGs expressed a generally supportive but conditional view of cage-free credits, framing them as a transitional rather than permanent solution. From the AWG perspective, full cage-free commitments are technically and economically achievable in most regions if companies combine physical sourcing with credits in markets where direct procurement remains constrained.

Hospitality companies expressed reservations about credit systems, citing concerns about credibility and governance, uncertainty over whether credits displace caged production or merely add cage-free supply alongside existing systems, and broader reputational and operational risks. These limitations are particularly pronounced in low-production regions, such as parts of Asia, where cage-free egg production remains below 10% in many markets. In such contexts, purchasing cage-free credits from local producers does little to alleviate underlying supply shortages, as few producers are eligible to generate credits. Conversely, purchasing credits from high-adoption regions, such as parts of Europe where cage-free production exceeds 90%, does not address limited availability in Asia, as these transactions do not expand local production capacity or strengthen regional supply chains. This disconnect raises important questions about the effectiveness of cage-free credit systems as a mechanism for accelerating adoption in low-availability markets and highlights the need for further research.

Implications for Hospitality and Planning Future Phase

The findings of this report indicate that, in the hospitality sector, progress toward cage-free egg sourcing is driven primarily by animal welfare groups (AWGs) and corporate social responsibility objectives, and much less, if at all, by direct consumer demand signals. Across interviews, a consistent conclusion emerges meaningful progress toward cage-free sourcing depends less on new public commitments and more on how procurement practices, supplier relationships, and internal coordination are managed across markets.

Cage-free adoption in the hospitality sector is strongly shaped by the presence of enabling regulations and verification systems, as well as by procurement structures, supply availability, and cost constraints. Indeed, interview respondents consistently cited the availability of cage-free supply chains, transition costs, local awareness, regulatory frameworks, and reporting requirements as the most important factors underlying successful adoption.

Complicating this picture, markets differ substantially in terms of regulations, supply chain maturity, costs, and verification systems, suggesting that a single global approach is unlikely to be effective. Instead, hospitality operators must rely on market-specific strategies that reflect local sourcing conditions while remaining aligned with overarching corporate objectives. In markets where cage-free eggs are widely available, supply chains are stable, and regulatory and verification systems are in place, adoption rate is above 80%. In these contexts, continued education efforts and effective reporting mechanisms are critical to further accelerating adoption. In markets where cage-free egg production is limited or absent, adoption remains low (between 10-30%) and difficult to scale. In these contexts, substantial investments are required to build supply chains capable of supporting a transition to cage-free sourcing.

Against this background, an important question arises: what role can the hospitality sector play in facilitating this transition? Our findings suggest that the most effective solutions lie either within firms' internal decision-making processes or upstream in supplier relationships and government-led industry initiatives. Moreover, different strategies are required in different contexts. Future phase of this project may focus on identifying internal solutions and upstream practices that can support supply development and regulatory alignment at the regional level.

We identify three complementary streams of action (short-, mid- and long-term solutions) for future phase, as illustrated in **Figure 6**.

Figure 6. Stakeholder-Identified Practices for Advancing Cage-Free Sourcing in Hospitality

- **Short-term solutions.**

Because hospitality companies operate across highly heterogeneous markets, often facing very different regulatory environments, cost structures, and, in some cases, the complete absence of cage-free supply chains, stronger internal coordination is critical. Greater alignment between individual country operations and headquarters is particularly important for procurement. Although many companies have incorporated cage-free sourcing into their brand standards, there is still misalignment between individual operators and headquarters where consistent communication of corporate goals and expectations can help translate high-level commitments into actionable sourcing decisions at the local level. This is especially important for franchises. Procurement teams must also be empowered to identify new strategies and develop relationships with local stakeholders, including producers and government authorities, especially in markets where cage-free supply chains are underdeveloped or nonexistent.

In addition, requirements for specific egg formats were identified as a key constraint on cage-free adoption, particularly in the hospitality sector where different service models rely on a wide range of egg products. Menu redesign and egg-reduction strategies therefore emerge as complementary short-term solutions. Interviewees cited measures such as reducing food waste, shifting from buffet to à la carte service, and rethinking menu composition to lower overall egg use, thereby easing procurement constraints, without compromising the guest experience.

In future phase, we will conduct interviews with local procurement teams to identify gaps in local awareness, capacity, and coordination. Based on these findings, we will suggest the design of targeted education initiatives, including workshops, training programs, and procurement-focused academies, to support capacity building and knowledge diffusion within hospitality procurement teams. While some companies have implemented these initiatives in certain markets, opportunities

remain to strengthen and expand them across the industry. We will document key local awareness challenges and evaluate the effectiveness of these educational efforts.

- **Mid-term solutions.**

Hospitality cage-free sourcing is constrained by supply availability, which varies widely across regions and countries. The first challenge is limited physical supply availability. In many markets, cage-free egg production remains insufficient or entirely absent, making direct sourcing infeasible despite corporate commitments. The second challenge is the high cost and long investment horizon associated with production transitions. Shifting to cage-free systems requires substantial upfront capital and multi-year financing, which slows supply expansion even in markets where producers are willing to transition.

These constraints help explain why adoption remains uneven across markets and why progress cannot rely on procurement commitments alone. Addressing them requires mechanisms that either compensate for the absence of physical supply in the short run or reduce investment risks and financing barriers in the medium term.

To address these challenges, various instruments have been noted. For instance, cage-free credits have emerged as a potential market-based instrument to support cage-free egg production when direct sourcing is not yet feasible. Animal welfare groups generally view cage-free credits positively as a way to bridge supply gaps. However, skepticism remains regarding the unclear linkage between credit markets and actual production transitions, as well as concerns related to governance, verification, substitution effects, and potential reputational risks. In future phase, we will review well-established credit markets, such as carbon and renewable energy markets, to identify design features relevant for cage-free credit systems. This analysis will inform the development of a credit-market framework focused on verification, standard-setting, transparency, and the role of credits in financing production transitions. The resulting framework will be documented and reported, along with potential alternatives or modifications to existing credit mechanisms.

Long-term contracting and risk-sharing arrangements represent another complementary mid-term solution. While hospitality firms are not directly responsible for production-side investments, they can play a meaningful role in supporting supply expansion through supply-chain coordination. Long-term purchase agreements can reduce supplier risk, lower prices over time, and provide producers with the demand that is needed to justify investment. Interviewees also highlighted centralized or cluster-based procurement models as effective tools for leveraging purchasing volumes and improving bargaining power. In future phase, we will collect key procurement variables, including prices, egg formats, supply volumes, and contract lengths, through surveys of local procurement teams. These data will be used to conduct cost–benefit analyses to identify contracting models that help manage cost impacts and investment risks while supporting supply expansion. The resulting contracting frameworks will be reported as translational tools.

Long-term solutions.
Hospitality cage-free adoption ultimately depends on local regulatory and retail environments. In regions such as Western Europe and parts of the United States, cage-free mandates and bans on battery cages have supported stable cage-free supply chains and higher adoption within the hospitality sector. By contrast, much of Asia, Africa, and Latin America still rely primarily on

voluntary commitments, where cage-free eggs remain scarce or difficult to source at scale, resulting in more constrained adoption.

These patterns suggest that regulations, such as bans on caged egg production and the implementation of enforceable cage-free standards, play a critical role in creating supply and, in turn, enabling hospitality firms to meet cage-free commitments. In this context, AWGs can play an important facilitation by supporting standard-setting, verification, and implementation processes, as well as coordination across supply-chain actors and regulators to advance cage-free transitions.

In future phase, we will simulate hospitality adoption across regions under alternative regulatory environments and cage-free production transition scenarios to assess the potential gains from policy and regulatory change. These simulations will highlight the critical role of governments and industry organizations in enabling hospitality transitions and will be reported as a policy-relevant evaluation of how regulatory reforms could accelerate cage-free adoption.

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Annexes

Individual Interview Protocols

Consent Form

This research aims to evaluate the hospitality sector's perspectives, capacities, and decision-making related to cage-free egg sourcing. This interview will help us understand your organization's current procurement practices and how these are shaped by customer expectations, corporate commitments, regulatory environments, and other actors across the supply chain. The interview will take approximately 45 minutes to 1 hour.

We will begin with introductions and a brief overview of your organization and its main operational activities. We will then ask more detailed questions about your sourcing practices, experiences with cage-free supply, relationships with suppliers, and your organization's commitments or plans moving forward. We will conclude by discussing your views on future trends in the hospitality sector.

Your participation is voluntary, and you may decline to answer any question. Please also feel free to let me know at any time if you would like to pause or take a break.

Contacts: If you have any questions or concerns about this study, you may contact Dr. Vincenzina Caputo (vcaputo@msu.edu). For questions or concerns about your rights as a research participant, please contact irb@msu.edu or +1 (517) 355-2180.

Consent: I have read this consent form, and my questions have been answered. I hereby give my voluntary consent to participate in this study.

Please click one of the following options to continue or terminate the survey.

- o I consent. Begin the study.
- o I do not consent. I do not wish to participate

Participant Background

1. To start, could you describe your organization and your role, and how it relates to egg sourcing or animal-welfare standards?
Probes:

- *In which country or countries do you operate? (e.g., United States, Brazil, Indonesia, France, India, Japan, China, Morocco, Mexico, Türkiye)*
- *Are you a hotel group or another type of organization (AWG, industry association, supplier, etc.)?*
- *What market segments do you serve?*

If the interviewee represents a **hotel / hotel group**, ask Q3-Q5:

2. Please indicate the types of hotel agreement models you operate (select all that apply)
- Owned
- Managed
- Franchised
- Other, please indicate_____

3. Please classify your hotels by market segment
- Economy
- Midscale
- Upscale
- Luxury

4. Please select your role within the hotel or hotel group (select all that apply)
- Operator
- Manager
- Procurement lead
- Sustainability lead
- Other, please specify_____

If **NOT** a hotel, ask Q6–Q7:

5. What is your organization's primary area of work?
- Egg production
- Egg processing
- Hospitality supply chain
- Animal welfare
- Sustainable sourcing
- Certification / auditing
- Policy / advocacy
- Research
- Other (please specify): _____

6. What is your role in the organization?
- Director / senior leadership
- Program manager
- Analyst / researcher
- Sourcing / procurement
- Advocacy / outreach
- Other (please specify): _____

7. Can you briefly describe how your role relates to egg sourcing, production, or animal-welfare standards? (open question, provide your answer below)

Supply Landscape & Capacity Module

8. How would you describe current cage-free egg availability in your market—both overall and specifically for the hospitality sector?
Probes:
- *How has production and market share changed over the past 3–5 years?*
- *Are there regional differences?*

9. Are there oAWGing transitions or investments to expand cage-free production?
Probes:
- *What are the main constraints (e.g., financing, feed costs, land, technical capacity, labor, or others) limiting further expansion?*
- *What are typical lead times for converting or building cage-free facilities?*

10. How resilient is the current egg supply chain to shocks such as disease outbreaks, climate events, or input-price volatility?

11. Who are the main or most promising cage-free suppliers in your market?
Probes:
- *How well do current suppliers meet hospitality needs (shell, liquid, and powdered formats)?*

Business Planning, Operations & Buyer Relationships

12. What is the status of cage-free commitments in hospitality market, and how credible or achievable are their 2026–2030 trajectories?

13. Which certification or assurance schemes operate in hospitality market, and how credible are they for hospitality buyers?

14. Does your organization have a business plan or internal roadmap for transitioning to cage-free?
Probes:
- *If yes: What are the goals and timeline?*

15. What financial and operational constraints does your organization face when sourcing cage-free eggs?
Probes:
- *Cost, storage, supply consistency, staff training, etc.*

16. How has the transition (or initial steps) toward cage-free affected your operational decisions
Probes:

- *Menu design? Forecasting? Communication with suppliers?*

17. How would you describe your communication or relationship with suppliers about cage-free supply, pricing, and timelines?

18. What challenges or "learning curve" has your team encountered when integrating cage-free eggs?

19. What advice would you give to other hospitality operators beginning this transition?

Demand and Prices

20. What product specifications does the hospitality sector typically require (shell, liquid, powdered; pack sizes), and how well does current local supply meet these needs?

21. How does consumer demand for cage-free eggs vary across regions **in the hospitality sector**, particularly in terms of awareness, willingness to pay, and perceptions of cage-free credentials?

22. How do cage-free prices compare with conventional eggs across product forms? How volatile are these differences?

Probes:

- *What contractual or logistics models help manage price or supply risks **in hospitality sector**?*

23. Could you give a sense of your organization's purchase volumes for conventional and cage-free eggs per quarter? Enter 0 if you do not purchase that product.

	Conventional	**Cage free**
Shell eggs (in dozen)		
Liquid eggs (in pounds)		
Powered egg products (in pounds)		
Other (please specify)		

24. Please list the top five factors that influence your organization's egg procurement decisions (e.g., cost, supplier availability, menu requirements, food safety, corporate guidelines, customer expectations, policy requirements, etc.)

- First factor:
- Second factor:
- Third factor:

- Fourth factor:
- Fifth factor:

Please indicate whether each factor has a positive or negative influence on your organization's use of conventional eggs and cage-free eggs.

Factor	Conventional (+)	Conventional (–)	Cage-Free (+)	Cage-Free (–)
First				
Second				
Third				
Fourth				
Fifth				

Policy Questions

25. What regulations or voluntary standards influence cage-free sourcing in hospitality market?
Probes
- *Housing standards, labeling, procurement policies, import rules.*

26. In regions without clear regulation, which pathways (such as voluntary standards, retailer-led initiatives, or AWG partnerships) seem most realistic for supporting cage-free adoption?

Credit markets

27. How familiar are you with attribute-credit systems (e.g., carbon or renewable-energy credits)?
Probes
- *Have you or your suppliers ever used book-and-claim or similar credit-based models?*
- *Have you heard about cage free credits (such as Impact Incentives)?*
- *Are you currently using or planning to use cage free credits to fulfill your cage free commitments?*

28. Do you see egg-credit systems as a credible and feasible option in your region?
Probes:
- *What concerns or barriers (such as transparency, verification, or cost) would limit adoption?*

29. In which types of markets or hotel segments do you think egg-credit systems would be most useful?
Probes:

- *What incentives would motivate producers to participate (e.g., premiums, pre-financing, guaranteed demand?*

- *What incentives would motivate hotels to participate (e.g., supply stability, ability to transition gradually)?*

30. What governance model would build the most trust in an egg-credit system?
Probes:
- *Who should capture most of the value (producers, certifiers, hotels, intermediaries)?*
- *Do you see any risks of credits undermining local cage-free supply?*

31. Do you think egg-credit markets would accelerate or delay physical cage-free transitions?
Probes:
- *How would your organization balance reputational vs. operational considerations?*
- *What lessons from carbon or renewable-energy credit systems should be applied here?*

32. Is there anything else you would like to add about the potential use of credit or book-and-claim systems for cage-free eggs?

Practicalities for Hotels

33. What good-practice examples and persistent pain points have you observed across hotel types (owned, managed, franchised) and segments (economy, midscale, upscale, luxury) in cage free transition?

34. What enabling partnerships can accelerate transitions per market?

Closing questions

35. Thank you for participating in the survey. Is there anything else you would like to share regarding cage-free eggs or the hospitality sector?