

Logistics Data and Sustainability Maturity Framework: Instruction Manual



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Purpose of the Framework

This framework helps organizations assess their level of logistics data maturity and understand its direct impact on sustainability performance.

It evaluates the five core pillars of logistics data management: Data Acquisition, Data Standardization & Harmonization, Data Governance, Cross-Functional Integration, and Multi-Enterprise Data Collaboration. Each pillar progresses through five maturity levels, from manual and fragmented (Level 1) to real-time and intelligent (Level 5).

Data maturity determines sustainability capability. Without structured real-time data collection and integration, accurate emissions tracking is impossible. As data maturity advances, new sustainability outcomes become achievable.

This framework reveals where your organization currently stands, which sustainability capabilities are accessible at your maturity level, and which data gaps block higher performance. It guides companies from reactive operations toward a real-time intelligent logistics network that optimizes both cost and environmental impact.

Maturity Levels Overview

Level 1

Ad Hoc

Data is collected manually with limited structure or governance. Decisions are reactive and fragmented.

Level 2

Standardized Between Regions

Data collection and processes are partially automated and standardized regionally, improving local reporting.

Level 3

Standardization Across Globe and Systems

Enterprise-wide alignment of data standards, enabling integrated analysis and consistency across global operations.

Level 4

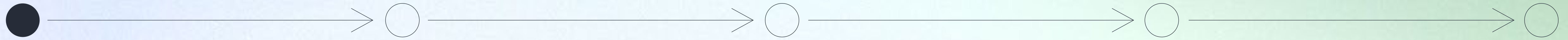
Collaborative

Cross-functional and partner data sharing enables predictive insights and coordinated action.

Level 5

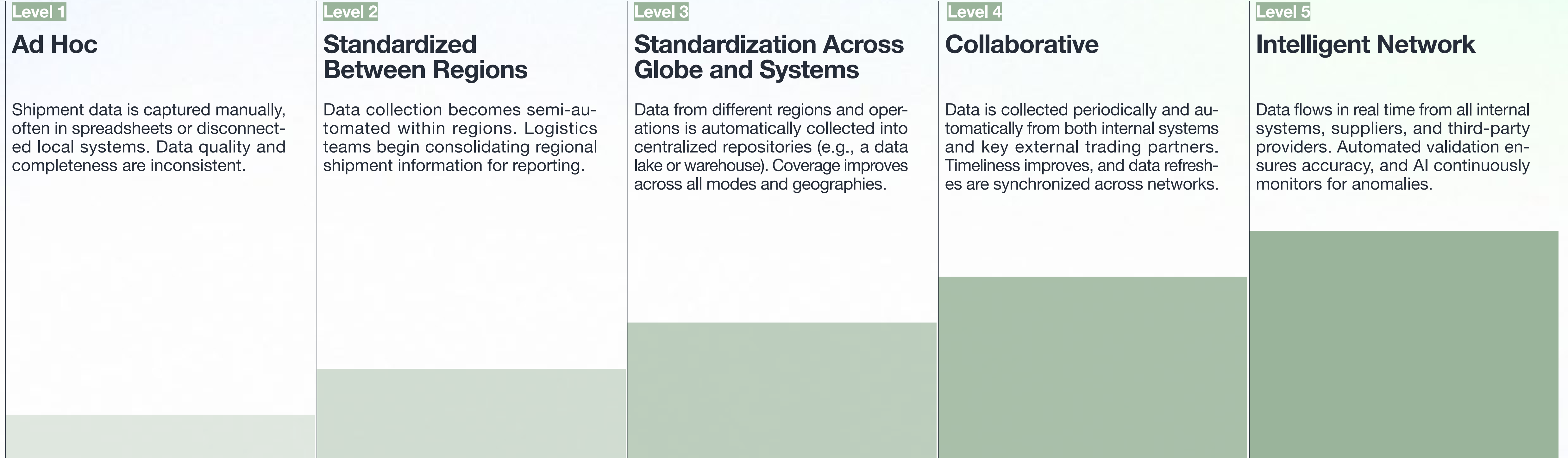
Intelligent Network

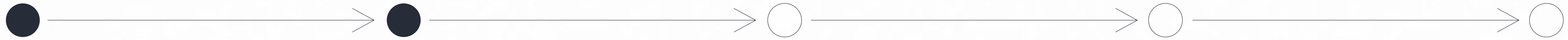
AI-driven, real-time collaboration and decision-making across the extended logistics ecosystem.



Pillar 1:

Data Acquisition





Pillar 2:

Data Standardization & Harmonization





Pillar 3:

Data Governance





Pillar 4:

Cross-Functional Integration





Pillar 5:

Multi-Enterprise Data Collaboration



Scoring, Ranking, and Weighting Methodology

The framework uses a weighted scoring approach to quantify logistics data maturity. Each pillar is assigned a fixed weight based on its contribution to sustainability measurement and optimization capabilities.

Data Acquisition and Cross-Functional Integration carry the highest weights as they have greater impact on carbon reduction.

Organizations rate themselves on each pillar from 1 (Ad Hoc) to 5 (Intelligent Network). Each pillar

score is multiplied by its respective weight to derive a weighted score. These weighted scores are summed to calculate the weighted average maturity score, which determines the overall maturity level, following the defined maturity thresholds. Higher weighted averages typically correlate with greater ability to measure, manage, and reduce emissions across logistics operations. Organizations with advanced maturity can leverage real-time data to achieve predictive sustainability optimization.

Weighting distribution:

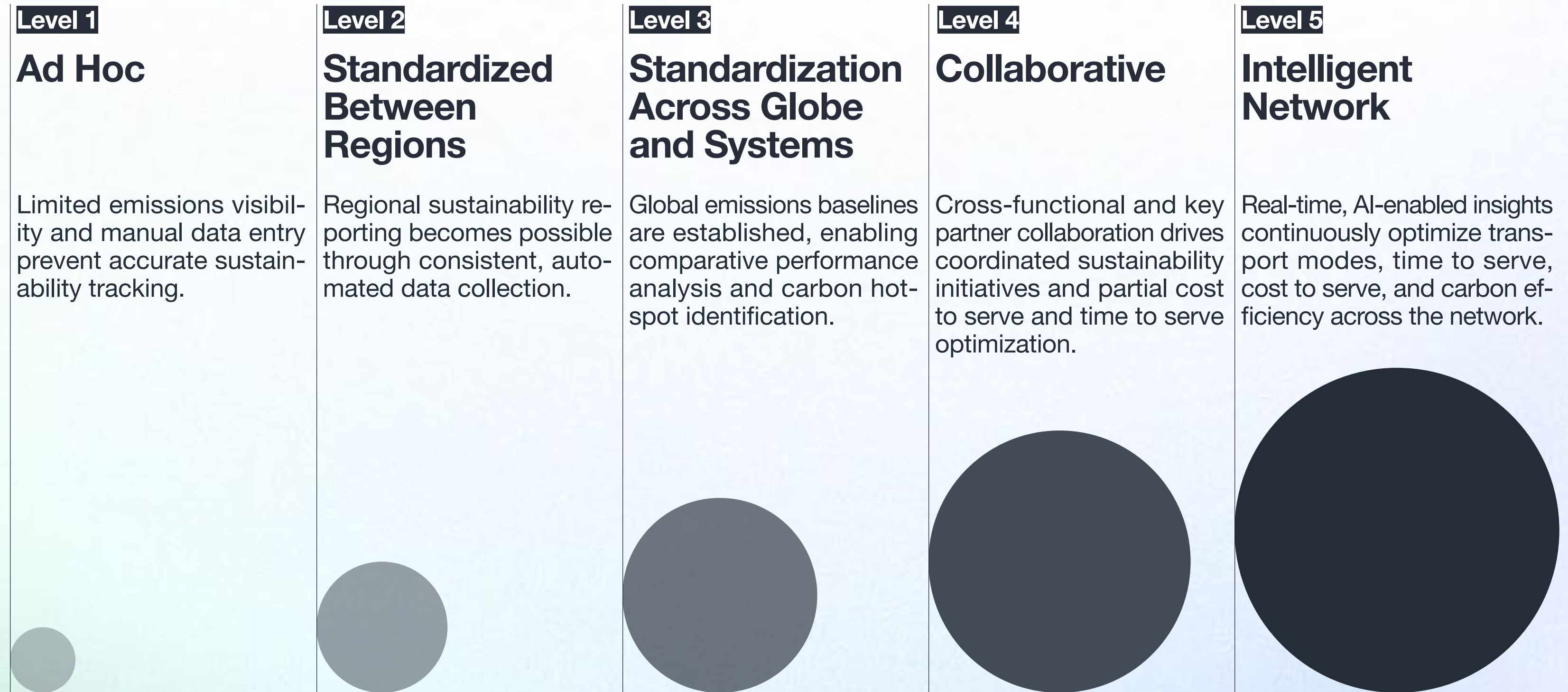
Pillar	Weight (%)
Data Acquisition	25
Data Standardization & Harmonization	20
Data Governance	20
Cross-Functional Integration	25
Multi-Enterprise Data Collaboration	10

Linking Data Maturity to Sustainability Performance

Advancing data maturity directly enhances an organization's capacity to make informed sustainability decisions. The relationship between data maturity and sustainability performance is illustrated in the graphic representation on the right.

The five maturity levels remain the same, but the graphic representation shows their corresponding sustainability impact rather than data management characteristics. Each level indicates what emissions measurement and reduction capabilities are achievable at that stage of data maturity.

As organizations progress through maturity levels, their ability to align logistics performance with sustainability goals strengthens. Data-driven visibility becomes the foundation for operational decisions that balance cost, efficiency, and emissions reduction.



Using the Logistics Data & Sustainability Maturity Assessment Tool

The Logistics Data & Sustainability Maturity Assessment Excel tool operationalizes this framework. Users select a maturity level from 1 to 5 for each pillar, apply the recommended pillar weights, and the tool calculates a weighted average maturity score and overall stage.

The tool also includes a Sustainability Impact column that provides short qualitative statements describing how each maturity level affects emissions visibility and optimization potential. In addition, a Sustainability Readiness Index (SRI)* is calculated by

combining the weighted average with a Sustainability Factor that increases with maturity, providing an overall indication of the organization's readiness to manage and reduce logistics emissions.

A dashboard within the tool visualizes pillar scores and sustainability readiness via radar and pie charts and includes an automatically generated interpretation highlighting which pillar most limits further emission-reduction opportunities. This enables organizations to quickly connect data maturity improvements with tangible sustainability and performance outcomes.

*The Sustainability Readiness Index (SRI) is a composite indicator that assesses how well an organization's logistics data maturity supports sustainability-related actions, measurement, reporting, and optimization. While the Weighted Average Maturity Score indicates the overall sophistication of data practices, the SRI expands this by capturing the extent to which these data practices actually enable environmental performance.

