3.4 Sustainable Supply Chain Management

PharmaEssentia constructs effective supply chain management through three major aspects, working collaboratively with suppliers and contractors to embody and practice sustainability principles, creating long-term and stable value for the pharmaceutical industry and patients.

Sustainability Declaration

- Mutual benefit and prosperity with supplier partners
- Communicating PharmaEssentia's sustainability principles and practices
- Advocating the "Supplier Code of Conduct" to all suppliers
- Inviting suppliers to sign the "Supplier Code of Conduct

Enhancement of Management Capabilities

- Facing a constantly changing world, the strategies to enhance management and response capabilities include:
- Information Mastery
- Strengthening Supply Chain Management Capabilities
- Enhancing Interaction with Suppliers

Establishment of Alternative Sources of Supply

- Identifying Critical Materials
- Screening Raw Material Candidates
- Quality Confirmation, Experimental Verification
- Trial Production
- QA Monitoring, Compliance with Regulations

1. Sustainability Declaration: Building a Sustainable Supply Chain

In 2023, we formulated the "Group Supplier Code of Conduct," which focuses on labor rights, workplace safety and health, environmental sustainability, and business ethics, aiming to set a positive example in the industry. This code was also signed by the chairman and published on our website. For the first time, we issued an ESG questionnaire to 20 suppliers in 2023; of these, 9 have published ESG reports, 7 are preparing ESG/CSR data collection, 3 do not yet have a corporate sustainability plan, and 1 lacks a clear understanding of ESG issues. PharmaEssentia hopes to continue conveying both formal and informal sustainability declarations to our supply partners to create a positive, long-term impact. In 2024, we plan to continue signing ESG agreements with suppliers, hoping to grow together, share benefits, and emphasize corporate sustainability responsibilities

Supplier/Contractor Management Process

GRI 2-6, 204-1 | SASB HC-BP-260a.1 | SASB HC-BP-430a.1

PharmaEssentia's Quality Assurance department has established the "Supplier Management Standards" and "Supplier Management Procedures" as the approval process and operational standards for suppliers and outsourced service contractors. This involves strict monitoring of the selection, evaluation, and approval of raw material, material, and equipment/instrument suppliers to ensure that the supplied raw materials and equipment meet our company's standards for quality, delivery schedules, and Good Manufacturing Practices (GMP). We also require suppliers to sign a "Quality Agreement" to ensure a mutual understanding of product and quality requirements. All vendors required to sign the quality agreement have done so 100%

New Suppliers/Contractors

GRI 308-1, 308-2, 414-1, 414-2

PharmaEssentia is committed to the environmental and social impacts of our supply chain. In addition to the indicators of quality systems, technical capabilities, and service and support, in 2023, we introduced environmental and social standards into our supplier selection process and conducted regular supplier performance evaluations. In 2023, 87 new suppliers/contractors were added, of which 73 were local, representing 83.91% of the total.

Environmental Standards

1. Compliance with Applicable Environmental Regulations: Adhere to all applicable environmental laws, follow relevant operational standards, and meet reporting requirements.
2. Waste Management: Ensure that the treatment, transportation, storage, recycling, reuse, and management of waste, exhaust gases, and wastewater comply with regulations.
3. Resource Use and Recycling: Minimize resource consumption by implementing resource use and recycling measures.
4. Biodiversity Conservation: Commit to no deforestation, land conservation, and the goal of Zero Net Deforestation.
5. Climate Commitment: Reduce greenhouse gas emissions and fulfill the commitment to achieve carbon neutrality.

Social Standards

1. Commitment to Providing an Acceptable Living (Working) Environment for Laborers.
2. Prohibition of Forced Labor: It is not permissible to deprive or restrict the personal freedom of laborers.
3. Freedom of Association and Collective Bargaining Rights.
4. Maintenance of Employee Health and Safety.
5. Guarantee of Minimum Wage, Overtime Hours, and Statutory Benefits.
6. Humane Treatment of Employees: Free from any form of sexual harassment, physical punishment, mental or emotional abuse, and verbal violence.
7. Anti-Discrimination.
8. Prohibition of Child Labor.

Management by Supplier Category

To improve supplier management efficiency, PharmaEssentia headquarters and Panco define suppliers who transact directly with PharmaEssentia as first-tier suppliers, based on risk and procurement amount. PharmaEssentia and Panco also define GMP suppliers that cannot be easily replaced as key suppliers. We manage suppliers according to these two dimensions. Our supplier classification is as follows:

Supplier Category	Tier 1 (Number of Suppliers)	Non-Tier 1 (Number of Suppliers)	Total
Key	107	61	168
Non-Key	221	40	261
Total	328	101	429

For PharmaEssentia's subsidiary in the United States, supplier qualification follows the American procedure SOP-QA-003 Supplier Qualification (GMP) and SOP-QA-009 External Audit Results. In 2023, there were a total of 8 Tier 1 suppliers in the United States, all qualified for critical first tier GMP supplier criteria. Suppliers have passed quality inspections in both the United States and Taiwan.

Supplier Category	Number of Supplier	%
All Tier 1 Suppliers	8	100%
Key Tier 1 Suppliers	8	100%

Supplier/Contractor Risk Assessment and Due Diligence

We conduct an annual assessment of our trading partners, which includes evaluating: product or service quality, capability in handling exceptions and improvements, completeness and timeliness of documentation, on-time delivery rate, emergency order responsiveness, service satisfaction, price stability, and ESG performance score, totaling 8 criteria. PharmaEssentia places particular emphasis on the delivery of raw materials, as shortages can significantly impact our manufacturing processes and research and development progress. Therefore, we strictly require suppliers to ensure supply and quality reliability.

In terms of supplier management at our Taiwan headquarters, criteria for assessing supplier risk include:

1. Whether they are critical suppliers, or provide materials or services directly related to patients or trial participants.
2. Whether the materials or services provided are used in pilot production, clinical trials, or commercial production stages.
3. High impact of the materials or services provided; changing suppliers could significantly impact research and development or manufacturing.
4. Low substitutability of the materials or services provided, including factors such as single sourcing or patented technology.
5. Large annual procurement volume or high monetary value.
6. High impact of environmental, governance, or social factors on the materials or services provided, which could affect supply continuity or regulatory compliance.

In 2023, among the evaluated 419 suppliers, 4% were classified as high risk, 74% as low risk, and 22% as medium risk.

Year	2022		2023	
Risk Leve	Number of Suppliers	%	Number of Supplier	%
Low Risk	148	49%	309	74%
Medium Risk	41	14%	94	22%
High Risk	12	4%	16	4%
Total	301	100%	419	100%

Note: Risk level assessment includes PharmaEssentia Taipei and Taichung. Risk levels are categorized as follows: The Taichung plant categorizes per GMP quality management standards (Minor, Major, critical). In Taipei headquarter, the risk levels are categorized into: High risk: meeting 3 or more of the above criteria; Medium risk: meeting 2 or 1 of the above criteria; Low risk: not meeting any of the above criteria.

Supplier Management Mechanism

PharmaEssentia's Management Strategies for Suppliers/Supplied Products with Different Risk Levels are as follows:

Risk Level	Management Mechanisms for Suppliers
High Risk	1. Strategic Alliances: Actively strengthen alliances with suppliers for mutual benefit and symbiosis. 2. Maintain good interaction with suppliers to establish strong cooperative relationships. 3. Evaluate Total Cost of Ownership (TCO): Assessing performance metrics such as service scope, quality, and timelines. 4. Signing contracts to ensure service quality, content, and sources. 5. In-house production (or reprocessing) 6. Ensure stability of the supply source 7. Maintain good interaction with suppliers and utilize service information provided by them. 8. Develop new suppliers and alternative sources (Second source) to mitigate risks of material shortages
Medium Risk	1. For materials used frequently, request suppliers to maintain inventory to facilitate timely delivery. 2. Integrate procurement items and departmental needs. 3. For materials with monopolistic competition, actively request and compare prices. 4. Analyze item prices and costs.
Low Risk	1. Implement routine procurement, following and maintaining the appropriate procurement procedures. 2. Centralize ordering quantities and frequencies

Annual Evaluation of Suppliers/Contractors

Our company conducts annual evaluations of suppliers/contractors according to the Supplier Audit Procedures, using a combination of internal review and on-site audits. In the case of high-risk suppliers, the re-evaluation frequency may be shortened, and improvement actions taken. If significant deficiencies are identified, procurement activities will be immediately suspended. In 2023, internal review assessments were completed 100% for all 188 suppliers, and the on-site audit plan included a total of 20 domestic and international suppliers (including 2 remote audits of foreign suppliers), all of which were completed 100%. During the supplier on-site audit, it was found that one supplier violated labor standards, and the supplier was requested to make improvements.

Remediation Procedures for Negative Impacts GRI 2-25, 2-26

PharmaEssentia regularly conducts environmental and social regulatory audits of suppliers. When deficiencies are found, relevant units conduct investigations and inquiries. In 2023, regarding the supplier violation of labor standards mentioned above, a supplier due diligence investigation was conducted, and follow-up actions to address the identified improvement areas were tracked. By the end of 2023, the tracking results showed that the supplier had been acquired and merged into another company.

100%

Completed the signing of supplier quality agreement and internal assessment for 5 consecutive years

2. Supply Chain Management and Resilience Enhancement

PharmaEssentia continues to enhance supply chain management and contingency capabilities, maintaining safety stock levels, establishing alternative material sources, and balancing cost considerations with long-term material reserves to rapidly respond and avoid disruptions to the supply chain from events such as the COVID-19 pandemic or other emergencies. Actively reducing the risk of material shortages that cannot be timely and stably supplied. The following are the internal supplier management tasks:

1. Monitor potential factors affecting the supply chain (diseases, climate change, natural disasters, etc.).
2. Strengthen supplier management adaptability and contingency capabilities.
3. Deepen communication with suppliers, monitor the status of material transportation in real-time, and obtain complete information on transportation logistics.
4. Update the time of arrival for supplier raw material purchases.
5. Increase safety stock levels, understanding changes in demand from frontline medical institutions and patients.
6. Pay attention to the situation in the countries where raw materials are produced, assess the risk of material shortages, and respond in advance.
7. Establish alternative material sources to reduce the risk of material shortages.

3. Establishing Alternative Material Sources

To prevent risks due to unforeseen events, we follow internal SOP and conduct comprehensive investigations into raw materials and determine importing priority of alternative sources.

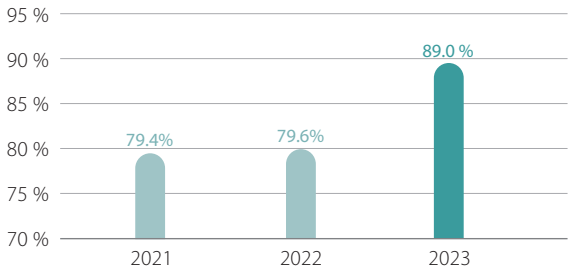
Inventory of Raw Materials Requiring the Establishment of Alternative Sources	Performing Quality Assurance Checks	Process Development Experimental Validation	Quality Assurance Continuous Monitoring
The following criteria are used for assessment: • Manufacturer notification of impending discontinuation. • Regulatory agency requirements. • Conducting material risk assessment based on the "Criticality Assessment of Materials" procedure.	Continuing Quality Assurance Checks for Materials at Immediate Risk of Supply Disruption	Upon successful trial production, raw materials passing the test enter the GMP control procedures (supplier assessment, specification inspection, method establishment, etc.). After completing the relevant procedures, they are added to the backup list	The Quality Assurance department continuously monitors testing data and documentation at all stages of material source development to ensure compliance with regulatory standards throughout the entire process.

Local Procurement

In 2023, the proportion of purchases from local suppliers in Taiwan increased to 89%, while the expenditure on purchases from non-local suppliers was 11%. This increase is primarily attributed to the capital expenditures associated with the expansion of the new manufacturing facility in Zhubei. PharmaEssentia, rooted in Taiwan but with a global perspective, prioritizes the development of local partnerships and continues to assess opportunities to increase the proportion of local procurement.

	Year	2021	2022	2023
Local Procurement	Taiwan (%)	79.4%	79.6%	89.0%
Non-local Procurement	Americas (%)	20.5%	20.4%	11.0%
	Other Asia (%)	0.1%	0	0
	Total	100%	100%	100%

Local Procurement Percentage



89%

Proportion of local procurement amount