

# Reusable Transport Packaging:

## State of the Industry Report

*2020*



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**R**eusable transport packaging is ready for takeoff. Systems of product reuse will not only help to combat some of the planet's greatest problems today such as climate change, waste, pollution and natural resource depletions, but reuse will also form the future foundation for lasting economic growth driven by circular principles, innovation and value creation. RPA's inaugural industry survey supports this optimistic view, as 85% of respondents expect that market demand for reusable transport packaging products and services will increase over the next year.

Responses to the survey took place between February 10 – March 13, 2020. During this period, the extent and depth of the novel coronavirus (COVID-19) impacts were not fully accounted on the respondents' outlook for reusable transport packaging. With additional time for reflection on how COVID-19 is changing product sourcing, business operations and supply chain distribution, current commercial disruptions may reduce investments in the short term in favor of temporary measures for economic stability. However, lessons being learned from Covid-19, including the needs for supply chain resiliency, digitization and automation, will provide even more reasons to accelerate transformative systems with reusable packaging.

The Reusable Packaging Association is a non-profit trade organization promoting the use and value of reusable packaging systems. Established in 1999, RPA has two decades of experience in advocating reuse models for the transport packaging of goods. Our first State of the Industry Report serves to highlight where we stand today and where we can go tomorrow, collaboratively, for faster results and meaningful changes on how we design and manage packaging for optimal, sustainable performance in the distribution of goods.

A handwritten signature in white ink on a blue background. The signature is cursive and reads "Tim Debus".

Tim Debus  
President & CEO  
Reusable Packaging Association

# Reusable Transport Packaging: Global Market Overview

In 2020, the global packaging market reached an estimated \$950 billion in value.<sup>1</sup> Approximately \$200 billion of this market is considered “transport” or “transit” packaging.<sup>2</sup> In this context, “transport” connotes the movement of raw materials, commodities, or finished goods from point of production or processing to point of use in a manufacturing or commercial setting involving a business-to-business item transfer or a business-to-consumer item delivery. Most transport packaging is categorized as tertiary in the distribution of bulk items but may also be considered secondary or, to a lesser extent, primary packaging, depending on other product packaging used.

Of the \$200 billion global transport packaging market, roughly half meet the [Reusable Packaging Association’s](#) criteria for “reusable” packaging: designed and manufactured with the physical properties to ensure repeated and lasting uses in a system that features their recovery and return for the intended purpose.<sup>3</sup> Into the global reusable transport packaging (RTP) market falls a wide variety of products, which together comprises the estimated \$100 billion RTP market.



# Global RTP Market Size & Segmentation

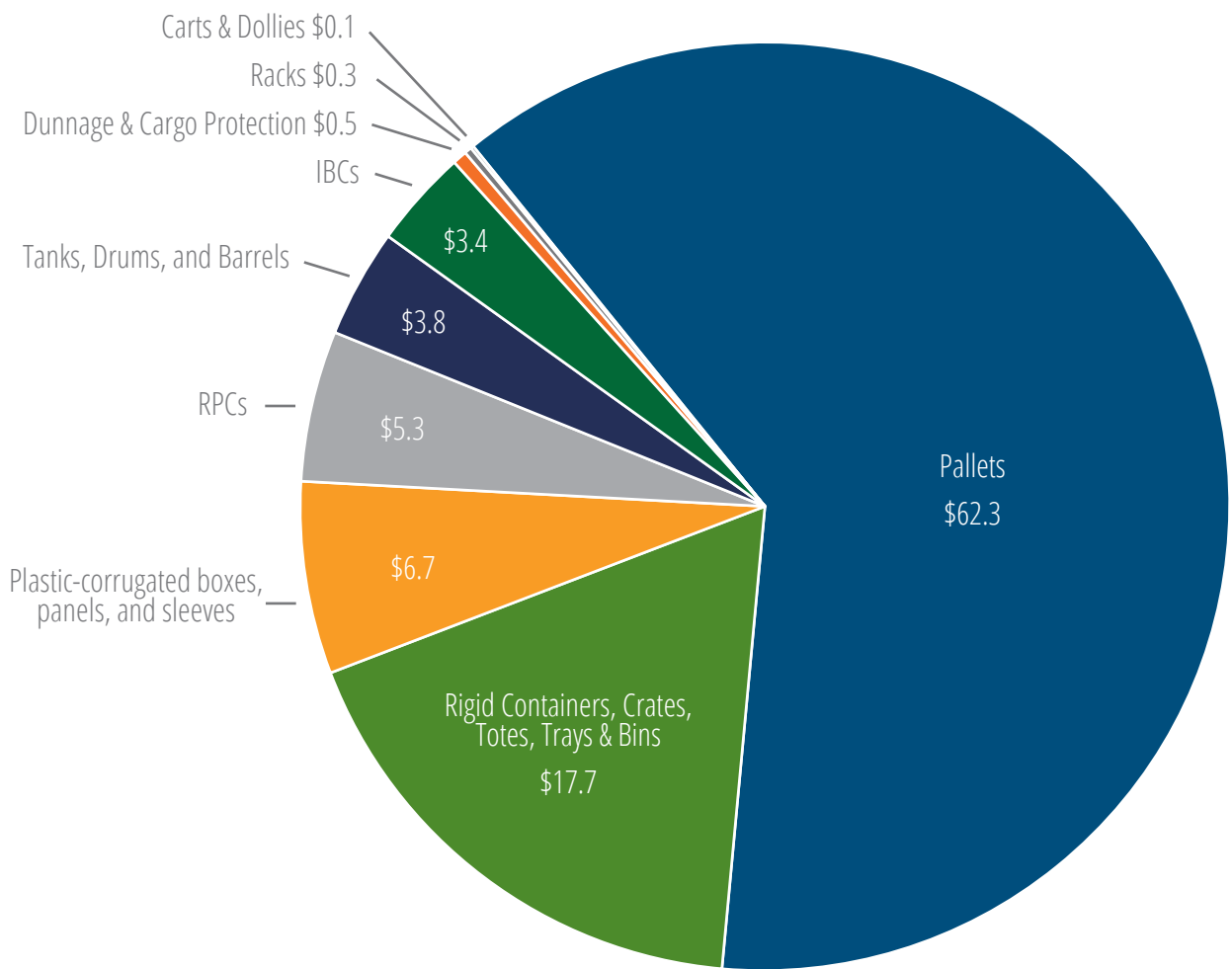
The global RTP market consists of pallets; rigid containers, crates, totes, trays, and bins; plastic-corrugated boxes, panels, and sleeves; reusable plastic containers (RPCs); tanks, drums,

and barrels; intermediate bulk containers (IBCs); dunnage and cargo protection; racks; and carts and dollies. Each type of RTP plays an important role in adding both economic and environmental value to the supply chains in which they are utilized. Below are definitions of each type of RTP and its estimated global market size. The 2020 market size of each category was estimated using a variety of [third-party sources](#).

## Rigid Containers, Crates, Totes, Trays, & Bins \$17.7 billion

This category contains mostly handheld units, some with open tops (no lids), made from plastic or other durable material. Bins are larger, designed to distribute bulk or heavy products, ranging in size from full, half, or quarter pallet dimensions with varying heights.

Global Reusable Transport Packaging Market Value (USD billions)





Trays are handheld packaging units for lightweight items or small unit quantities that typically have a lower profile and an open top and side for access in a stacked arrangement (i.e. bread tray).



*Photo courtesy: SSI Schaefer*

## Plastic-corrugated Boxes, Panels, & Sleeves

\$6.7 billion

Plastic-corrugated packaging is constructed from extruded, twin-wall plastic sheets made from high-impact polypropylene, polyethylene or other plastic resin varieties and formed with a similar makeup to corrugated fiberboard in which both upper and lower surfaces are supported by fluted ribs.



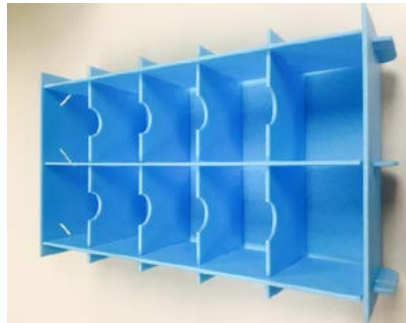
*Photo courtesy: Intoplast*

A wide range of sizes and thickness can produce multiple reusable product types such as handheld boxes and bulk bins from rigid panels and sleeves.

## Foam-based Transport Packaging

*Included in other categories*

High-density, closed-cell foam made from extruded polyethylene and polypropylene are used in transport packaging applications such as trays and dividers where lightweight material,



*Photo courtesy: Worldcell Extrusions*

compression strength, insulation and energy absorption characteristics are desired.

## Reusable Plastic Containers (RPCs)

\$5.3 billion

Containers that are specifically designed and used for the packing and transport of perishable food items from farm or food processing facilities to retail or food service establishments.



*Photo courtesy: IFCO Systems*



*Photo courtesy: Polymer Solutions International*

## Pallets

\$62.3 billion

Portable, horizontal, rigid, composite platforms used as a base for assembling, storing, stacking, handling, and transporting goods as a unit load. (MH1-2016 standard). See "What Is a Pallet?" by [Packaging Revolution](#). This is the largest RTP segment, including both pooled and one-way wood transactions, as all pallets even with varying degrees of durability are designed for extended reuse with repair options.



*Photo courtesy: Schoeller Allibert*

## Intermediate Bulk Containers (IBCs)

\$3.4 billion

Reusable, multi-use industrial-grade containers, predominantly mounted on a pallet or designed for one-piece forklift use, for the mass handling, transport and storage of liquids, bulk solids and powders.

## Dunnage & Cargo Protection

### \$0.5 billion

Components used as part or alongside packaging to protect goods and unit loads during shipment. Dunnage such as dividers, inserts and fillers can be placed



Photo courtesy: Cargo Tuff

inside packaging to separate or secure goods, and dunnage such pallet wraps, straps and airbags can be used on or in between pallet units for load securement



Photo courtesy: Green Spider Pallet Wraps

during movement. Protective reusable dunnage replaces single or limited-use fillers or shrink wrap to pack products or move pallets securely.



Photo courtesy: Big 3 Precision Products

## Racks

### \$0.3 billion

Vertical structures that consists of several layers in the form of shelving for holding multiple items for moving and transport, often designed with wheels for unit mobility.



Photo courtesy: SSI Schaefer

## Carts & Dollies

### \$0.1 billion

Industrial, roll-out carts are large mobile bins generally used for trash or residential solid waste collection



Photo courtesy: Georg Utz

and removal ranging from 16 to 91 gallons in capacity. Dollies are low, mobile platforms or carts typically with four wheels or casters that are used to transport heavy items, which are often boxes or containers stacked with congruent dimensions to create a secure vertical load.



Photo courtesy: CDF Corporation

## Tanks, Drums, & Barrels

### \$3.8 billion

Large packaging units, often made from steel, for the holding and transport of liquids, solids or powders in bulk that typically involve specialized fill and discharge technologies.

# Reusable Transport Packaging Market: Demand Factors

The global packaging market demand for reusable transport packaging changes based on a wide variety of external factors. To better understand expected demand for reusable transport packaging over the next five years, RPA has identified seven key macro factors expected to have the greatest influence over the market for reusable products and services:

- Government regulation
- Public concern for the environment
- Automation
- Labor availability
- Economic drivers
- Raw material sourcing
- Transportation

In the *2020 State of the Reusable Packaging Industry Survey*, respondents were asked for their view on how each factor would impact demand for their company's reusable transport packaging products and/or related services. In this section, we explore each factor alongside the respondents' views.





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## Half of survey respondents said regulation will increase demand for reusables

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### Government Regulation

Historically, government regulations regarding packaging focused primarily on matters of product labeling, consumer information disclosures, and packaged content safety. Government oversight of packaging narrowed depending on the intended function of the packaging, the material from which it was produced, and the industry in which it was used. More recently, however, increased awareness of the environmental burdens of packaging - specifically its [contribution to solid waste](#) - has accelerated government scrutiny and regulatory actions in countries around the world.

While some countries have established waste reduction and recycling targets and outlined timeframes to achieve them, all have fallen short of enacting legislation that meaningfully emphasizes reuse as a more impactful approach over recycling.



Instead, reuse is typically lumped together with recycling in the same goal as an alternative to landfill disposal, despite universal acknowledgement of reuse as the [preferred waste reduction action](#).

While recycling is an important component of any regulatory framework aimed at landfill diversion, the lack of policy differentiation between reuse and recycling makes such regulations less effective by treating waste prevention (reuse) activities the same as waste management (recycling). In other cases, narrowly-defined recycling targets may not “count” reuse initiatives towards meeting the recycling targets, effectively penalizing implementation of the more sustainable of the two models.

### Packaging regulation in the European Union

The European Commission has long been a global leader in legislative efforts to reduce solid waste, and, more recently,

in promoting the circular economy. The EU released its new [Circular Economy Action Plan](#) on March 11, 2020. To ensure that all packaging on the EU market is reusable or recyclable in an economically viable way by 2030, the Commission will target three focus areas. One of them involves driving design for reuse and recyclability of packaging, including considering restrictions on the use of some packaging materials for certain applications where alternative reusable products or systems are possible.

Environmental Action Germany ([Deutsche Umwelthilfe, DUH](#)), a non-profit, welcomed the Commission’s goal to reduce residual waste by 50 percent, implement mandatory targets for recycled content and restrict unnecessary (over)packaging. However, it cautioned, the EU must adopt ambitious measures to promote reuse systems for packaging.

Packaging regulation in the United States

Unlike the EU, the United States has, in general, not legislated packaging waste reduction targets. However, the introduction of China’s *National Sword* policy in 2018 has exposed the underlying weakness of the United States recycling infrastructure. *National Sword* and related actions in Asia to ban recycled scrap material have resulted in a flurry of U.S. legislative activity at the local, state and federal level. See a summary of recent state and federal initiatives [here](#). Some product-specific

bans have been successful, including plastic bags in New York (SB1508), as well as Styrofoam food and drink containers in Maine, Maryland and Washington, D.C. More comprehensive bills introduced in California (SB 54 and AB 1080) during 2019 were aimed in part on eliminating 75% of single-use containers by 2030, but both measures stalled in the face of opposition.

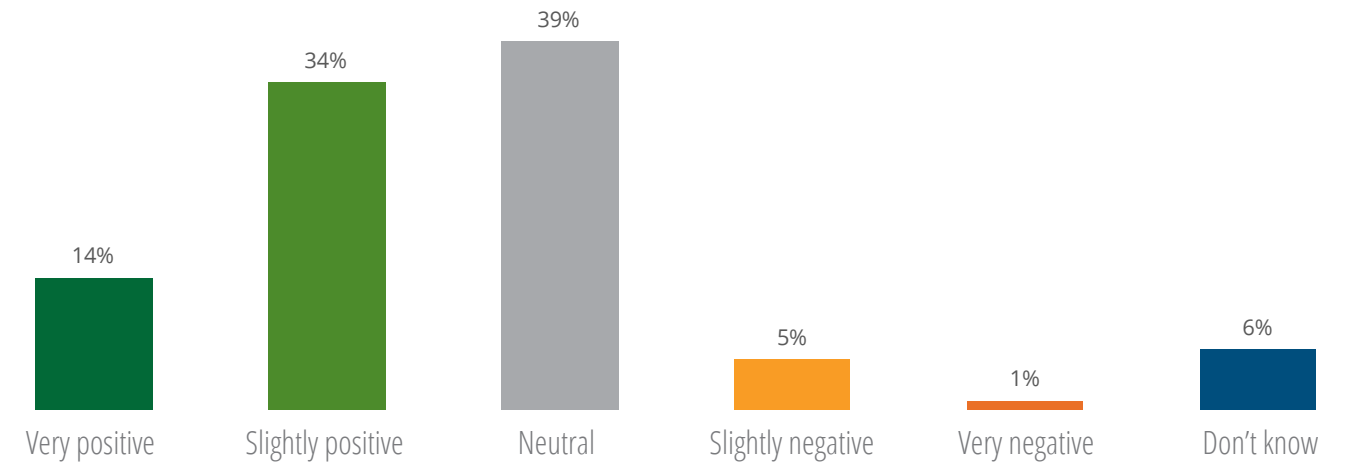
At the federal level, the proposed legislation includes the ambitious Break Free From Plastic Pollution Act of 2020, and the public education-oriented Recycling Enhancements to Collection

and Yield through Consumer Learning and Education (RECYCLE) Act of 2019. The latter initiative seems more likely to pass, albeit being the least likely to create a meaningful reduction in solid waste and as a result, to act as a driver toward the increased usage of reusables and the urgently needed shift to circularity.

Expected impact on the reusable transport packaging industry

While current regulations may not sufficiently emphasize product reuse as a means to reduce solid waste, our

Survey Respondents’ Expected Impact of Government Regulation on Demand for Reusable Transport Packaging over the Next Five Years



survey respondents indicated they feel government regulation will have a neutral to positive impact on demand in the coming years. When asked “How do you expect [government regulation] to impact the reusable packaging industry’s demand for your company’s products/

services over the next 5 years?” or “How do you expect [government regulation] to impact demand for your company’s reusable packaging products and services over the next 5 years?” nearly half of respondents felt government regulation would have a positive impact

on demand for reusable packaging. Another 39% felt government regulation would have neither a positive nor a negative impact and 6% were unsure. Only 6% believed government regulation would have a negative impact on the reusable packaging industry.

# 95% of survey respondents said concern for the environment will increase demand for reusables

## Public Concern for the Environment

Public concern for the environment has been steadily increasing in recent years, led by issues such as climate change, ocean plastic pollution, shoreline littering, and solid waste generation. A poll conducted by *The Washington Post* and the [Kaiser Family Foundation](#) found that nearly 8 in 10 Americans believe that human activity is fueling climate change. Almost 40% believe that climate change is a “crisis,” up from less than 25% five years ago.



The same poll found that climate change scares 57% of teenagers and makes 52% of them angry, reflected in the emergence of new terms such as “eco-anxiety” and “climate depression” that are impacting youth.

It appears the public is even more [apprehensive about ocean plastic](#). When given a list of 10 environmental issues to consider, 65% of Americans said they were either “concerned” or “very concerned” about plastics in the ocean, compared to 58% for climate change.

## Reusables help reduce environmental impact

Reusable packaging plays an important role in reducing the environmental impact associated with packaging and logistics. While a reusable packaging item typically requires more resources to manufacture than a single-use alternative, the former requires fewer resources on a per-use basis over its useful life, even when the energy required for reverse logistics and washing are included in the calculation. Additionally, reusables result in less solid waste and provide superior product



protection to eliminate the negative impact associated with the creation and shipping of products that become unsaleable due to damage.

For example, research from the [Stiftung Initiative Mehrweg](#) (SIM) of the Fraunhofer Institute IBP (Germany) determined that reusable plastic containers (RPCs), a type of reusable packaging used to transport fresh fruit and vegetables, generate approximately 60% fewer greenhouse gas emissions than disposable transport packaging. A thorough life cycle analysis was undertaken for both packaging options, including their actual transport performance in France, Germany, Italy, and the Netherlands. Researchers determined that around 15 tonnes of CO<sub>2</sub> equivalent were emitted when RPCs

were used to ship 1,000 tonnes of fruit and vegetables, versus over 37 tonnes of CO<sub>2</sub> equivalent emissions for cardboard boxes. According to the study, shipments of fruit and vegetables in RPCs required just 3,070 kg of plastic versus 52,200 kg of corrugated cardboard for the same volume of produce shipped.

Similarly, a 2017 study by Franklin Associates in the U.S. also identified reusables as the more sustainable option. It compared RPCs with corrugated containers for the shipment of eleven different types of fresh produce. The study concluded RPCs

produced 31% less global warming potential (CO<sub>2</sub> equivalents) and 86% less solid waste, while requiring 64% less energy and 80% less water, even though the RPCs were washed after every trip (the production of corrugated board is very water-intensive).

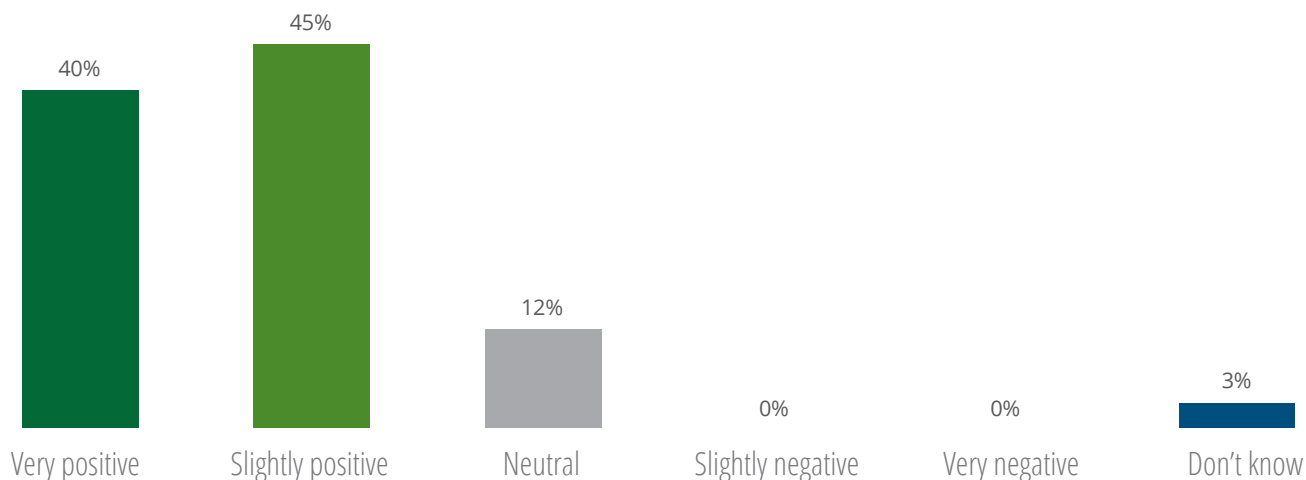
### Expected impact on the reusable transport packaging industry

While public awareness and concern (for any issue) often impacts industries by leading to government action, greater - and faster - impact can be felt in the private

sector, as companies respond to the demands of their customers. This is most certainly the case with environmental concerns, as major consumer packaged goods (CPG) companies and retailers have made public pledges to reduce the environmental footprint of their packaging, specifically through the use of recyclable materials.

Respondents to our survey indicated they expect this concern to continue to pressure companies to make more sustainable packaging choices, including reusable transport packaging. When asked “How do you expect [public

### Survey Respondents’ Expected Impact of Public Concern for the Environment on Demand for Reusable Transport Packaging over the Next Five Years



concern for the environment] to impact the reusable packaging industry’s demand for your company’s products/ services over the next 5 years?” or “How do you expect [public concern for the environment] to impact demand for

your company’s reusable packaging products and services over the next 5 years?” an overwhelming 85% of respondents said that public concern for the environment will positively impact demand for reusable packaging over the

next five years. 12% felt there would be neither a positive nor a negative impact, and 3% didn’t know. No respondents felt concern for the environment would negatively impact the reusable packaging industry.



## Automation

There is a long-standing relationship between reusable transport packaging and automated operating environments. For example, the precision and consistency of packaging design elements and product specifications across reusables has enabled them to be efficiently picked up or retrieved by robotic devices for many years in manufacturing systems such as those used in the automotive industry. Likewise, the use of dimensionally accurate and rigid reusable pallets have been integral to the smooth operation of automated storage and retrieval systems for decades.

And while the symbiotic relationship between reusables and automation is not new, the rapidly increasing adoption of automated storage, handling, and order fulfillment systems for efficiency gains is resulting in an increasing demand for reusables to enable the

**81% of respondents said automation will increase demand for reusables**

consistent and optimal performance of these systems.

The consistency and durability of design and application are the attributes of reusable packaging which are most important in an automated environment. The fact that this packaging performance is achieved for every use contributes to successful automation. While durable, feature-rich and high-performance packaging can cost more compared to single-use disposable packaging, reuse models extending the product value allow companies to realize a lower overall cost over the reusable product's lifetime.

### **Packaging selection can impact the performance of automated systems**

Many automated systems have limited tolerance for packaging performance and specification. For example, a slightly out-of-square pallet or an inadequately stiff pallet might cause it to jam in equipment, as might a container that is susceptible to deformation. Chips from pallets or fiber debris from containers can also compromise the performance of automation, and in the case of food production operations, create a sanitation concern.

The relationship between [autonomous forklifts](#) and [pallets](#) also favors reusables. Autonomous forklifts can be compromised by variability in their handling environment, including floor condition and pallet engagement. While human operators can deal with a loose pallet deck board, for example, an autonomous system as of yet does not have that capability. Pallets that exhibit



*Photo courtesy: Brüel Systems*

some degree of damage may result in difficulties for autonomous forklifts in achieving a clean fork entry. As such, durable reusable pallets can provide a reliable handling environment for peak performance.

Automation trends and reusables

Currently, several diverse trends are strengthening the relationship between reusables and automation:

*Co-design* - In the past, automated system engineers have not always considered

reusable packaging during the design process. As a result, providers have had to create custom packaging solutions to fit these automated systems, needlessly increasing cost. Increasingly, packaging and automation designers are working collaboratively throughout the process to minimize solution costs.

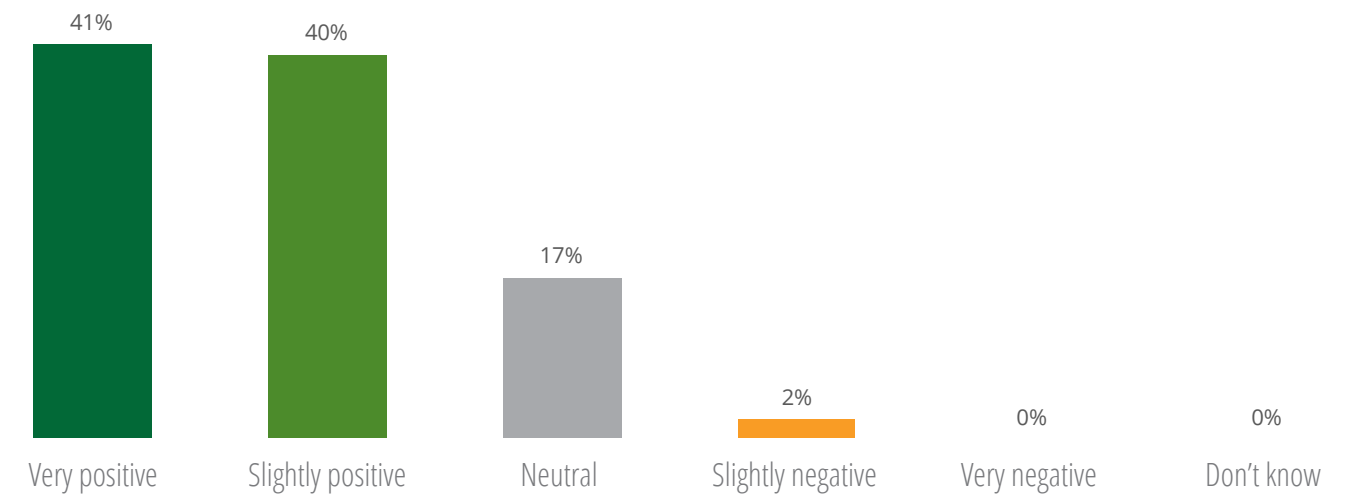
*Order selection* - Automated order selection systems, such as those employed by [Ocado](#), rely on standardized reusable packaging systems.

*Perishables* - Corrugated packaging can be subject to moisture absorption and loss

of strength in wet environments such as those found in fresh produce and dairy. As companies around the world such as [SOK](#) (Finland), [Mercadona](#) (Spain), [Shufersal](#) (Israel) and [Kroger](#) (USA) turn to automation, RPCs and other reusables have become containers of choice.

*Communication* - As Industrial Internet of Things (IIoT) applications expand, automated systems are increasingly looking to communicate with packaging. IoT technologies in reusables can provide cost-effective communication enhancement.

Survey Respondents' Expected Impact of Automation on Demand for Reusable Transport Packaging over the Next Five Years



Expected impact on the reusable transport packaging industry

Respondents to our survey indicated they expect the continued adoption of automated systems to drive higher

demand for reusable packaging. When asked “How do you expect [automation] to impact the reusable packaging industry’s demand for your company’s products/services over the next 5 years?” or “How do you expect [automation] to impact demand for your company’s

reusable packaging products and services over the next 5 years?” 81% of respondents said that automation will positively impact demand for reusable packaging. Only 2% felt automation would negatively impact demand, and the remaining 17% were unsure.

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## 53% of survey respondents said labor availability will increase demand for reusables

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Photo courtesy: *Relogistics Services*

### Labor Availability

Prior to the COVID-19 crisis and resulting business impacts, the U.S. was in the midst of a very tight labor market. Since January 2018, the number of available jobs offered ample opportunities for people looking for work, resulting in demand for labor exceeding supply in many markets. As of December 2019, the unemployment rate remained at just 3.5%. According to a survey by

the [Manpower Group](#), almost 70% of companies reported talent shortages in 2019, up 17% from 2018.

To further exacerbate the situation in material handling-intensive settings such as distribution or fulfillment centers, absenteeism and turnover are very high. This challenge is compounded by the practice of locating major distribution facilities in high-demand areas, resulting in higher competition for employees.

Reusable packaging can help address staffing issues in three ways. First, the use of reusables can improve worker safety and ergonomics, reducing injury and the associated loss of work hours. Second, it helps improve the sustainability of companies, which has been shown to be an important consideration for employee recruitment. And finally, reusables can help facilitate conversion to automated systems that will mechanize tasks, reduce labor pressures and transfer worker productivity into other value-

creating business opportunities.

### Improved employee safety

Overexertion and bodily reaction, which are injuries “resulting from excessive physical effort directed at an outside source” and may involve lifting, pulling, pushing, holding and carrying activities, are the leading nonfatal injury events involving days away from work, [representing 34% of all such injuries](#). In the “transportation and warehousing” sector, where transport packaging is commonly handled, represents 12% of the total overexertion and bodily reaction injuries. Reusables offer many features that promote worker safety, which helps make companies that use reusables more attractive as well as helping reduce worker’s compensation claims. Reusables aid ergonomics through product features such as stable handholds and access doors. They also eliminate the need for box cutters required to open corrugate containers



Photo courtesy: *ID Plastics*

and promote unit load stability during handling and storage. Finally, reusables generate less debris and packaging waste, reducing the threat of slip and fall injuries.

**Better company-wide environmental reputation**

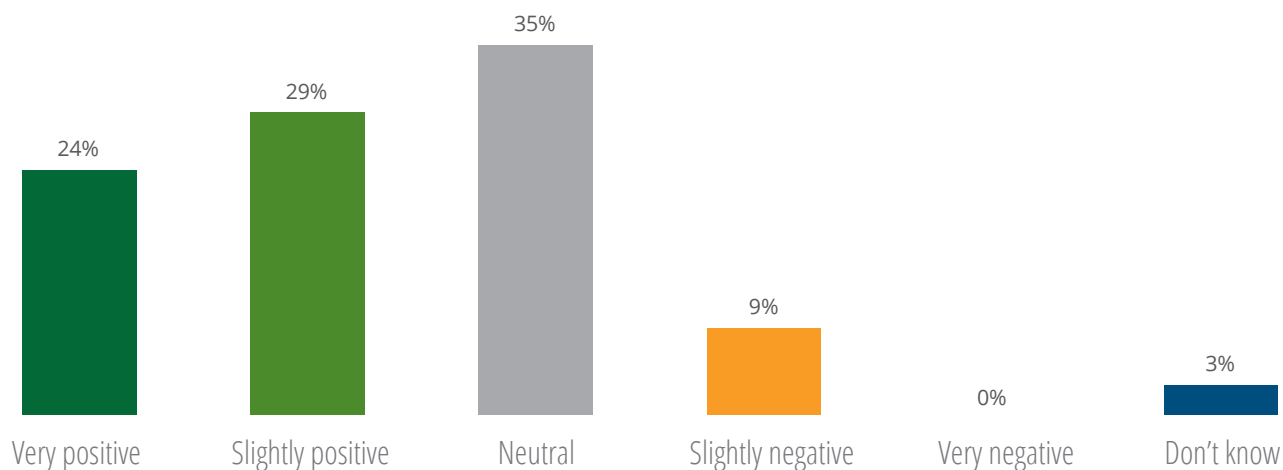
Reusable packaging is associated with a lower environmental footprint than

disposable packaging. Increasingly, a company’s sustainability profile is a factor in both employee and customer retention and engagement. HP Workforce reported that 56% of survey responders believe “ignoring sustainability in the workplace is as bad as ignoring diversity and inclusion,” and 40% indicated they would search for new employment if their current company did not engage in sustainable business practices.

**Successful implementation of automated systems**

As discussed elsewhere in this report, reusable packaging plays an important role in enabling material handling automation through such features as dimensional accuracy, superior strength, resistance to moisture and IoT capability. Automation helps reduce staffing needs as businesses grow while improving

Survey Respondents’ Expected Impact of Labor Availability on Demand for Reusable Transport Packaging over the Next Five Years



workplace conditions for employees working with automation.

**Expected impact on the reusable transport packaging industry**

When asked “How do you expect [labor availability] to impact the reusable packaging industry’s demand for your company’s products/services over the

next 5 years?” or “How do you expect [labor availability] to impact demand for your company’s reusable packaging products and services over the next 5 years?” 53% of respondents indicated labor availability would have a positive impact on demand for reusable transport packaging. 35% did not feel labor availability would impact demand either way, 9% felt it would have a negative impact, and 3% were unsure.

This survey was conducted before the impact of the COVID-19 crisis was being felt by U.S. businesses. They should be taken to indicate respondents’ belief that in tight labor markets, such as the one the U.S. was experiencing through Q1 of 2020, will have a net positive impact on demand for reusable transport packaging.



# 62% of survey respondents said **economic factors** will increase demand for reusables

## Economic Factors

Reusable packaging provides several economic benefits that make them a compelling choice versus single-use options in supply chains where reusables can be efficiently retrieved and placed back into service. The economic benefits of reusables include:

*Packaging material cost reductions* - Even though high-performance reusable packaging may be more expensive to produce than disposable packaging, it typically ends up being more economical per use.



Photo courtesy: [Technology Container Corp](#)

*Reduced waste management costs* - Reusables generate less waste than single-use packaging, resulting in lower disposal fees and requiring less labor associated with handling material for disposal or recycling.

*Improved ergonomics and worker safety* - Reusable packaging eliminates hazardous activities such as box cutting, as well as the safety risks associated with staples, exposed nails or packaging debris on the floor that can lead to slip and fall injuries. Ergonomic handles and access doors also help reduce the risk of injury and enhance productivity during stacking and stocking activities.

*Facilitating automation* - Reusables help facilitate automation, which provides economic benefits in terms of productivity and inventory accuracy gains, as well as through improved storage space and labor utilization.

*Retail sales boost* - When used at retail, reusable packaging designed for placement in retail display fixtures, or modular pallets to promote floor displays, have been proven to create



Photo courtesy: [Perfect Pallets](#)

visual appeal and to boost sales. Additionally, the use of reusables can help [retailers attain their sustainability goals](#) and improve their brand image.

*Quality improvements* - Sturdy reusable packaging has been shown to reduce physical damage to products they hold during transit and handling versus expendable packaging, while container ventilation helps reduced the cooling time for perishables, increasing freshness and prolonging shelf life. When used in food distribution, both of these features act to [reduce food waste](#). Stable unit loads built with reusables are more easily loaded and unloaded.

*Transportation and storage efficiency* - The superior design for stacking allows for products packed in reusables to more fully cube trailers and improve freight

utilization, and also to increase safe stacking height in storage. For example, the use of RPCs for the shipment of case-ready meat can [improve transportation and storage efficiencies by 25%](#).

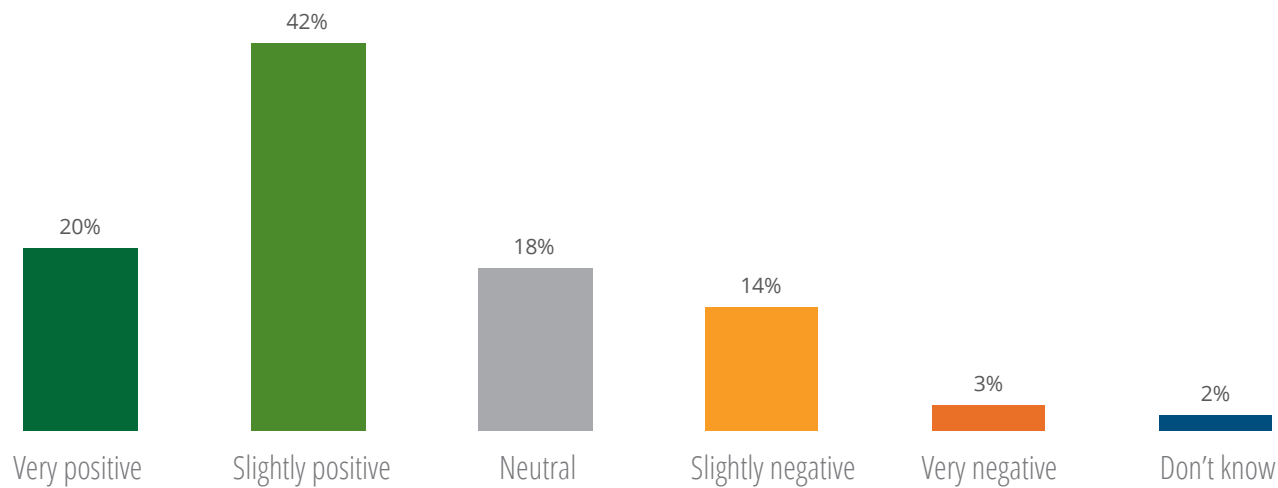
**Expected impact on the reusable transport packaging industry**

When asked “How do you expect [economic factors] to impact the reusable packaging industry’s demand for your company’s products/services over the

next 5 years?” or “How do you expect [economic factors] to impact demand for your company’s reusable packaging products and services over the next 5 years?” 62% of respondents indicated economic factors would have a positive impact on demand over this period. But 17% felt economic factors would have a negative impact on demand, the highest for any of the seven key factors investigated. 18% felt economic factors would not have an impact on demand, and another 2% were unsure.

This survey was conducted just before the impact of the COVID-19 crisis was being felt by most businesses in the U.S. and Europe. However, although survey responses may not fully reflect the highly unusual economic situation in which many countries around the world now find themselves, they still provide important insight from respondents as to reusable packaging’s role in providing long-term economic value for users.

Survey Respondents’ Expected Impact of Economic Factors on Demand for Reusable Transport Packaging over the Next Five Years



## Raw Material Availability

Reusable packaging is created using a variety of materials, including renewable resources, in the case of cellulose-based products, and highly recyclable non-renewable materials in the case of plastic and metal. As the global population grows and aspires to a higher standard of living, the strain on the earth's ability to meet the need for nonrenewable resources is increasing, requiring an urgent switch to a circular approach to raw material management.

A report produced by the [International Resource Panel \(IRP\)](#), part of the UN Environment Programme, reported that rising consumption driven by a growing middle class saw resources extraction increase from 22 billion tons in 1970 to 70 billion tons in 2010. One graphic example of our collective over-

consumption is [Earth Overshoot Day](#) — the date when humanity's demands on nature exceed what analysts estimate the Earth can regenerate over the entire year. Calculated by the Global Footprint Network, the group pegged July 29 as Earth Overshoot Day for 2019, the earliest date on record since the Network began ecological overshoot began tracking in the early 1970s.

We have no choice but to plan for a world that will clamor for more resources than ever before, and unless our approach

**54% of survey respondents said raw material availability will have no impact on demand for reusables**

to production and consumption changes, reach new high-water marks for both resource extraction and waste generation.

As we shift our emphasis from the linear “take, make and trash” supply chain to a circular model that conserves resources, reusable packaging can play a crucial role. Because reusables are built to last, they consume fewer raw materials on a per-use basis than disposable packaging over their long service life. When it eventually becomes uneconomical to repair, much reusable packaging can be recycled. In fact, most reusable packaging vendors have recycling programs in place whereby they will take back damaged packaging or at least connect the customer with a regional recycling partner.

As a packaging system designed for repeated reuse, reusables avoid the requirement for producing a new



*Photo courtesy: Kal-Polymers*

disposable package for each shipment. A reusable container will last dozens or often hundreds of uses. On a per-trip basis, reusables require significantly lower levels of resources such as fossil fuel and water. And at the end of their useful life, reusables can (and almost always are) recycled to produce new reusable packaging products.

**Recycled content usage and utilizing ocean-bound plastics**

Aside from minimizing new raw material usage and enjoying high recycling rates, reusable packaging production can also utilize a great deal of recycled content. Many plastic containers and pallets contain some recycled content ranging up to 100%. High percentages of

recycled materials are common in pallets and thick-walled containers.

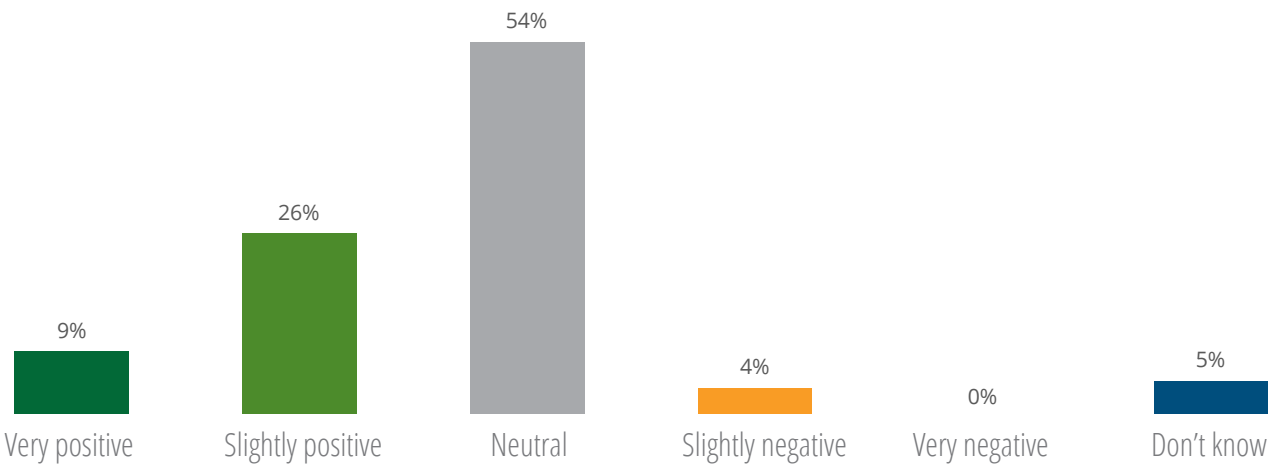
While some plastics are easily recycled, others require extra effort. Ocean-bound plastics refer to those that do not have a ready recycled resin market, and as such are at greater risk of ending up in waterways and oceans. Increasingly, reusable packaging suppliers are developing processes for utilizing such material in their reusable products.

**Expected impact on the reusable transport packaging industry**

When asked “How do you expect [raw material availability] to impact the reusable packaging industry’s demand for your company’s products/services

over the next 5 years?” or “How do you expect [raw material availability] to impact demand for your company’s reusable packaging products and services over the next 5 years?” more than half of respondents did not feel the issue would have much of an impact over the period. Just over one-third of respondents (35%) felt raw material availability would have a positive impact on demand, 4% felt the impact would be negative, and the remaining 5% were unsure.

Survey Respondents’ Expected Impact of Raw Material Availability on Demand for Reusable Transport Packaging over the Next Five Years





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# Reusable packaging can help make transport more efficient

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## Transportation

Reusable packaging drives transport efficiency in several ways. It can help increase the value density of a freight load through design that allows for higher stacking or improved part/product density within the conveyance. Also, highly stable unit loads comprised of reusables can be loaded and unloaded quickly, helping to reduce time at the dock.

Additionally, reusables can help to maintain product quality, resulting in fewer delays or costly replacement shipments resulting from product damage. Finally, through IoT enabled reusables, updated information about product condition or events can enable tactical in-transit decisions as well as the collection of cumulative data to help supply chain participants better optimize their supply chains.



### Improved load value density

It goes without saying that supply chains can reduce transportation cost on a per-item basis if more product that can be loaded on a trailer or into an ocean container. Reusables help improve the value density of loads in several ways. In the case of crushable products such as fresh produce or case-ready meat, for example, the superior strength of RPCs allows for unit loads to be stacked higher than would be possible with disposable packaging.



Photo courtesy: CHEP

In applications such as durable good manufacturing, reusable packaging designers excel at creative solutions that regularly enable improved part density in a container. Reusable packaging designers also address the value density challenge through designing containers that best fit the conveyance, such as reusable bulk containers designed to optimize the utilization of ocean containers.

### More efficient loading and unloading

Because reusable handheld containers and bulk containers alike create extremely stable unit loads, they can be quickly loaded and unloaded from trailers, while standard containers can help streamline the receiving verification

process. Both of these benefits help expedite a quicker turnaround of transport vehicles at the dock.

**Avoiding load damage claims and expedited replacement shipments**

Reusables help to improve product protection and are associated with less product damage than disposable packaging. Regarding transport, the reduced occurrence of product damage translates into fewer time-consuming delays during the receiving process,

potential part shortages, and also the cost of expedited shipments that may be needed to replace damaged parts.

**IoT enabled sensors can optimize transportation**

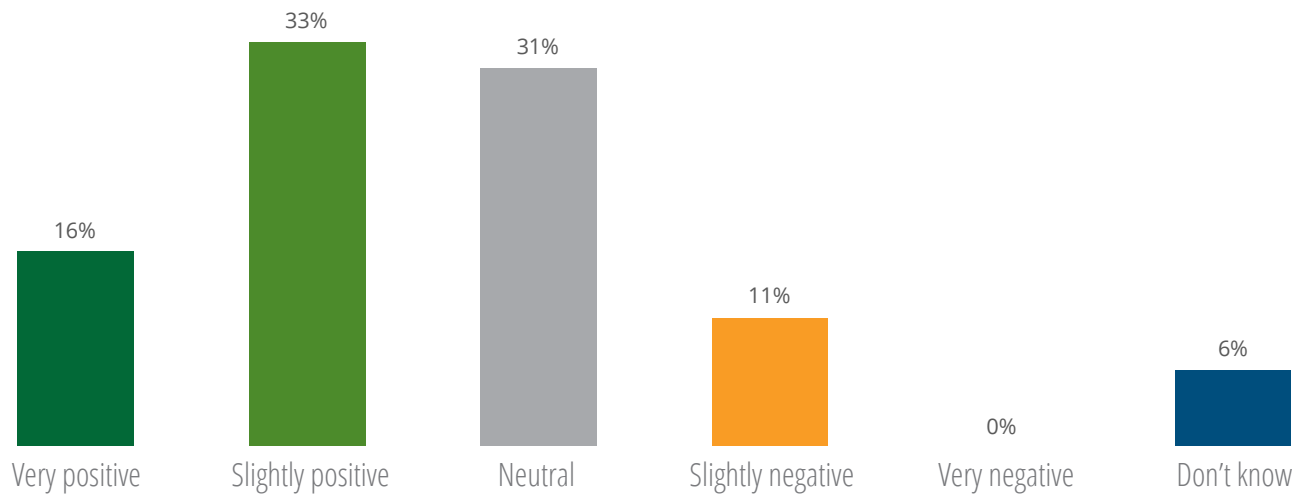
As IoT enabled sensors in reusable packaging continue to gain acceptance, they promise to help promote further transportation efficiencies. For example, the enhanced accuracy of shipping and receiving information can help improve operational efficiency and accuracy. IoT enabled sensors can aid in identifying in



Photo courtesy: *Polymer Logistics*

real-time the occurrence of distressed merchandise at a granular level to enable a timely response, and through data analytics to identify bottlenecks or other inefficiencies.

**Survey Respondents’ Expected Impact of Transportation on Demand for Reusable Transport Packaging over the Next Five Years**



**Expected impact on the reusable transport packaging industry**

When asked “How do you expect [transportation] to impact the reusable packaging industry’s demand for your

company’s products/services over the next 5 years?” or “How do you expect [transportation] to impact demand for your company’s reusable packaging products and services over the next 5 years?” nearly half (49%) of respondents felt transportation would positively

impact demand during the period. Nearly one-third (31%) did not feel the issue would have much of an impact over the period, 11% felt the impact would be negative, and 6% were unsure.

# 2020 State of the Reusable Packaging Industry Survey Results

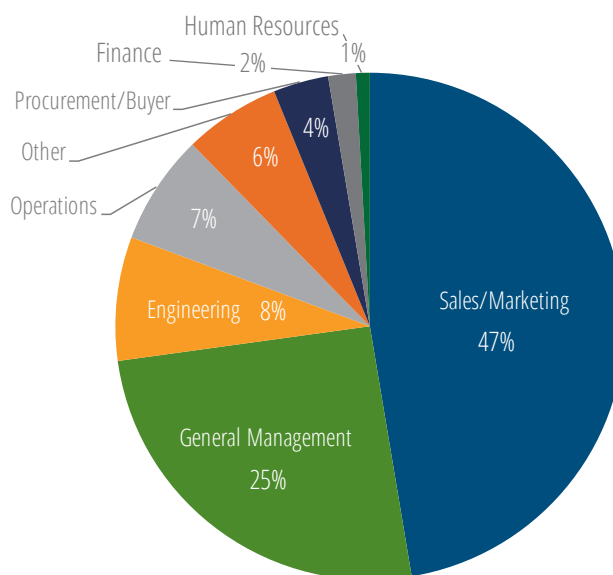


# About the 2020 State of the Reusable Packaging Industry Survey

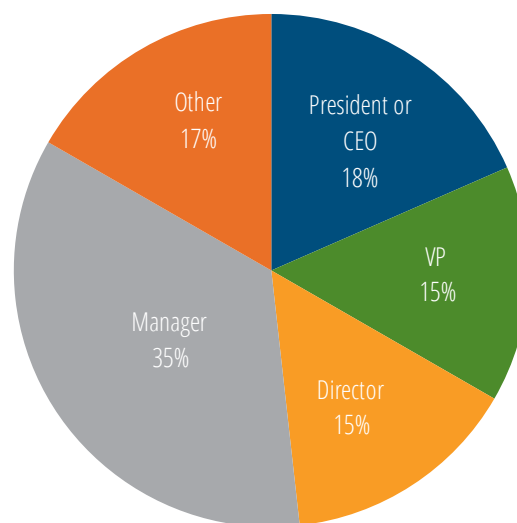
The first-ever *State of the Reusable Packaging Industry Survey* was an online survey conducted between February 10 and March 13, 2020 by the Reusable Packaging Association. The survey's intent was to gather insights into recent reusable transport packaging industry performance as well as expert predictions for the future growth of the industry and the trends and market forces that will shape this growth.

Survey respondents included manufacturers and poolers of reusable transport packaging products, primary users of these products, and service providers to the reusable transport packaging industry. Within their organizations, nearly half of respondents were in the Sales or Marketing function and a quarter were General Management. Over one-third were Managers, 18% were Presidents or CEOs, 15% were VPs and Directors, and the remaining 17% hold Other titles (Engineer, Analyst, etc.)

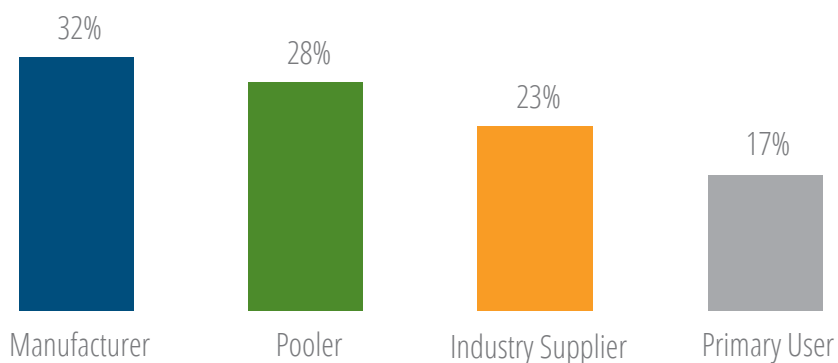
## Survey Respondents' Job Function



## Survey Respondents' Role in Their Organization



## Survey Respondents' Role in the Reusable Transport Packaging Industry







# Demand for reusable transport packaging products & related services over the prior 12 months

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*Photo courtesy: Relogistics Services*

**66%**  
of survey  
respondents  
said demand  
for reusable  
transport  
packaging  
products and  
services has  
**increased**  
over the past  
12 months.

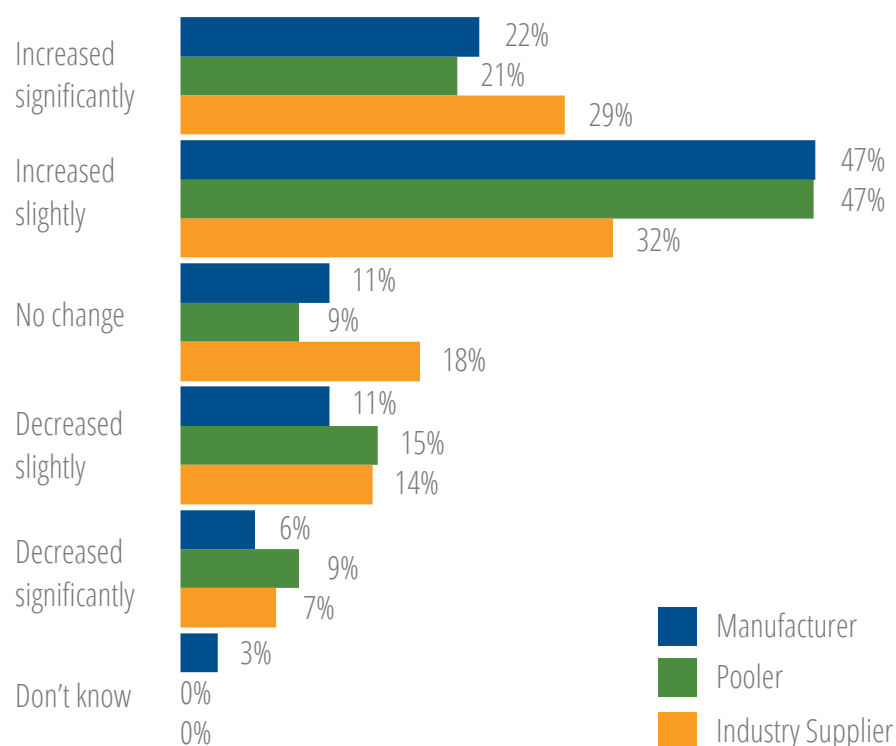
Demand for reusable packaging products and related services have grown over the past 12 months (Feb/Mar 2019 - Feb/Mar 2020) according to 66% of survey respondents. Nearly 70% of reusable packaging manufacturers and poolers reported increases in demand, while closer to 60% of industry service providers reported the same.

When manufacturers and poolers were asked to "Describe the demand for your company's reusable packaging products or services today compared to 12 months ago," 22% of manufacturers and 21% of poolers indicated demand had "increased significantly," while 47% of respondents in each group

said demand had "increased slightly." Only 6% of manufacturers and 9% of poolers reported a significant decrease in demand, and another 11% and 15%, respectively, reported slight decreases.

When asked "How has the reusable packaging industry's demand for your company's products or services changed compared to 12 months ago?" suppliers and service providers to the reusable packaging industry likewise reported an increase in demand over the past 12 months, with 29% experiencing a significant increase and 32% reporting a slight increase. Only 7% reported a significant decrease, and 14% a slight decrease.

Responses by Role in the  
Reusable Transport Packaging Industry



# Prior 12-month demand for manufacturers & poolers of reusable transport packaging, by material type

To analyze the impact of the material used to manufacture reusable packaging on the prior 12 months' demand, results were segmented by response to the question, "Approximately what % of your company's reusable packaging is made from the following materials..." and grouped by dominant material type.

No less than 50% of respondents in any category of material reported increases in demand over the last 12 months. However, differences in stated demand

were visible between material types: a high of 83% of respondents in the "wood" category reported increases over the period, the most of any material category.

The "rigid plastic" and "metal" categories had the next highest number of responses indicating increases, with 68% and 67%, respectively, and 23% of those increases were significant for the "rigid plastic" category. Interestingly, 25-30% of respondents in each of the plastics

categories also reported *decreases* during the period, indicating a variance of demand changes for plastic products in the past year.

Demand for woven products was similarly variable, as half of respondents indicated increases, a quarter decreases, and a quarter were unsure. Respondents in both the "foam" and "composite" categories unanimously reported slight increases.

Manufacturer & Pooler Responses by Dominant Product Material Type



# Prior 12-month demand for manufacturers & poolers of reusable transport packaging, by market vertical

To analyze the impact of different customer verticals' demand for reusable packaging over the prior 12 months, results were segmented by response to the question, "Approximately what % of your company's reusable packaging revenue comes from customers in the following industries..." and grouped by dominant customer vertical served.

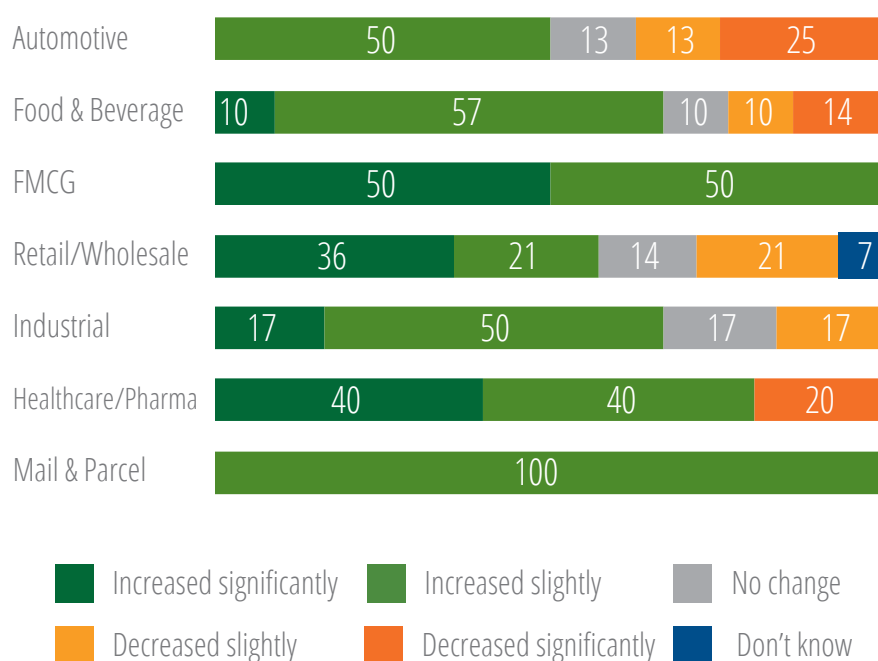
100% of respondents from manufacturers and poolers focused on the Fast-moving

Consumer Goods (FMCG) and Mail & Parcel industries reported increased demand over the prior 12-month period. 80% of Healthcare/Pharmaceutical respondents also stated increases, while the remaining 20% indicated decreases. 67% of Industrial-focused respondents reported increases, and only 17% indicated decreases.

Food & Beverage-focused respondents were slightly less positive, as 67% of

respondents reported increases, but 24% stated decreases over the period. 57% of Retail and Wholesale focused respondents reported increases, and 21% decreases. For manufacturers and poolers mainly serving the Automotive industry, demand for the prior 12 months appears to have been mixed, as 50% indicated an increase and 38% a decrease.

## Manufacturer & Pooler Responses by Dominant Market Vertical



# Prior 12-month demand for manufacturers & poolers of reusable transport packaging, by product type

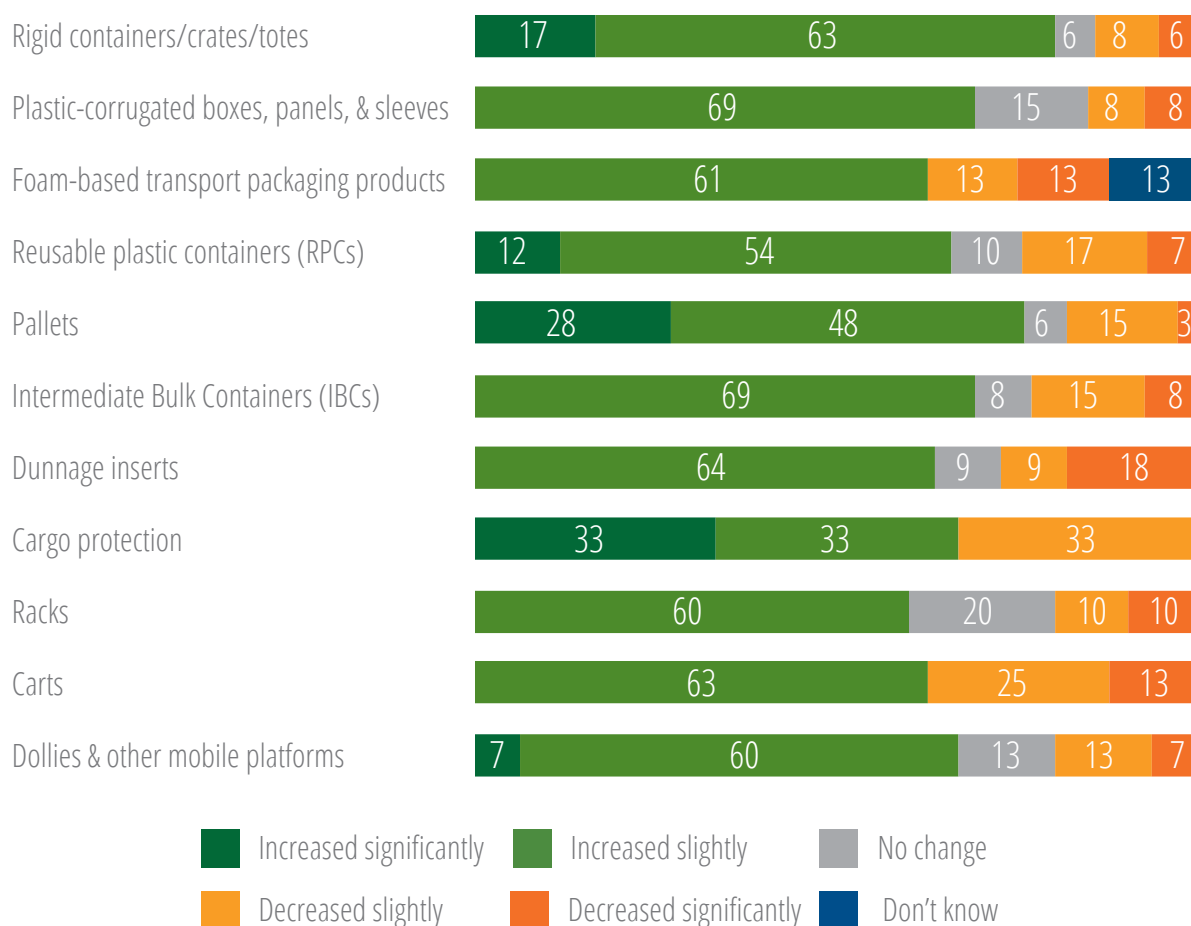
To analyze the impact of the type of reusable transport packaging on the prior 12 months' demand, results were segmented by response to the question, "Which of the following types of reusable packaging does your company sell or rent (check all that apply)..." and grouped by product type selection.

More than 75% of respondents from manufacturers and poolers of rigid containers/crates/totes and pallets reported increased demand over the prior 12 months, and only 14% and 18% indicated decreases, respectively.

Two-thirds or more of respondents from Plastic-corrugated boxes, panels

and sleeves; Reusable plastic containers (RPCs); Intermediate Bulk Containers (IBCs); Cargo protection; and Dollies and other mobile platforms stated increased demand over the period. Between 60-65% of respondents from Foam-based transport packaging products, Dunnage, Carts, and Racks reported increases.

## Manufacturer & Pooler Responses by Dominant Product Type





# Prior 12-month demand for reusable transport packaging industry suppliers, by product/service

To analyze demand for various products and services supplied to the reusable transport packaging industry, responses from respondents who identified themselves as a “supplier or service provider for reusable packaging systems” were asked to identify “Which product(s) or service(s) does your company provide to reusable packaging systems (check all that apply)...” and “How has the reusable packaging industry’s demand for your company’s products or services changed compared to 12 months ago?” Responses

to this question were then segmented by product/service provided to the industry.

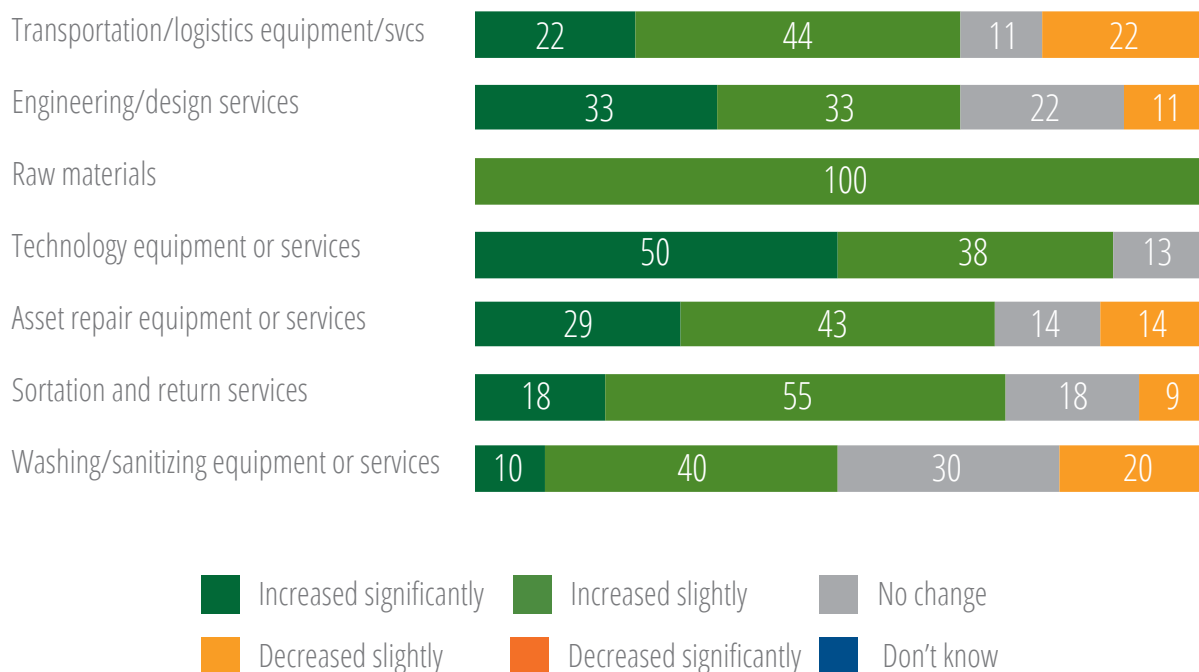
100% of respondents providing raw materials to the industry reported increased demand over the prior 12 months, as did 88% of technology equipment or services providers.

Over two-thirds of respondents providing sortation and return services, asset repair equipment or services, engineering/design services, and transportation and

logistics equipment or services reported an increase in demand over the period, though 22% of respondents providing transportation and logistics reported decreased demand, the highest of any category.

Only half of washing and sanitizing equipment and services providers reported increased demand over the prior 12-month period, 30% said demand hadn’t changed, and 20% said demand had decreased.

## Industry Supplier Responses by Dominant Product or Service Type



A photograph of an industrial facility, likely a water treatment plant. In the foreground, there are large, grey, horizontal pipes. Above them, a complex system of metal frames and conveyor belts is visible, with several black plastic crates or bins placed on the belts. In the background, there are yellow safety cages and more industrial structures. The overall scene is brightly lit, suggesting an indoor or well-lit outdoor environment.

Expected demand for reusable  
transport packaging products  
& related services over the next  
12 months

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*Photo courtesy: Brüel Systems*

Demand for reusable transport packaging products and related services is expected to grow over the next 12 months (Feb/Mar 2020 - Feb/Mar 2021) according to 85% of survey respondents.

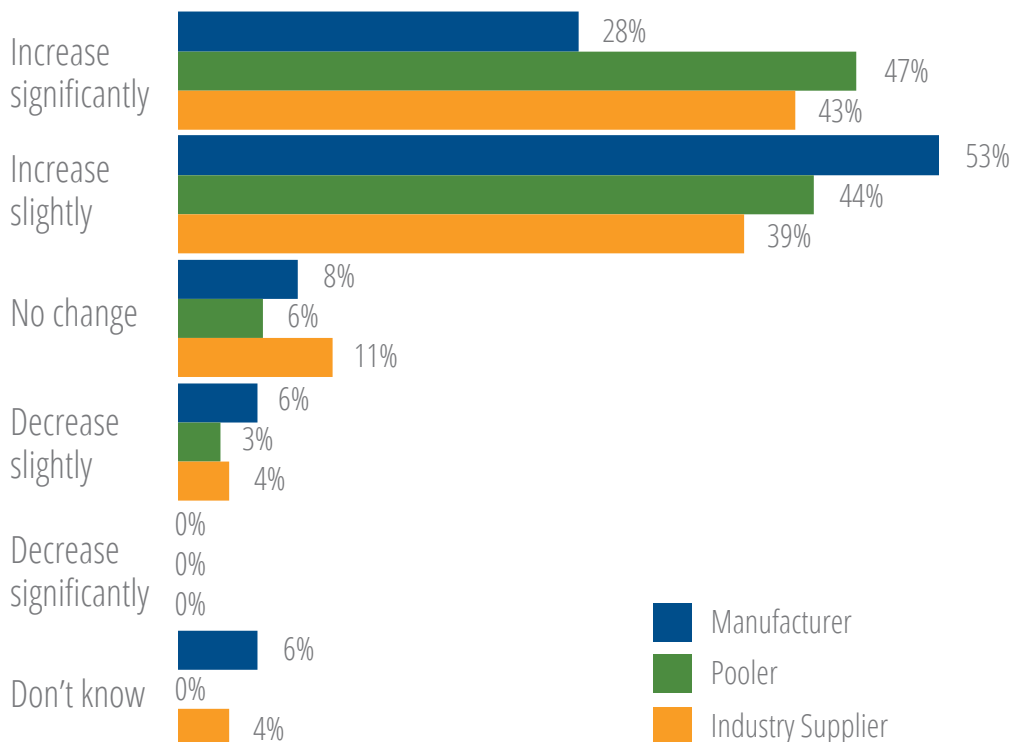
When manufacturers and poolers were asked, “How do you expect demand for your company’s reusable packaging products or services to change in the next 12 months?” 81% of manufacturers and 91% of poolers said they expect demand for their company’s products and services to increase; 28% and 47%, respectively, expect those increases to be significant. Only 6% of manufacturers

and 3% of poolers expect demand to decrease in the coming year.

For their part, when asked, “How do you expect the reusable packaging industry’s demand for your company’s products or services to change in the next 12 months?” industry service providers also overwhelmingly felt demand for their products and services would increase, and 43% thought that demand would be significant. Only 4% of respondents in this category felt demand would decrease over the coming year, and 11% predict there will not be much change.

**85%**  
expect demand  
for reusable  
transport  
packaging  
products, and  
services to  
increase  
over the next  
12 months.

Responses by Role in the  
Reusable Transport Packaging Industry



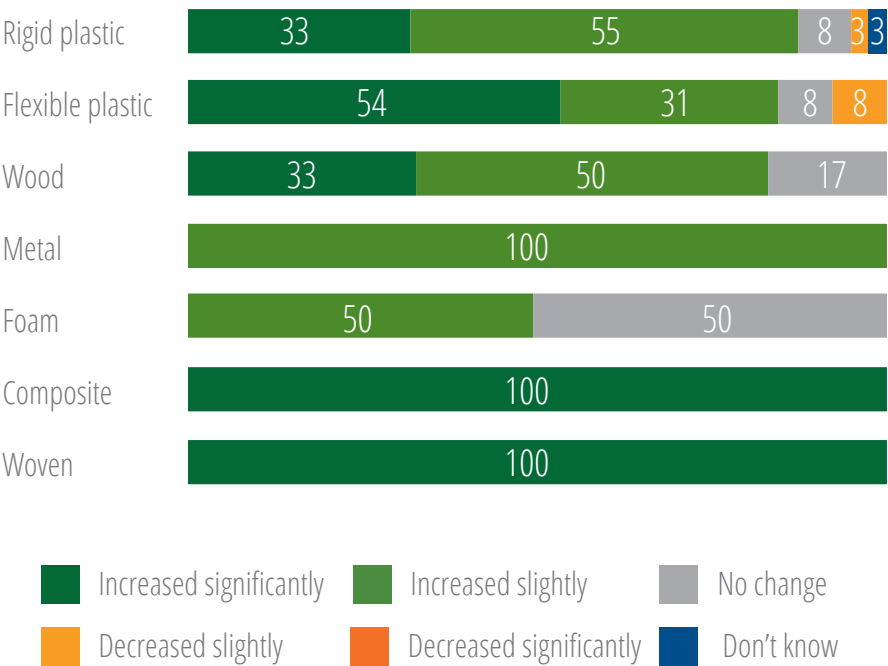
# 12-month demand expectations for manufacturers & poolers of reusable transport packaging, by material type

To analyze the impact of the material used to manufacture reusable packaging on expected demand for reusable packaging during the next 12 months, results were segmented by response to the question, “Approximately what % of your company’s reusable packaging is made from the following materials...” and grouped by dominant material type. Responses overwhelmingly indicate market expectations for growth in the coming year.

With the exception of respondents whose company mainly produces foam-based reusable packaging, over 80% of respondents representing all material types expect increased demand for their products in the next 12 months (only 50% of foam-based packaging respondents expected an increase in demand). Notably, 100% of respondents representing majority composite- and woven-based reusable packaging products expect an increase in demand.

The rigid and flexible plastic categories were the only two in which any respondents expected decreases in demand during the next 12 months, as 3% and 8% of participants responded that way, respectively. 50% of foam-based product respondents felt there would be no change in demand, as did 17% of wood-based product respondents and 8% of both rigid- and plastic-based product respondents.

Manufacturer & Pooler Responses by Dominant Product Material Type





# 12-month demand expectations for manufacturers & poolers of reusable transport packaging, by market vertical

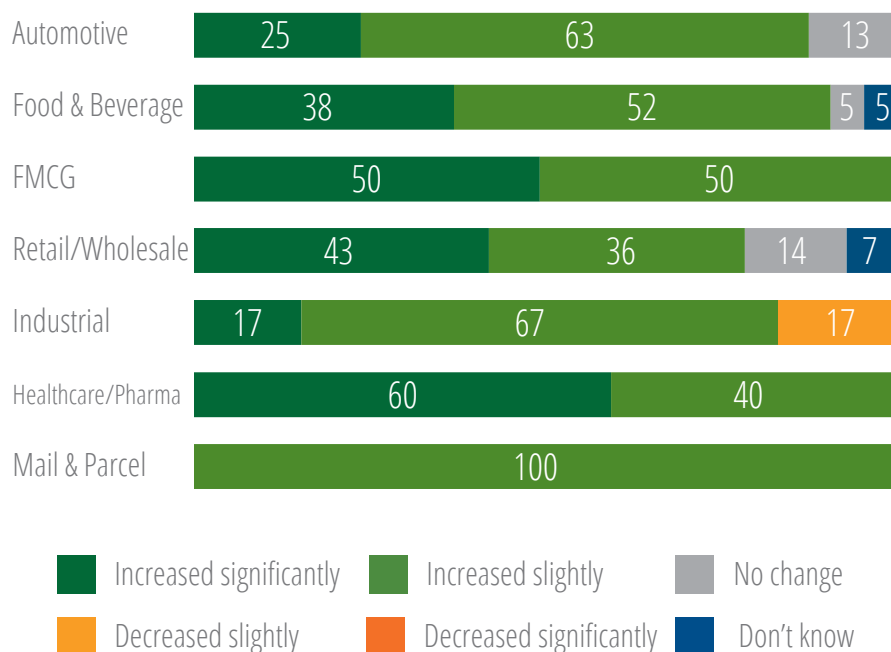
To analyze the impact of different customer verticals' on expected demand for reusable packaging during the next 12 months, results were segmented by response to the question, "Approximately what % of your company's reusable packaging revenue comes from customers in the following industries..." and grouped by dominant market vertical served.

Regardless of the dominant market vertical served, respondents overwhelmingly expected increased demand for their companies' reusable transport packaging products and services in the coming year.

100% of respondents representing companies primarily focused on the Mail & Parcel, Healthcare & Pharmaceutical, and Fast Moving Consumer Goods

(FMCG) industries reported expecting increased demand for their reusable packaging products and services. 90% of Food & Beverage- and 88% of Automotive-focused respondents also expected increases, as did 83% of Industrial- and 79% of Retail & Wholesale-focused respondents. Only Industrial-focused participants reported expecting any decreases, with 17% responding this way.

## Manufacturer & Pooler Responses by Dominant Market Vertical





# 12-month demand expectations for manufacturers & poolers of reusable transport packaging, by product type

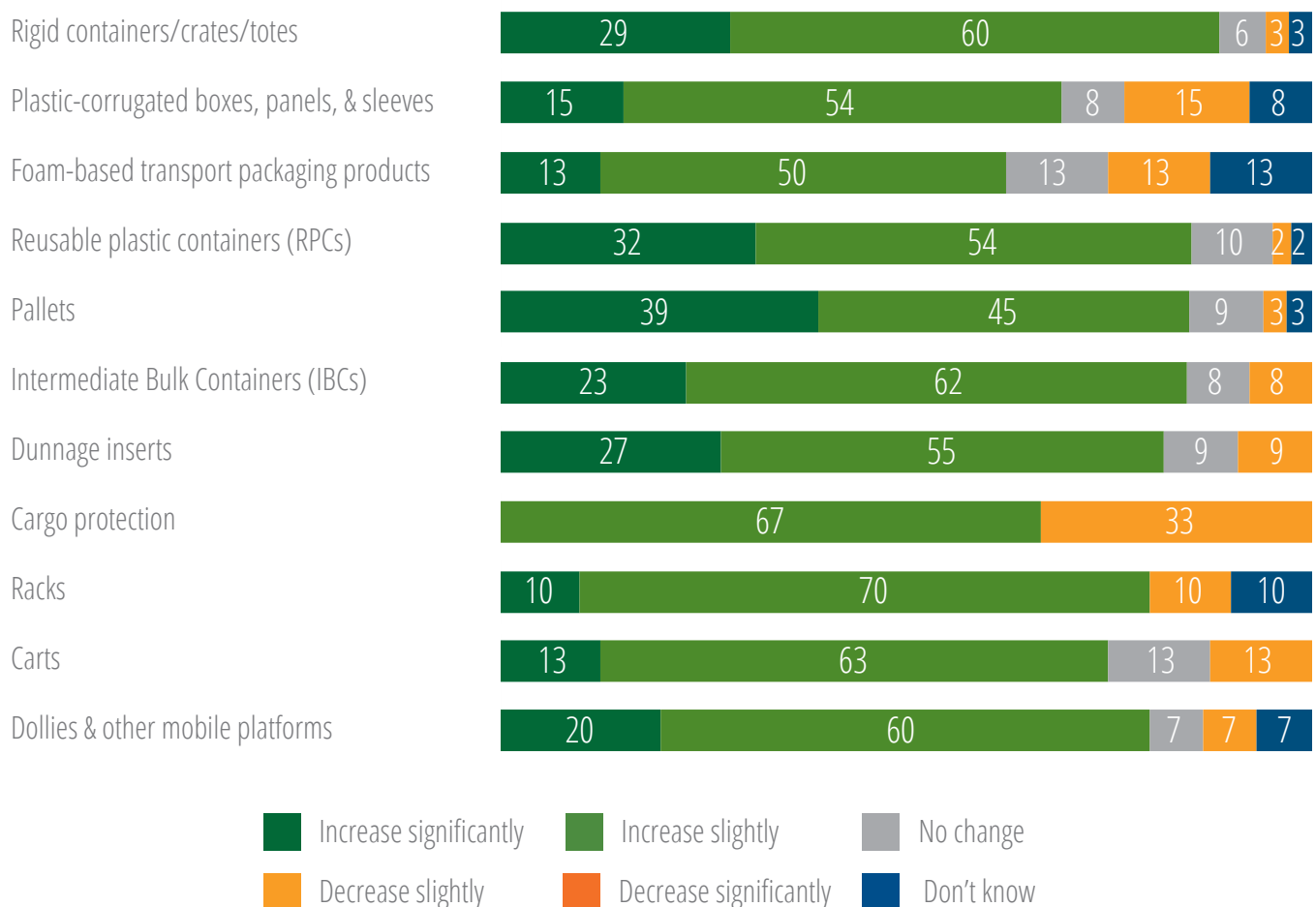
To analyze the impact of the type of reusable transport packaging on expected demand for reusable packaging during the next 12 months, results were segmented by response to the question, “Which of the following types of reusable packaging does your

company sell or rent (check all that apply)...” and grouped by product type selection.

Over 80% of respondents representing companies focused on Rigid Containers/ Crates/Totes, RPCs, IBCs, and pallets

reported expecting increased demand over the next year; between 63-75% of the remaining product types’ respondents felt the same. Cargo Protection respondents had the largest share (33%) expecting a decrease over the same period.

## Manufacturer & Pooler Responses by Dominant Product Type



# 12-month demand expectations for reusable transport packaging industry suppliers, by product/service

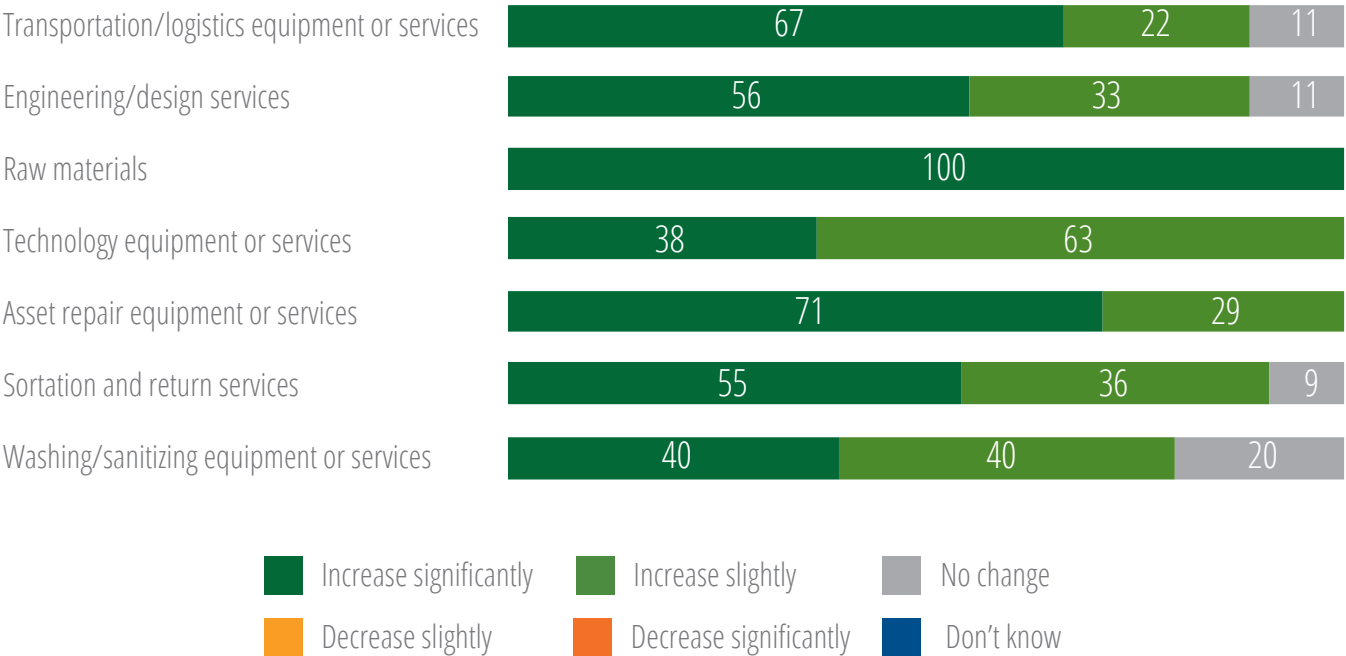
To analyze demand for various products and services supplied to the reusable transport packaging industry, responses from respondents who identified themselves as a “supplier or service provider for reusable packaging systems” were asked to identify “Which product(s) or service(s) does your company provide to reusable packaging systems (check all that apply)...” and “How do you expect the reusable packaging industry’s

demand for your company’s products or services to change in the next 12 months?” Responses to this question were then segmented by product/service provided to the industry.

Regardless of the product or service, respondents overwhelmingly believed demand would increase in the coming 12 months, as 80% or more of participants responded in this way.

100% of respondents focused on Raw Materials expected significant increases in the next year, and 71% of Asset Repair Equipment or Services and 67% of Transportation/Logistics Equipment or Services agreed.

Industry Supplier Responses by Dominant Product or Service Type





# Appendix

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*Photo courtesy: Perfect Pallets*

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