



### Product Description

Fresh globe artichokes (*Cynara cardunculus*). Does not include artichoke dip or canned artichoke.

### Mission

The mission of The Sustainability Consortium (TSC) is to improve the sustainability of products when they are made, purchased, and used, with a focus on manufacturers and the retail buyers who decide what products to carry in stores. The information in this document is drawn from our detailed research on known and potential social and environmental impacts across product life cycles. TSC acknowledges that other issues exist, but we have included here those that are most relevant to the decision making of retail buying teams and manufacturers. The topics are listed alphabetically for ease of reading; the order does not represent prioritization or other criteria.



## Managing the Supply Chain

### Biodiversity

Certain global pollinator populations, including honey bees, other managed bees, and wild bees, are experiencing increased health and population challenges due to a diverse mix of factors including parasites, pathogens, predators, exposure to crop and bee protection products, habitat loss, lack of nesting sites, poor quality forage, and queen issues. Growers can help to reduce these impacts by using integrated pest management, planting pollinator habitat on marginal land, and maintaining natural habitat around the farm. Supply chain partners can conduct research on the causes of pollinator decline and invest in prevention and mitigation practices.

### Pesticides

Improper use of pesticides can impact workers and nearby ecosystems and communities. If growers use pesticides, they should read the label and follow usage directions exactly. Workers should be trained and provided with protective gear to prevent exposure to themselves and the environment during handling or application. Consultation with experts can help determine the appropriate selections, forms, timing, and amounts of pesticides for pest problems.

### Supply chain transparency

Addressing many of the environmental and social challenges within an agriculture supply chain requires cooperation among companies at different stages of the supply chain. Final product manufacturers should determine the locations of farms that produce their supply and engage in initiatives that improve transparency, communication, and data sharing. Suppliers can work together to address common issues, such as energy use, water availability and quality, chemical use, worker health and safety, and labor rights.



## Use of Resources

### Climate and energy

Farming and final product manufacturing require significant amounts of energy. The burning of fossil fuels to produce this energy, as well as the production and use of fertilizers, results in greenhouse gas emissions. Growers and final product manufacturers can reduce these impacts by measuring and tracking energy use, performing preventative maintenance on equipment, and replacing inefficient equipment. Additionally, growers can implement nutrient management plans and use precision agriculture or low-energy irrigation to reduce this impact.

### Fertilizer and Nutrients

Improper management and use of fertilizers can lead to local water pollution and release greenhouse gases during production. Growers should use a nutrient management plan to improve the efficiency of fertilizer and manure use for production. Growers can also use precision agriculture, which applies only the amount of fertilizer needed. Where appropriate, growers can plant vegetative buffer zones around streams to help prevent water pollution via nutrient runoff.

## Food Waste

Food that is not stored and handled properly after harvesting can go bad or be damaged, after which it is often disposed of in landfills, leading to a waste of resources and food. Growers should store tomatoes, peppers, and eggplant in clean, cool places to protect them from spoiling. Manufacturers should consider alternatives to landfills, such as donations to food banks, use as animal feed, or use for energy recovery.

## Land and Soil

Improper soil management can remove nutrients, release greenhouse gases, and cause soil loss, while clearing land for agriculture can lead to deforestation. Growers should use efficient soil management practices, including reduced soil tilling, when applicable, and other soil erosion prevention measures. Final product manufacturers should use sourcing policies that monitor progress on zero deforestation commitments. Sourcing policies should also promote protection of high conservation value forest habitats, which have unique plants and animals. This reduces the risk of biodiversity loss, diminished ecosystem quality, and increased greenhouse gas emissions that can occur when forests are cleared for agriculture.

## Packaging

Packaging design should be optimized to ensure that packaging performs its essential functions of containment and protection while minimizing use of materials, energy resources, and environmental impacts across the life cycle of the packaged product. Under-packaging and over-packaging can both lead to increased impacts. These impacts may be mitigated by using more energy-efficient manufacturing, creating packaging materials from renewable resources, designing packaging to be recyclable, and encouraging consumer recycling.

## Water

Farming can use a significant amount of water and contribute to freshwater depletion, which is problematic in water-stressed regions. Growers can measure and track water use and use methods such as precision agriculture, which applies only the amount of water needed, or irrigation water management to improve water efficiency.



## Workers and Communities

### Smallholder Farmers

Growers on small farms, called smallholder farmers, may have limited access to information, technology, and resources. Final product manufacturers should determine where their crops are grown, understand if they source from small farms, and work with organizations that help smallholder farmers overcome challenges and achieve greater and more sustainable results.

### Workers

Farm workers, especially women and migrants, may face unfair pay, discrimination, and limited freedoms. They may also be exposed to chemicals, dust, or other hazards. Final product manufacturers can implement programs to ensure that they are sourcing from growers who protect labor rights and ensure the health and safety of their workers.