

### 3 EXECUTIVE SUMMARY

According to the Economic Research Service (ERS) of the U.S. Department of Agriculture (USDA), processed food can be defined as follows:

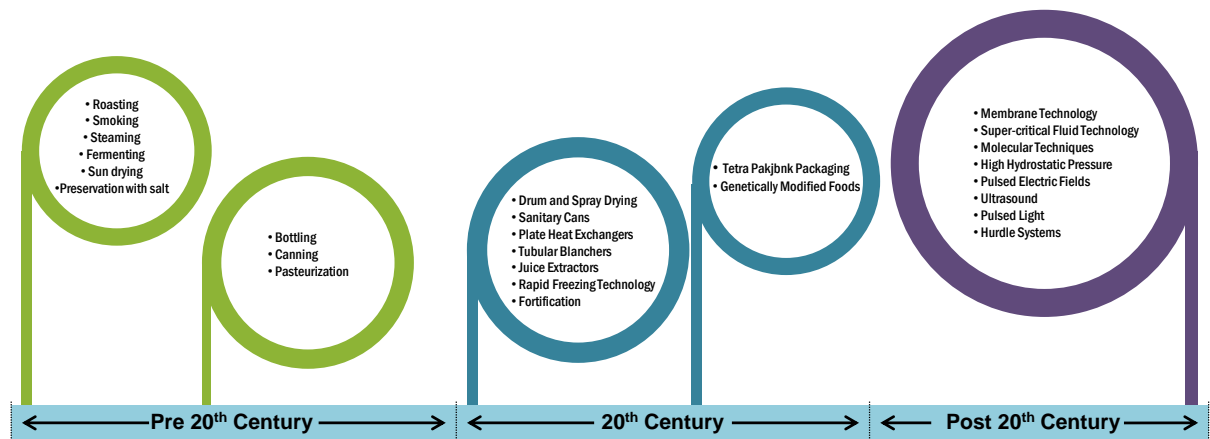
“The processed foods are the one that has undergone a transformation from the raw form either to extend shelf-life – such as the freezing or dehydration of fruits and vegetables – or to improve consumer palatability of raw commodities – such as transforming grain and animal products into bakery and meat products.”

Fruit & vegetable processing is a part of the processed food industry. It covers both processed fruits & vegetables and processing equipment used for the same.

#### 3.1 EVOLUTION OF THE FOOD PROCESSING INDUSTRY

The food processing industry has evolved since 1810, when Nicolas Appert, a French scientist introduced a bottling process, which was later used in the canning process. In 1864, Louis Pasteur, a French scientist, introduced Pasteurization technology, which triggered the evolution of food processing. Between 1900 and 2000, several food processing methods such as drum drying, brine injection, rapid freezing, freeze-drying, fortification, and aseptic filling were introduced.

**FIGURE 14** EVOLUTION OF FOOD PROCESSING INDUSTRY



Source: Related Food Journals, Processing Technology Books & Magazines, and MarketsandMarkets Analysis

The purpose of traditional processing methods was preparing safe and palatable food, protected against microbial contamination. The aim of modern processing technology is extending product shelf-life, ensuring safety, improving palatability, increasing variety, improving nutritional value, and increasing convenience.

## 3.2 PROCESSED FRUITS & VEGETABLES

According to the FDA, fresh fruits & vegetables, and fresh cut fruits & vegetables are defined as follows:

**Fresh fruits & vegetables:** “Fresh produce that is likely to be sold to consumers in an unprocessed (i.e., raw) form. Fresh produce may be intact, such as whole strawberries, carrots, radishes, or tomatoes, or cut from roots or stems during harvesting, such as celery, broccoli, lettuce, or cauliflower.”

**Fresh cut fruits & vegetables or fresh cut produce:** “Fresh fruits and vegetables for human consumption that have been minimally processed and altered in form by peeling, slicing, chopping, shredding, coring, or trimming, with or without washing, prior to being packaged for use by the consumer or a retail establishment (e.g., pre-cut, packaged, ready-to-eat salad mixes). Fresh-cut produce does not require additional preparation, processing, or cooking before consumption, with the possible exception of washing or the addition of salad dressing, seasoning or other accompaniments.”

This report covers fruits & vegetables that are fresh and cleaned, fresh cut, canned, frozen, and processed. The processed segment covers products such as dehydrated, dried, pickled, and juices. Fresh fruits & vegetables are cleaned and packaged to increase their shelf-life. These products are sold by export and import, as well as in retail outlets such as supermarkets, hypermarkets, and convenience stores.

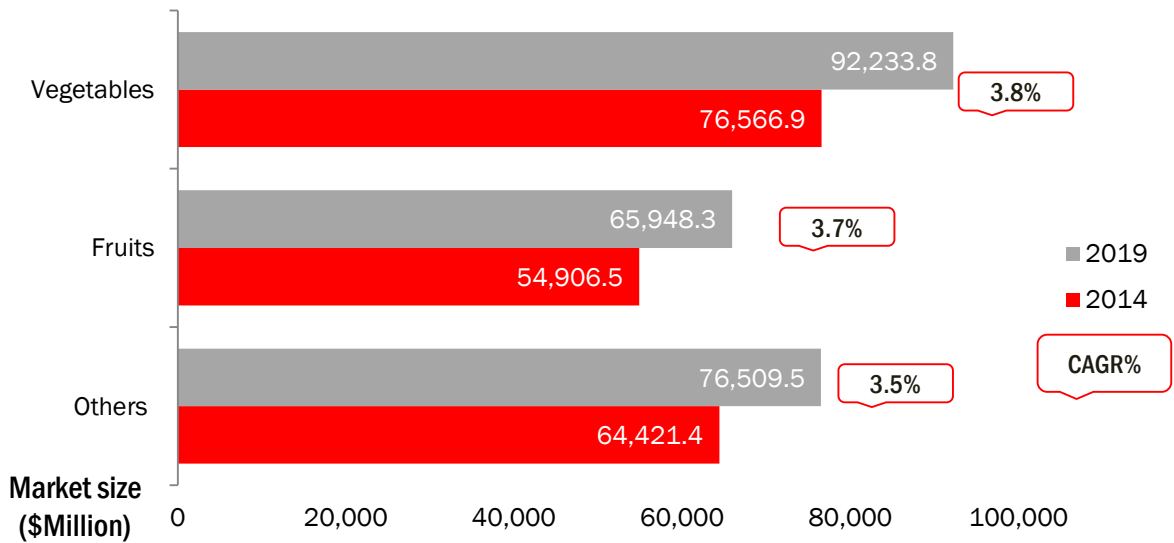
The processed fruits & vegetables market was valued at \$189,270.5 million in 2013, and is projected to grow at a CAGR of 3.7% from 2014 to reach \$234,691.6 million by 2019.

The growth of the processed fruits & vegetables market is primarily triggered by the following:

- Increasing disposable income
- Growing middle-class population
- Benefits offered by processed fruits & vegetables compared to other processed foods
- Introduction of technologically-advanced products

However, factors such as the high prevalence of contamination and higher selling price of the finished product are restraining the growth of this market.

**FIGURE 15** PROCESSED FRUITS & VEGETABLES MARKET SNAPSHOT (2014 VS. 2019):  
VEGETABLES SEGMENT DOMINATED THE MARKET



Source: Research Journals, Company Publications, Company Websites, Food Magazines, Expert Interviews, and MarketsandMarkets Analysis

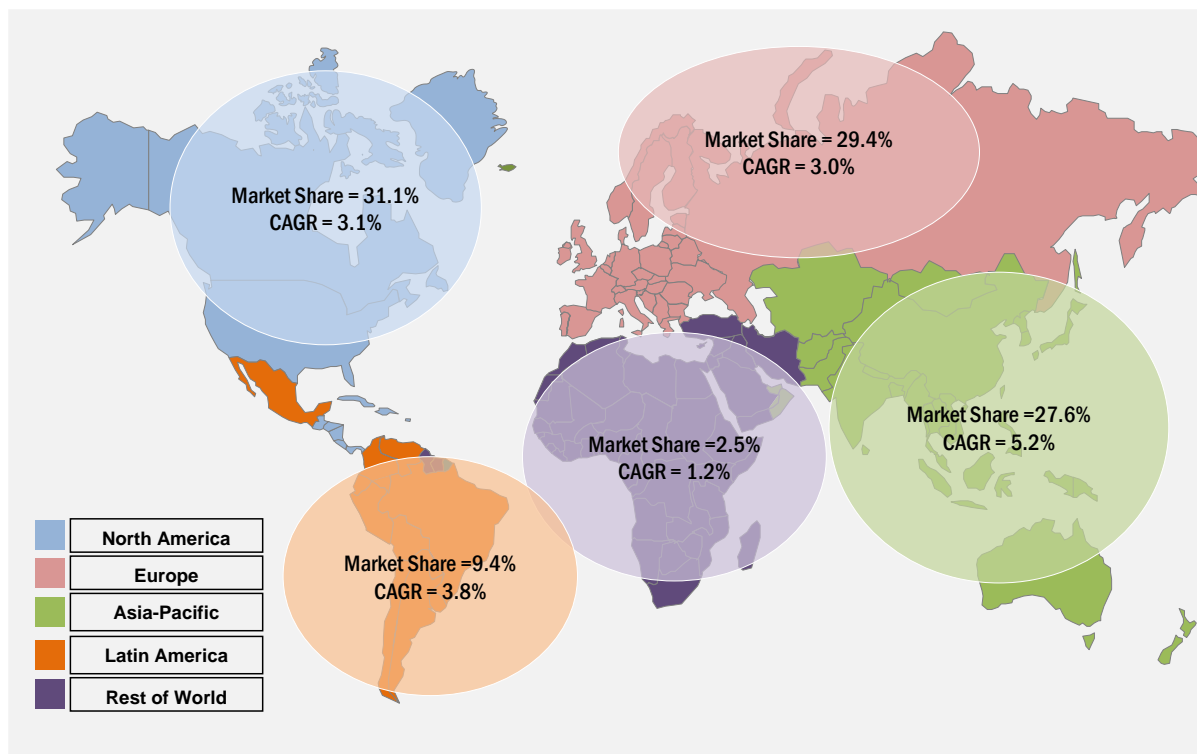
On the basis of type, the processed fruits & vegetables market has been segmented into fruits, vegetables, and others that are available as fresh, canned, frozen, fresh cut, dried/dehydrated, and convenience products. The vegetables segment accounted for the largest share—39%— of the processed fruits & vegetables market in 2013, and is poised to grow at the highest CAGR of 3.8% from 2014 to 2019.

In this report, the processed fruits & vegetables market is broadly segmented by type, product type, and region. The market is projected to grow due to the following factors:

- Increasing health concerns
- Environment-friendly aspects
- Innovative production practices
- New product offerings
- Increased availability
- Preference for convenience food products due to busy lifestyles

The processed fruits & vegetables market is dominated by various players, depending on their core competencies. The key manufacturers of products in this market are ConAgra Foods, Inc. (U.S), Dole Food Company, Inc. (U.S.), Greencore Group plc (Ireland), Olam International Limited (Singapore), and Nestlé S.A. (Switzerland). The key suppliers/retailers that offer these products include Gourmet Foods International (U.S.), Roland Foods (U.S.), Safeway, Inc. (U.S.), and The Kroger Company (U.S.).

**FIGURE 16** PROCESSED FRUITS & VEGETABLES MARKET SHARE (VALUE), GEOGRAPHICAL OVERVIEW, 2014



Source: Research Journals, Company Publications, Company Websites, Food Magazines, Expert Interviews, and MarketsandMarkets Analysis

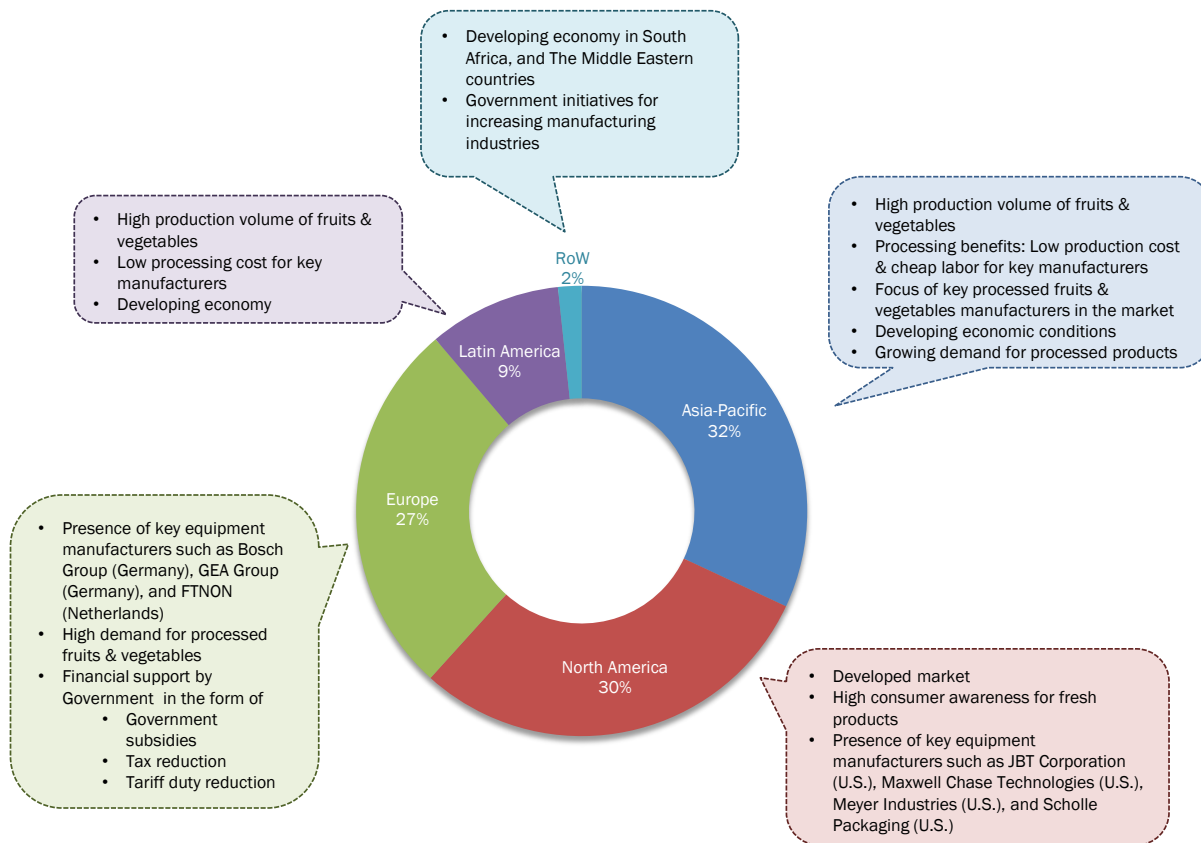
The North American market accounted for the largest share of processed fruits & vegetables consumption, and was valued at \$60,839.4million in 2014. Factors such as large population and the consequent increase in demand for food, rapid adoption rate of advanced technologies producing varieties of processed fruits & vegetables, increase in the number of fruit & vegetable processing firms, rising health and environmental concerns, and government intervention is driving the European processed fruits & vegetables market.

The Asia-Pacific market is projected to grow at the highest CAGR of 5.2% from 2014 to 2019. This growth is propelled by factors such as the growing middle class population, rise in health and environment concerns, increasing number of global F&B players, and the increasing adoption of digital and online marketing.

As compared to developed markets, developing markets in Latin America and RoW are estimated to grow at a moderate CAGR between 3.8% and 1.2% during the review period.

### 3.3 PROCESSING EQUIPMENT MARKET FOR FRUITS & VEGETABLES

**FIGURE 17** PROCESSING EQUIPMENT MARKET SHARE (VALUE) FOR FRUITS & VEGETABLES, BY REGION, 2013



Source: Research Journals, Company Publications, Company Websites, Food Magazines, Expert Interviews, and MarketsandMarkets Analysis

The processing equipment market for fruits & vegetables was dominated by Asia-Pacific, with a share of about 32% in 2013. The market is highly diversified and competitive, with a large number of key players.

The key manufacturers of processing equipment for fruits & vegetables include the Bosch Group (Germany), Bühler Group (Switzerland), FTNON (the Netherlands), GEA Group AG (Germany), JBT Corporation (U.S.), Krones AG (Germany), Maxwell Chase Technologies (U.S.), Meyer Industries (U.S.), Scholle Packaging (U.S.), and Turatti s.r.l (Italy).