Previous Next

Manulife Investment Management

Special report

Growing agricultural investment *opportunities* in Chile

Key takeaways

Chile's competitive advantages

Macroeconomic overview

Investment risks

Chile agriculture overview

Chile sustainability and responsible investing environment

Key Chilean crops

Looking forward

Previous Next

Table of contents

Previous Next

Key takeaways

Chile is a leading producer and exporter of a wide range of high-value crops, with its southern hemisphere location enabling harvest at times when few regions of the world can provide fresh supplies. Chile's key features supporting competitive advantages in agriculture include:

- Deep competitive agricultural industry position—Chile has key competitive advantages in crop production and export, including its southern hemisphere location, infrastructure, human capital, and production scale.
- Global market access—Chile has free trade agreements with over 90% of the world's economy, and exports are a strategic priority for the government. The country's overall economy is export oriented, providing strong benefits to the agricultural sector. Chile plays a leading global role in exporting products to China, the United States, the EU, and Latin America.
- Favorable legal and political institutions—Chile's democracy is ranked favorably by international institutions and has adapted to meet the needs of a population that erupted into protests in the fall of 2019, with the drafting of a new constitution under way as of spring 2021.
- Natural resources—Chile's land, water, range of latitudes, and geographic isolation from pests and disease help increase crop prices and help keep input costs lower.
- Macroeconomic climate and currency—Chile has among the strongest credit ratings and most stable currencies in Latin America.

Our agriculture team outlines Chile's macro environment and explores the country's competitive positions in key crop markets, where we believe Chile's role in supplying global consumers will likely continue to grow.

Oliver S. Williams IV, CFA
Global Head of
Agriculture Investments,
Hancock Natural Resource Group
Manulife Investment Management

Keith A. Balter
Managing Director of
Economic Research,
Hancock Natural Resource Group
Manulife Investment Management

Daniel Serna
Associate Director and
Senior Portfolio Manager
Manulife Investment Management

Previous Next

Chile's competitive advantages

Chile's competitive advantages in agricultural production include natural resources, logistics, infrastructure, and government policy. Trade and logistics infrastructure, supported by Chile's wide range of export sectors, facilitate the cost-effective, reliable, and timely movement of goods from producing regions to key ports and onward to global customers, with major producing regions within 150 miles of the coast. Transportation advantages versus other southern hemisphere producers into North and South America combine with significant tariff advantages from free trade agreements in these markets as well as major markets in Asia and Europe. Growing bargaining power of Chilean exporters engaged in supply contracts with foreign buyers reflects product quality and reliability. Development of supporting industries, including machinery and crop chemicals, has encouraged price, competitive inputs, and product innovation.

Chile's agricultural subsidies are limited, just 2.7% of farm cash receipts in 2019 compared with the Organisation for Economic Co-operation and Development (OECD) average of 17.8%.[1] Chile's policies generally create minimal market distortion and are mainly aimed to improve the productivity and competitiveness of small-scale farmers, with more than 50% of budgetary allocations to the agriculture sector spent on general services, mainly directed toward infrastructure, research and development, and inspection services.[2] This leads larger farmers to compete based on market conditions and incentivizes innovation to adapt with new technologies and plant varieties to maintain competitiveness. While direct subsidies are low, developing commercial agriculture is a strategic priority for the government, given the sector's important contribution to the country's overall GDP and rural employment. Chile features a well-educated agricultural workforce and a more developed university system compared with most of Latin America. The government also supports the creation of public-private partnerships to vertically integrate farmers to markets. A strong emphasis is placed on water access and use, specifically irrigation: Over 20% of the public budget allocated to the agricultural sector is invested in irrigation infrastructure.

Previous Next

Macroeconomic overview

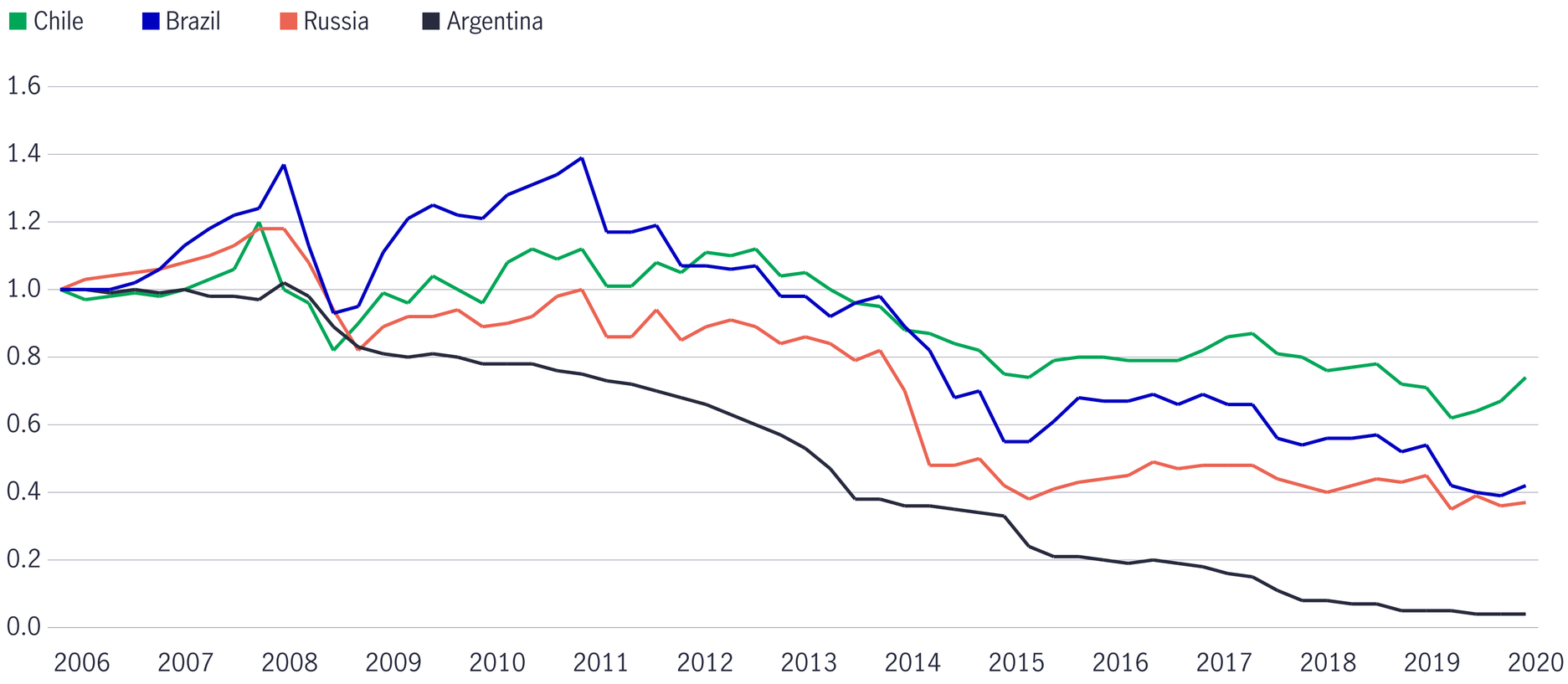
Chile has a small population (19 million),[3] ranked 65th globally, yet with a large land area (743,000 kilometers,[2] or 183,599,298 acres, slightly larger than Texas) relative to its population, and Chile's annual GDP of US$245 billion in 2020 was comparable to New Zealand.[4] Over the past 25 years, the country's GDP and GDP per capita have grown faster than neighboring countries, and it's regarded as one of the easiest places to do business, according to the Heritage Foundation.[5] Chile was designated a high-income country by the United Nations in 2013, and 2019 GDP per capita was US$14,896.[6] Since 2008, Chilean GDP (in current USD) has grown at an annualized 4.4%, slightly lower than Uruguay (6.3%) and comparing favorably with Brazil (1.9%). Chile's GDP per capita has been growing at a similar pace, at 3.6%, over the period.[7]

Extensive copper reserves and the mining sector are a key component of Chile's economy, accounting for 20% of its GDP and 50% of exports by value.[8] Leading imports include petroleum and vehicles and, in recent years, Chile has run a trade balance near parity. With free trade agreements with countries representing nearly 90% of its global GDP, Chile has excellent commercial access around the world. Despite recent volatility due to social and political change, as well as the COVID-19 crisis, the Chilean peso remains one of the most stable currencies within Latin America, which is reflective of a commodity-producing, export-oriented country, and relative to other developing countries, demonstrates more moderate changes in value.

Previous Next

Given its small population, domestic demand is limited, making Chile's agricultural sector export oriented: Over two-thirds of Chilean fruit production is exported, and agricultural products are the second-largest export category after copper. The Chilean government has focused on liberalizing trade as an economic growth driver, and Chile has free trade agreements with 65 countries, representing 90% of the world's GDP, with an average tariff of 1.8%.[9] Free trade agreements cover all the major fruit and tree nut destination markets except for Russia, which enables Chile to compete in distant markets where it lacks transportation advantages. With the majority of crop production exported, most revenues for Chilean agricultural production are generated in U.S. dollars.

USD per currency of major emerging-market agriculture exporters (Index 2006=1)



Source: Macrobond, March 31, 2021.

Previous Next

Investment risks

Investment in Chilean agriculture faces multiple risks related to its business environment, specifically to the agriculture sector. There are country risks relating to economic growth and currency, the country's pending new constitution, social reforms, and regulatory and tax changes. Within the agricultural sector, Chilean producers face risks common to producers globally, including crop yields, prices, water and labor availability, and costs. Major risks to investing in permanent cropland in Chile include the enactment of laws that could modify the availability and cost of labor and future macroeconomic trends centered around the price of copper. If global demand for copper declines, prices could deteriorate, leading to pressure on the country's economy.

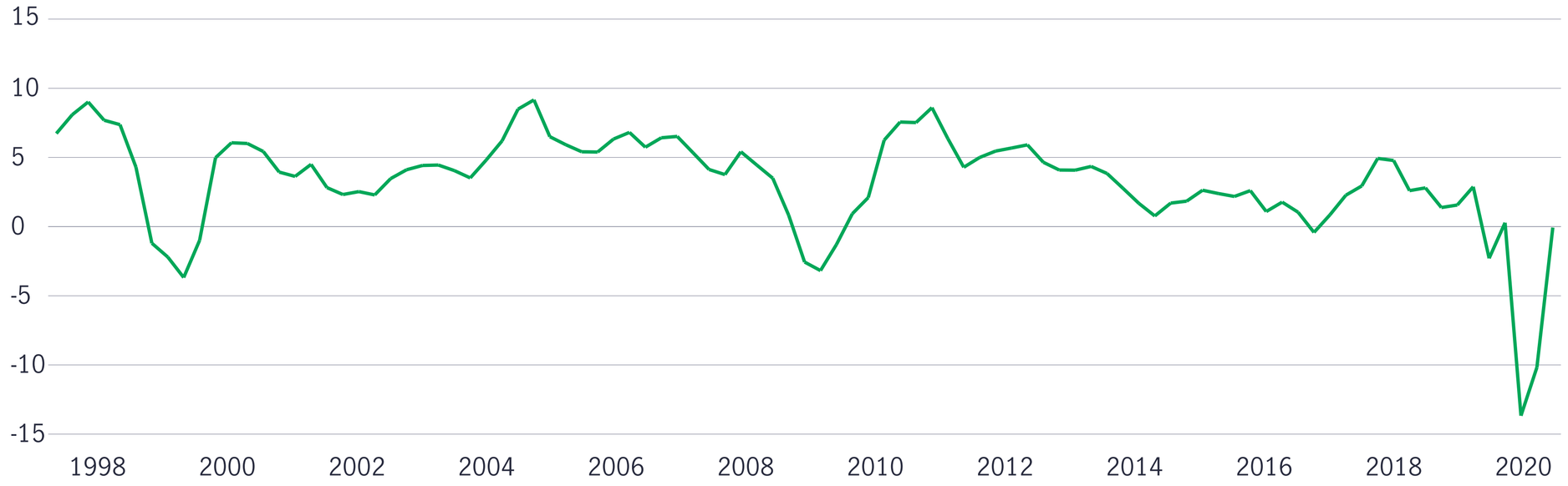
Current political, social, and economic environment

Chile has a favorable legal and political climate for investment, ranking 25 out of 179 countries on the Transparency International 2020 Corruption Perceptions Index[10] and 19 out of 178 countries on the Index of Economic Freedom from the Heritage Foundation.[11] It ranks 5th among the principal agricultural production countries in the World Economic Forum's "Global Competitiveness Report," behind the United States, Canada, Australia, and China, and 33rd globally.[12]

Previous Next

In late 2019, Chile experienced extensive social unrest with demands for increased public services, larger pensions, and lower-cost education.[13] Chile has among the highest income and education inequality in the OECD,[14] and a public referendum in October 2020 was overwhelmingly passed, with 80% of voters choosing to write a new constitution to replace the 1980 constitution written under the dictatorship of Augusto Pinochet. A Constitutional Convention comprising Chilean citizens was elected in May 2021, and the completed constitution will face a scheduled referendum vote in 2022. The Constitutional Convention is expected to create fundamental reforms in areas such as public services while helping retain elements that have enabled Chile to have the highest credit rating of any country in Latin America.[15]

Chile real GDP, annualized change (%)



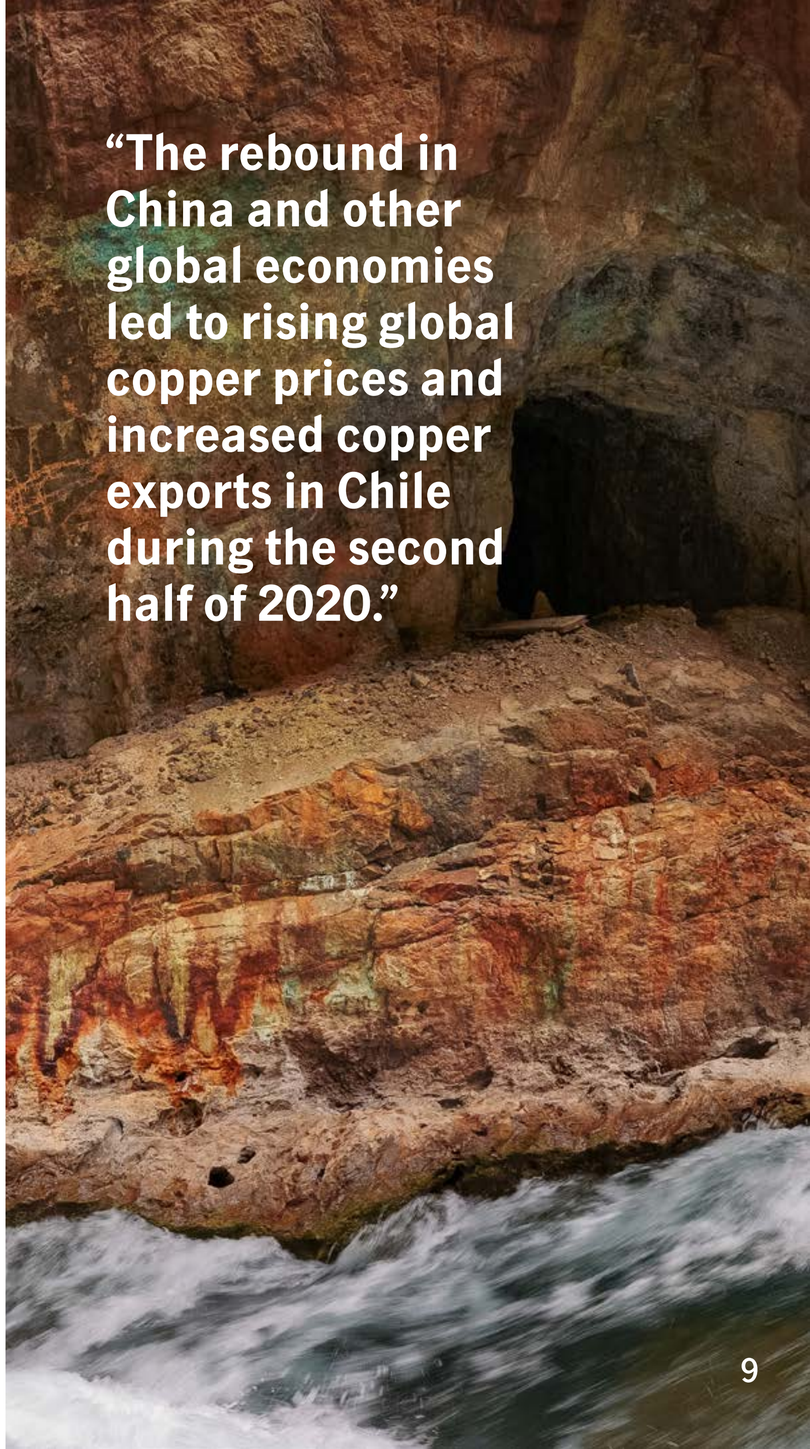
Source: Macrobond, March 31, 2021.

Previous Next

Chile during the COVID-19 crisis

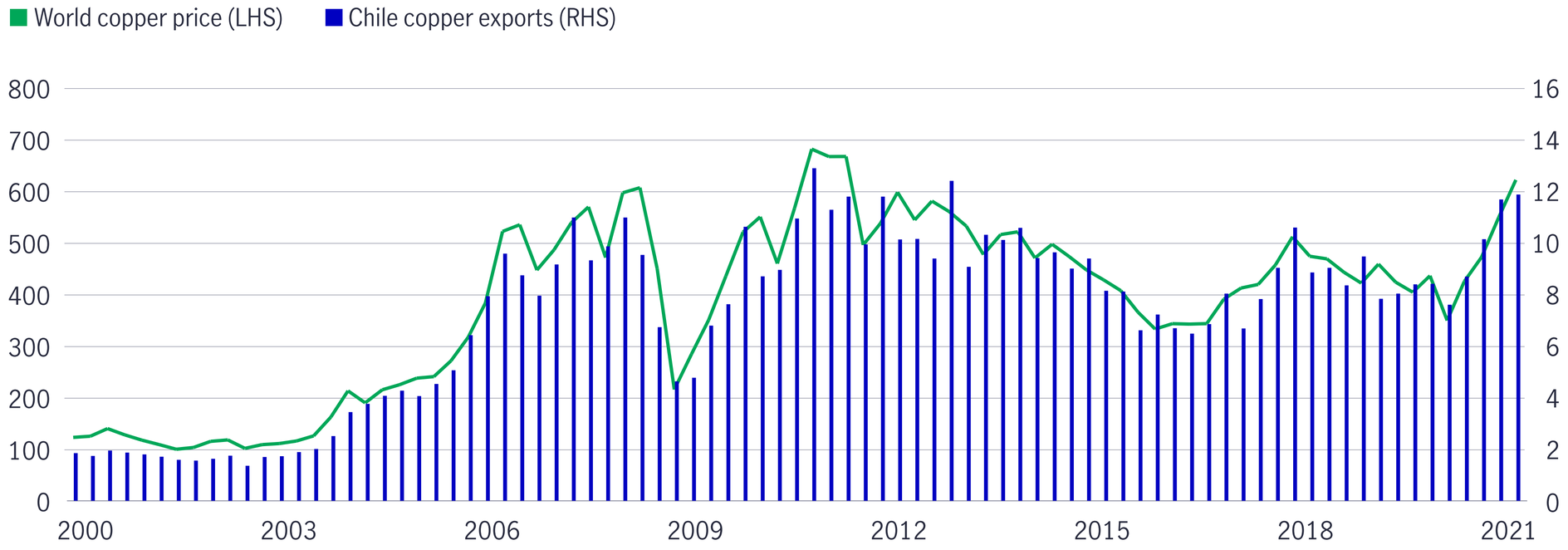
Chile enacted swift and strict controls to mitigate the spread of COVID-19, which led to a sharp contraction in the economy in Q2 2020 before stabilizing in Q3 2020 through to Q1 2021, when an extensive vaccine program should also support the pace of the economic recovery.

Another major driver for Chile's economic rebound was China's recovery from the virus: China was the only major global economy to register positive economic growth in 2020. The rebound in China and other global economies led to rising global copper prices and increased copper exports in Chile during the second half of 2020. At the end of Q1 2021, the price of copper was 78% higher than at the end of Q1 2020, and Chilean copper exports were 46% higher in Q1 2021 than in Q1 2020.



Previous Next

Copper price in the S&P 500 Index and quarterly Chile copper exports (US$B)



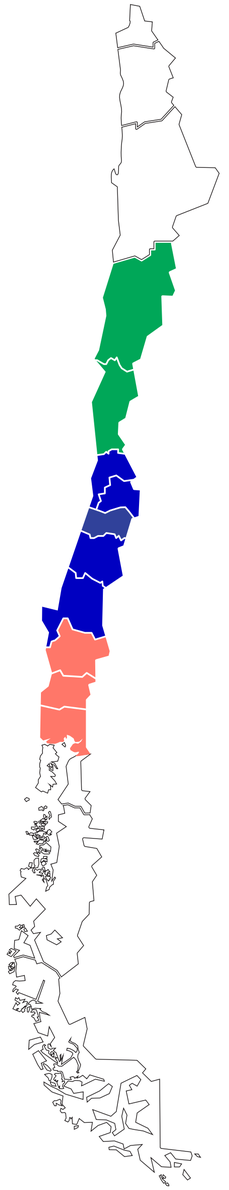
Source: Macrobond, March 31, 2021. LHS refers to left-hand side. RHS refers to right-hand side.

Previous Next

Chile farmland market

Region	Farmland (K ha)	20-year CAGR (%)	Key crops
North (III, IV)	40	3.2	Table grapes, citrus, olives, avocados
Central (V–VII)	264	2.6	Tree nuts, table grapes, cherries, stone fruit, apples
South (VIII–XVI)	41	9.1	Blueberries, tree nuts, apples, cherries

Source: ODEPA, March 31, 2021. CAGR refers to compound annual growth rate. K ha refers to thousand hectares.



Previous Next

Chile agriculture overview

Chile's geography and climate offer distinct advantages for agricultural production, as it's one of the world's few regions with a Mediterranean climate, ideal for high-value fruit and tree nut production. Chile's length enables long production windows counterseasonal to the northern hemisphere, allowing producers to receive crop price premiums in the early and late seasons when supply is low and prices are high.

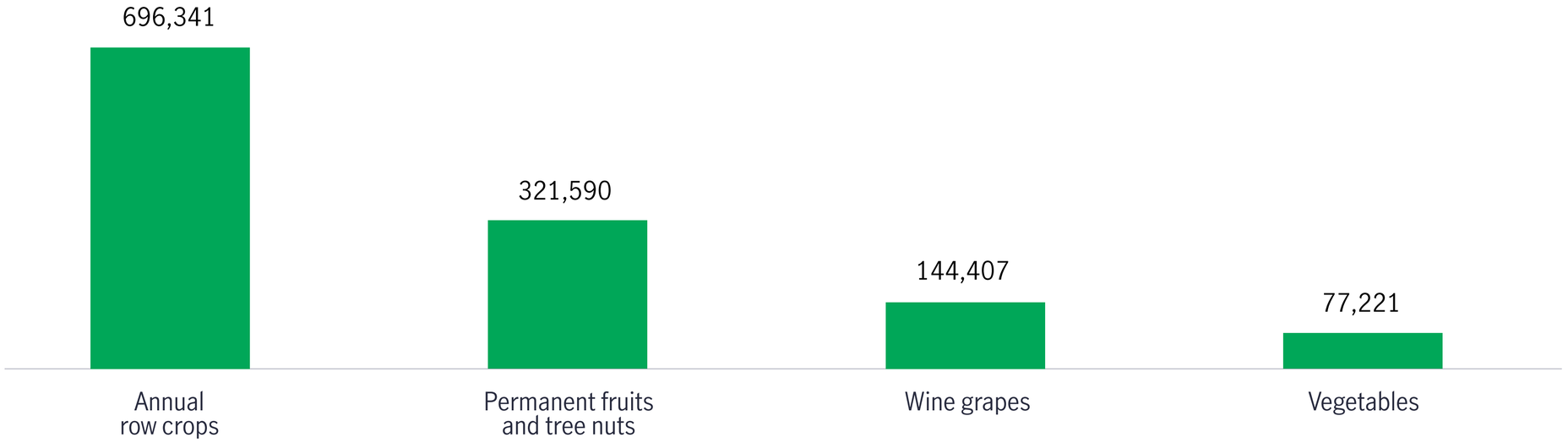
Bordered by the Pacific Ocean, Andes Mountains, Atacama Desert, and Antarctica, the location makes it difficult for pests to enter the country.

While water is scarcer in some of the northern climates, it's more abundant in the southern portions of the country, fed by runoff from the Andes as well as significant levels of rain.

Chile is the largest southern hemisphere exporter of fruit and walnuts[16] and competes with Argentina, Australia, New Zealand, Peru, and South Africa in the fruit and tree nut export markets. Of the country's 76 million hectares (ha), 2.1 million are cultivated, with 1.3 million ha used for annual and permanent crops and the balance for forage or fallow.[2]

Previous Next

2018 Chilean cultivated land use (hectares)



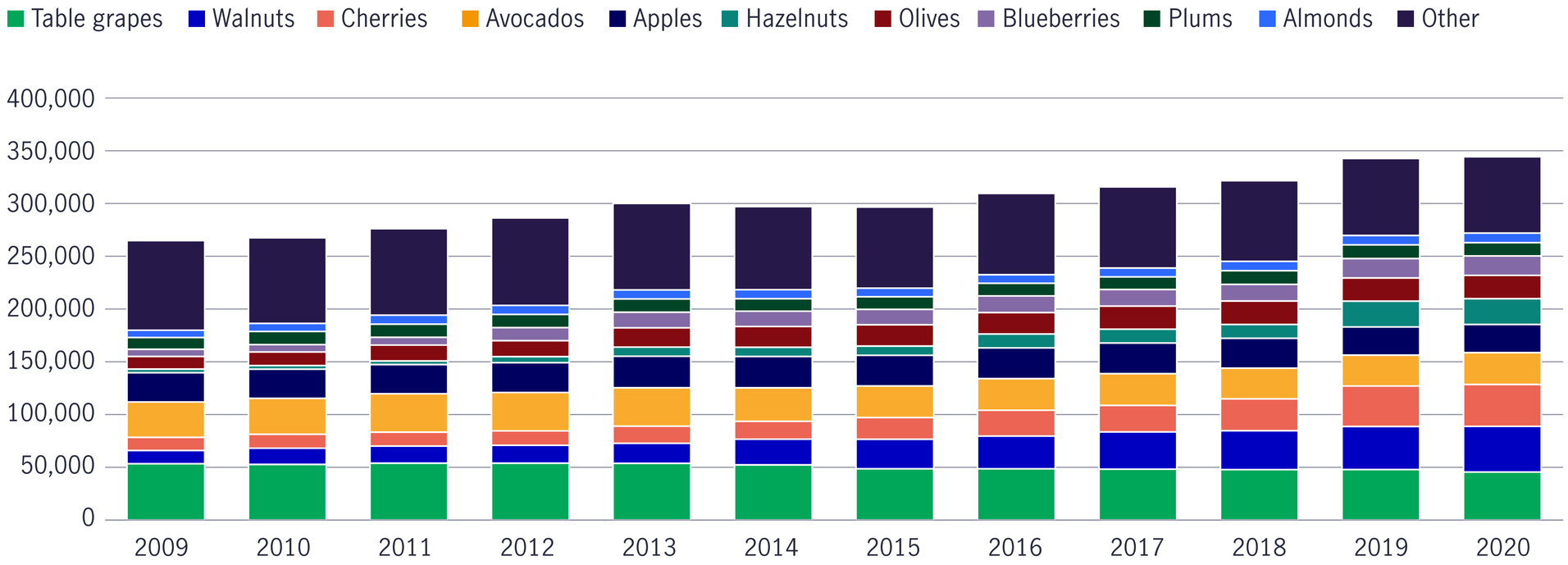
Source: ODEPA, March 28, 2021.

Fruit and tree nut areas totaled 321,590 ha in 2018, up from 249,544 ha in 2008,[2] a 3.5% compound annual growth rate (CAGR). Five crops make up 55% of the fruit and tree nut area: grapes (15%), walnuts (12%), apples (11%), cherries (9%), and avocados (9%). Vegetables, led by sweet corn, lettuce, and tomatoes, totaled 69,845 ha. For comparison, with 388,350 ha of fruits, tree nuts, and vegetables in Chile, California has 1.7 million irrigated ha of these crops.[17] Over the past 10 years, the fastest-growing crops were hazelnuts, walnuts, cherries, blueberries, mandarins, and avocados, while other crops remained flat to gradually declining (apples, table grapes). Table grapes were one of Chile's first major permanent crops oriented to export markets; however, the market has matured, and Chile now faces increased competition from Peru. Permanent cropland represents about 20% of total agricultural land and has an estimated market value of about US$13 billion across 350,000 ha.[18]

Previous Next

Agriculture makes up 3% of Chilean GDP and 24% of exports, making it the country's second-largest source of exports after copper.[2] Including food and beverage processing, agriculture is 8% of the economy. Chile is the largest southern hemisphere fruit exporter, and its fruits make up 38% of farm production, followed by livestock at 21%.[2] Production agriculture, excluding other portions of the value chain, employed 774,000 people in 2019, 9% of the total Chilean workforce.[2] Including agribusiness, the employment total is closer to 20%, and agribusiness accounts for 57% of Chile's manufacturing output.[2]

Productive area of selected permanent crops in Chile (hectares)

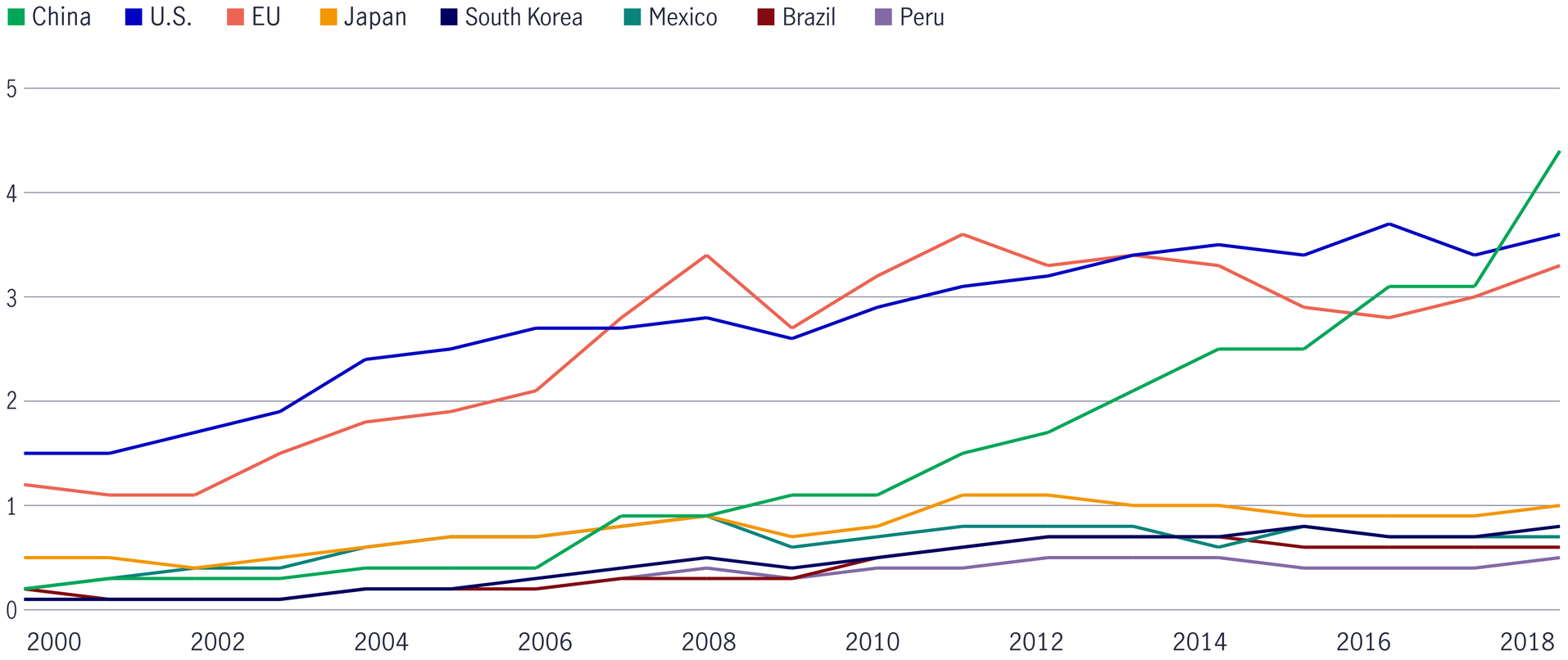


Source: ODEPA, January 26, 2021.

Previous Next

In 2018, Chilean agricultural exports totaled US$18 billion (24% of Chile's total exports).[19] Fresh fruit and tree nut exports were the largest category, followed by wine and processed fruits. For comparison, 2017 agriculture exports from California were US$23 billion.[20] Chile's agricultural export value grew at a 7.4% CAGR from 2000 to 2018, with exports to China driving the growth. After growing at a 19.4% CAGR from 2000 to 2018, China surpassed the United States and became the top export destination for Chile's agricultural products.

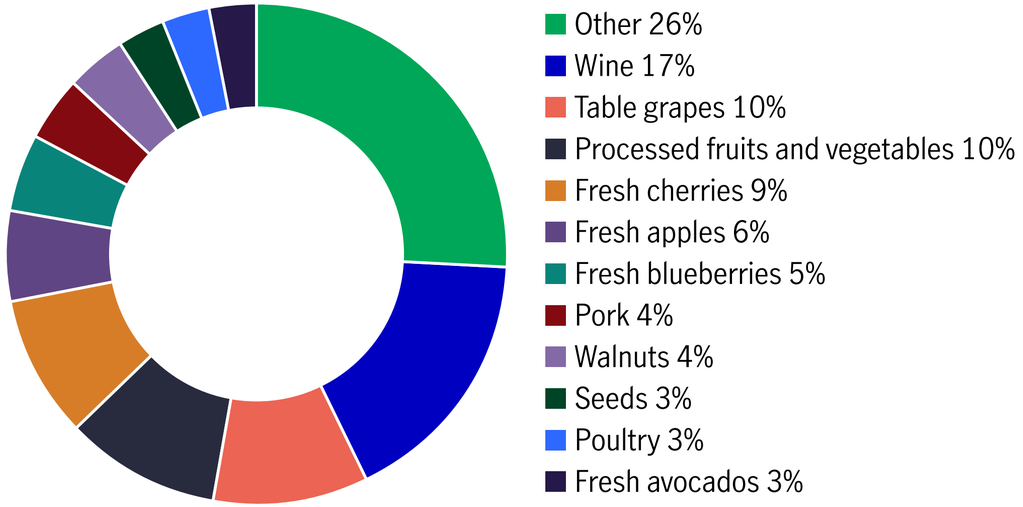
Top Chile agricultural export destinations (US$B)



Source: ODEPA, March 24, 2021.

Previous Next

2018 Chilean agricultural exports (US$1,000 FOB)



Source: "2019 Panorama de la Agricultura Chilena," ODEPA, as of March 31, 2021. Free on board (FOB) assumes a no-charge delivery to the buyer's destination.

Chile is the world's largest exporter of table grapes and cherries and is a top five exporter of apples, walnuts, and almonds.

Previous Next

Chile's global rankings in major permanent crops

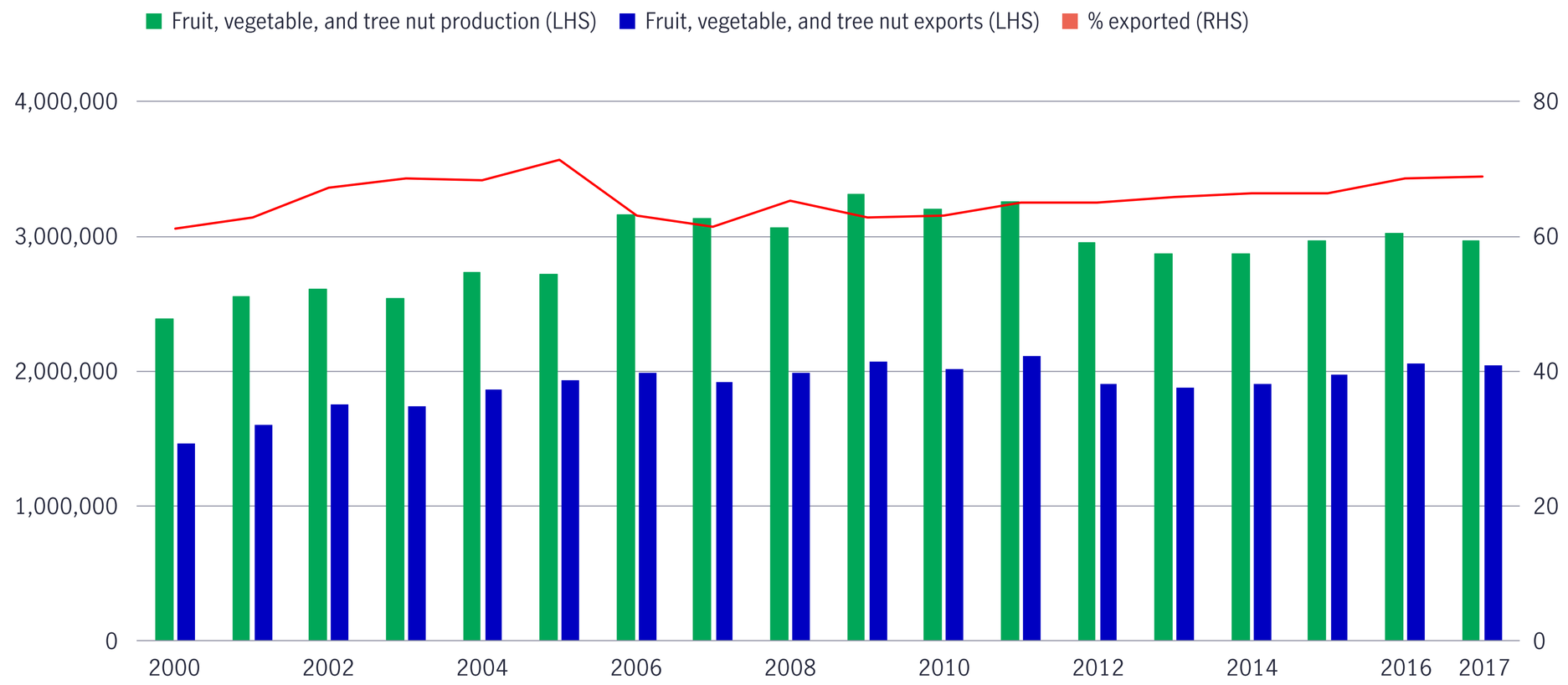
From 2000 to 2017, Chilean fruit and tree nut export volumes grew at a 2% CAGR. Most of the growth occurred from 2000 to 2009, with relatively stable levels thereafter.

Production	Production 2019	Production average 2014–2019 (MT)	Exports 2019	Export average 2014–2019 (MT)	Average exported (%)
Apples	8	1,314,167	4	752,133	57
Grapes	8	981,531	1	748,817	76
Cherries	8	117,315	1	97,417	83
Walnuts	5	81,856	2	79,167	97
Almonds	6	7,233	5	6,183	85

Source: USDA PSD Online, March 26, 2021. MT refers to metric tons.

Previous Next

Chile fruit, vegetable, and tree nut exports (MT)



Source: USDA PSD Online, March 26, 2021. MT refers to metric tons. LHS refers to left-hand side. RHS refers to right-hand side.

Previous Next

Chile's sustainability and responsible investing environment

Both Chile's government and the agricultural sector have taken steps toward enhancing the environmental and social contribution of agriculture, aligning with broader global and national goals around sustainability.[21] Key areas include soil health, organic production, water availability, climate change, and diversity.

To meet increased demand for sustainably produced products, Chilean agriculture has adopted increased soil conservation practices and has increasingly certified cropland as organic. Chile's Ministry of Agriculture administers a soil conservation and restoration financial incentive program, SIRSD-S. Farmers submit proposals and compete against other growers for funding for activities that enhance soil health and improve farm sustainability, with an average of 151,000 ha funded each year from 2011 to 2018.[2] In Chile, organic agriculture had a total 113,000 ha as of 2019 (up from 80,000 in 2014), including more than 14,000 ha of permanent fruits and tree nuts, with organic exports reaching US$274 million, up from US$217 million in 2015.[22] Fruits, nuts, and vegetables tend to have organic crops making up a greater share of global production compared with annual row crops such as grains and oilseeds.

Previous Next

Within the tree fruit sector, the leading trade association, ASOEX, has established the "Guide of Good Practices for Sustainability of the Chilean Fruit Industry," including aspects of food safety, respect for the environment, corporate social responsibility, and economic sustainability.[23] More than 90% of the tree fruit orchards use localized irrigation (such as crop and micro sprinklers), rather than prior flood irrigation approaches.[23] ASOEX has also coordinated the training of more than 264,000 workers since 2000 in areas of food safety, pesticide use, and good farming practices. Finally, ASOEX invests in local rural communities, notably through school and home construction following earthquakes in 2010 and 2015.[23]

With the Andes Mountains receiving moisture from the Pacific Ocean, Chile has among the largest freshwater resources in the world (922 cubic kilometers annually), ranking 14th globally and 5th in Latin America.[24] In Chile, water is a basic right protected by federal laws. The 1981 Water Code, augmented and updated in 2005, established water basins with tradable water rights.[21] To meet the needs of providing water to the full spectrum of the country, including agriculture, Chile is evolving, from water code reforms to increased funding for water infrastructure to incentives for adoption of water efficiency technology.[2]

Chile's approach to climate change includes a national commitment to reducing the intensity of its carbon dioxide (CO_2) emissions (a 30% reduction by 2030 from 2010 levels), increased use of renewable energy, and reforesting 100,000 ha of land.[22] Joining global climate change mitigation efforts, Chile is a signatory to the Paris Agreement on climate change. In 2016, the latest available data, the agriculture sector accounted for 10.6% of the country's greenhouse gas (GHG) emissions, at 11,802 kilotons of CO_2 equivalent, with methane from the livestock sector making up 56% of all GHG emissions.[23] As Chile faces and adapts to climate change, its span across latitudes and healthy water availability should provide resiliency, with the potential for the gradual movement of crop types southward.

"To meet increased demand for sustainably produced products, Chilean agriculture has adopted increased soil conservation practices and has increasingly certified cropland as organic."

Previous Next

Chile includes nine indigenous groups that represent nearly 12% of the country's population, and the country has incorporated minimum levels of participation in the 2021 Constitutional Convention for indigenous populations. Recognizing rights of indigenous communities is an important part of agriculture investment in Chile, as the country's agriculture sector includes 49,000 indigenous-owned farms covering 1.2 million ha.[23] The new Chilean constitution is expected to add recognition of indigenous rights, which will likely contribute to the overall stability and growth of the country, and 2020 demonstrations in the south of Chile highlight the pressing need for reform as a benefit to all citizens.[23]

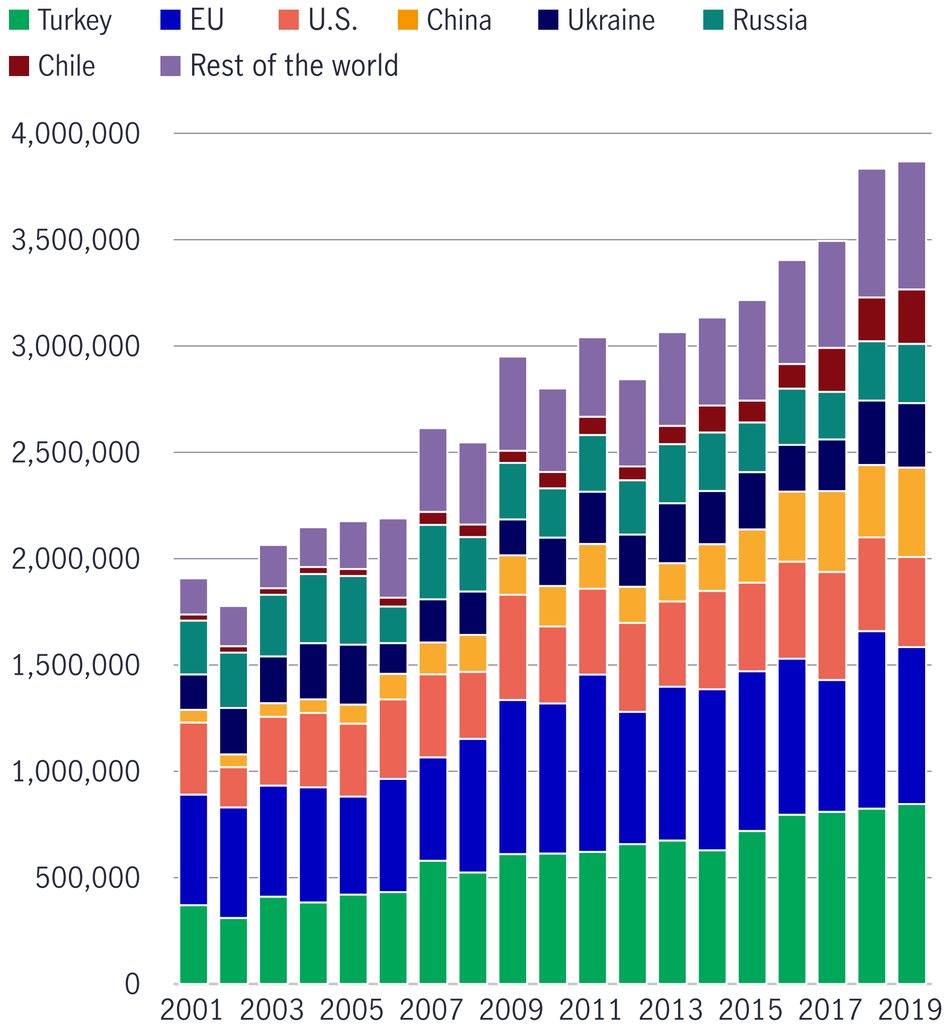
Key Chilean crops

In Chile's diverse permanent crop sector, several key crops have the scale, competitive position, and growth opportunity that make them especially suitable for long-term institutional investors. The largest permanent crop in Chile, the grape sector—for both wine and table grapes—is in a period of transition. Collectively, wine and table grapes account for 42% of the country's permanent crop area. One of its first major export fruits, grapes were aggressively developed in the 1980s and 1990s and remain a staple crop in Chile; however, at this time, the grape industry has matured and is confronting slowing global demand growth. Chile also faces increased competition in export markets, especially from Peru. These pressures have led to squeezed margins and encouraged shifting to other crops that offer higher current profits and greater growth potential. The redevelopment of current vineyard land and water resources to crops with more rapidly growing demand and where Chile sustains greater competitive advantages is a major growth opportunity, as many of Chile's grapes are in some of the most prime climates in the country.

Previous Next

Cherries

Global cherry production (MT)

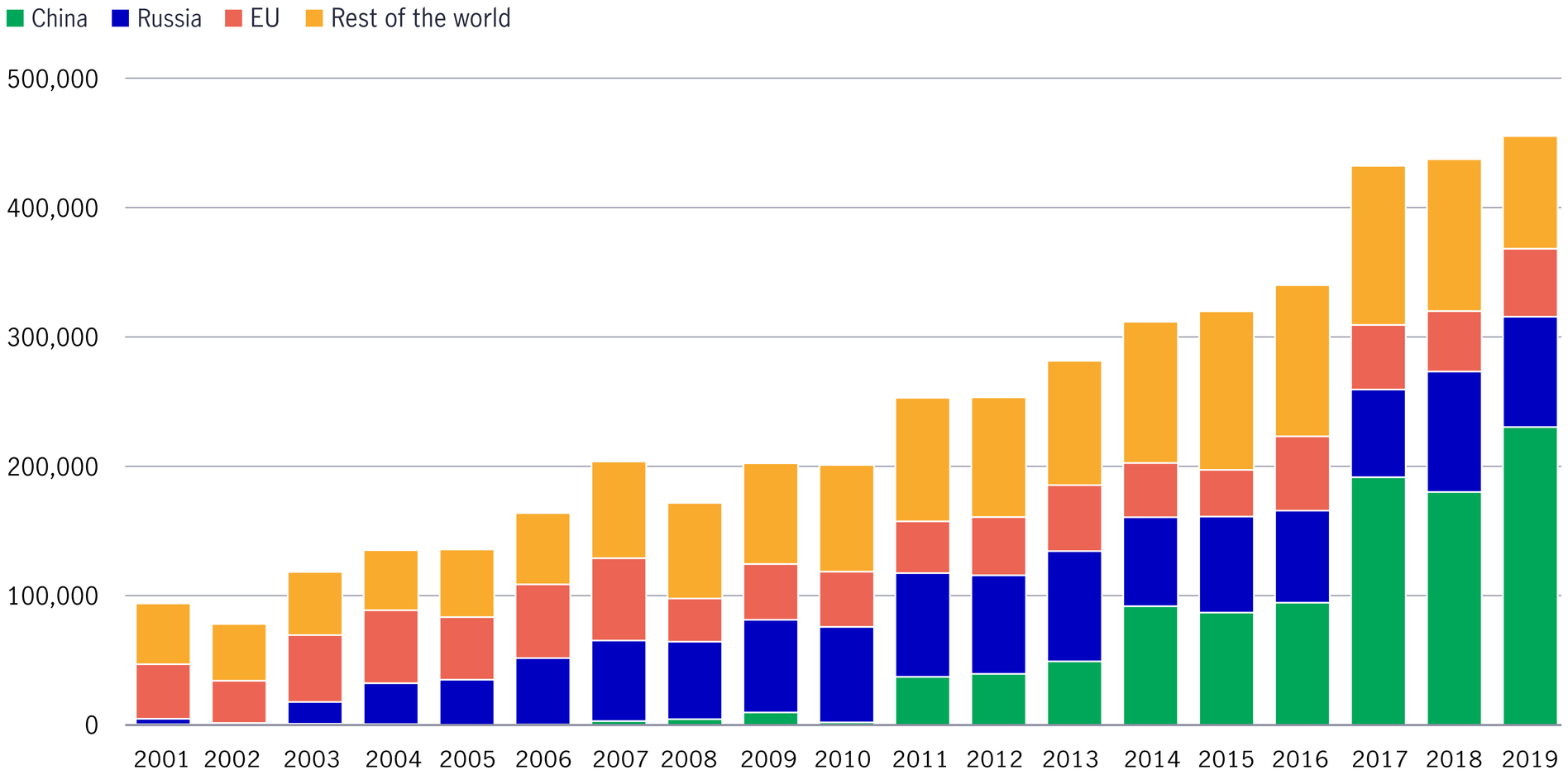


Source: USDA PSD Online, March 23, 2021. MT refers to metric tons.

Previous Next

Global cherry trade has grown at a 9.8% CAGR from 2001 to 2019, faster than production or consumption. In the last five years, China has become the dominant fresh cherry importer, with a 50% share in 2019, although this growth rate may be tempered in the future as China expands domestic cherry growing.

Global cherry imports (MT)

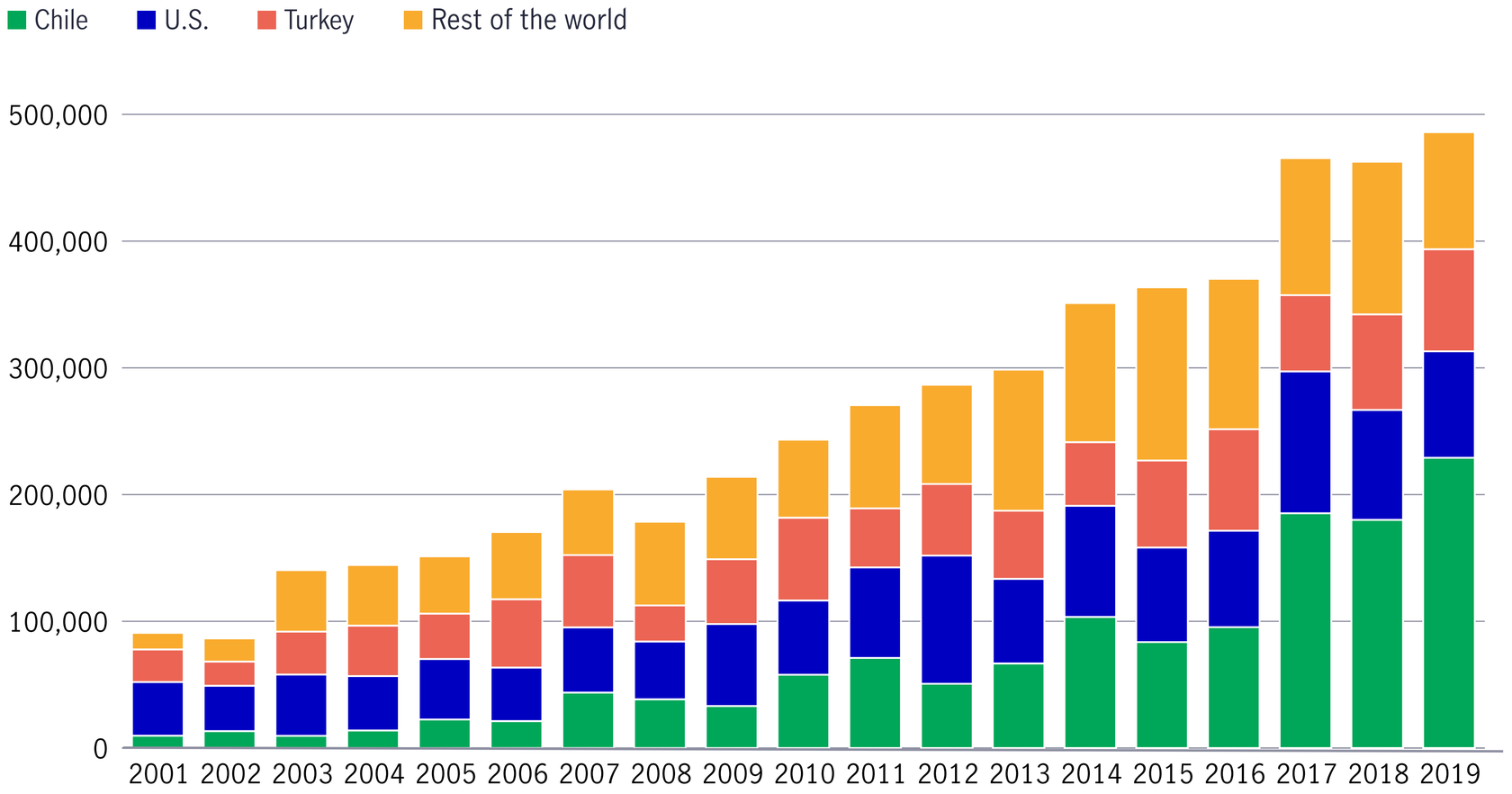


Source: USDA PSD Online, March 23, 2021. MT refers to metric tons.

Previous Next

Chile is the largest cherry exporter in the world, and its primary competitors in the global fresh cherry market are the United States and Turkey. Chile's production, however, has minimal overlap with that from these countries, and cherries are a perishable crop with a two-month shelf life, meaning that Chile has a 90% share of southern hemisphere cherry exports. In the last decade, Chile's share of the export market has more than doubled. Unlike with many other fresh fruits grown in Chile, Peru isn't a significant cherry producer or exporter and doesn't compete with Chile.

Global cherry exports (MT)

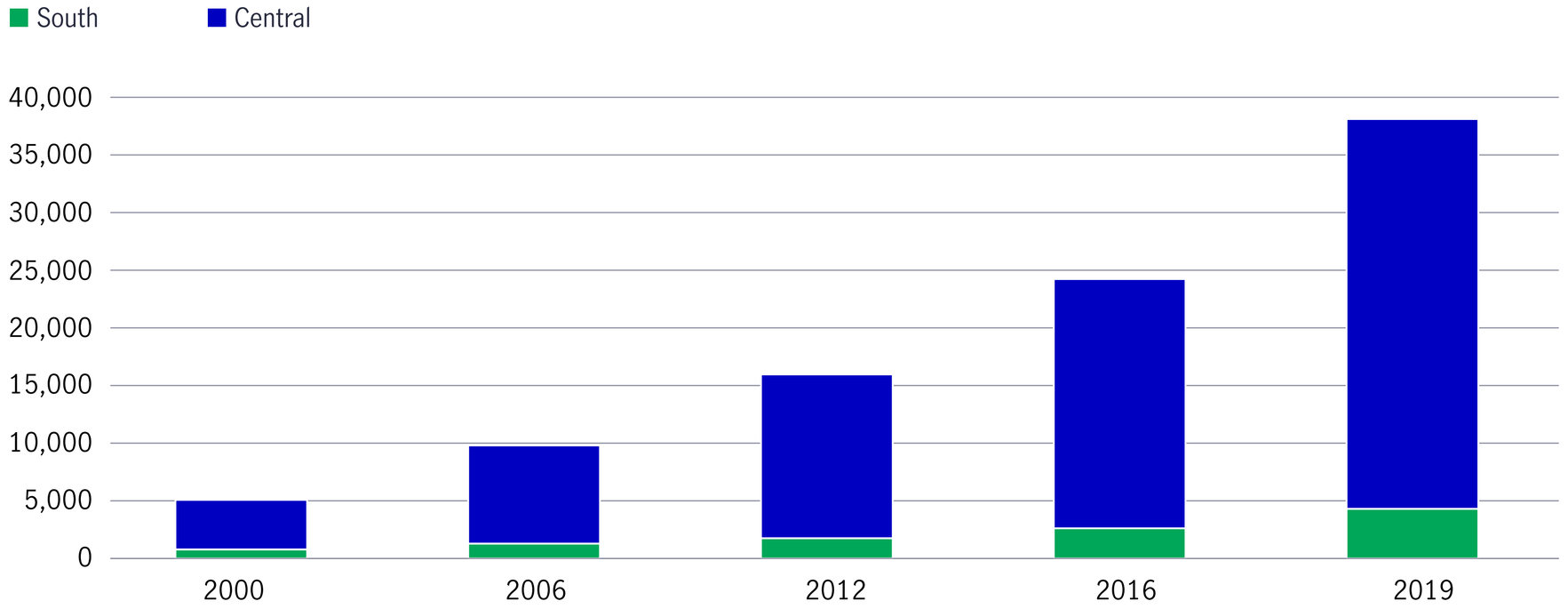


Source: USDA PSD Online, March 23, 2021. MT refers to metric tons.

Previous Next

Chile cherry market

Chile cherry area (hectares)



Source: ODEPA, November 18, 2020.

Total cherry tree areas have grown rapidly, expanding at a 12.4% CAGR from 2000 to 2019. Future expansion is likely to increase most rapidly in the southern region, where lower land prices, abundant water resources, and late-season varietal production encourage development. Late-season cherries are ideal for shipment for Chinese New Year, a major cherry consumption occasion, at a time when Chile has virtually no competitors in the global cherry export market.

Previous Next

Chile cherry cropland

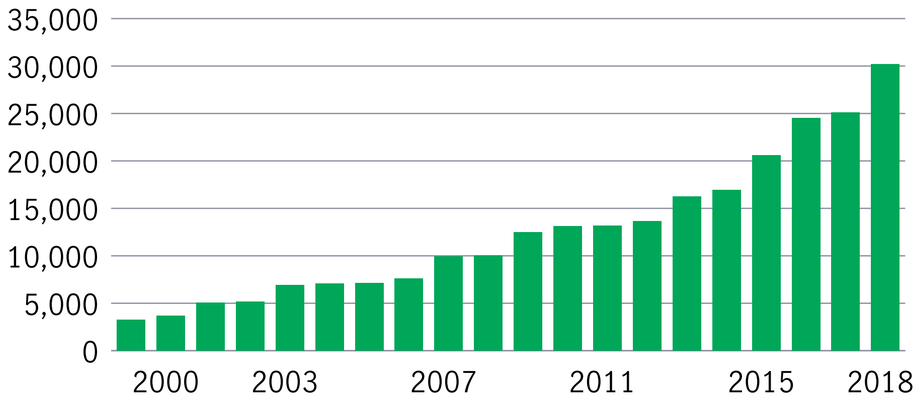
Regions	Farmland (hectares)	20-year CAGR (%)	Commentary
Central (V–VII)	33,811	11.5	• Largest production region is in Maule, where most competitive producers are based • Relatively tapered growth expected in O'Higgins due to competition for acreage and water constraints
South (VIII–XVI)	4,299	9.4	• Rapidly growing market with producers looking for expansion opportunities • Areas support late-season variety production with price premiums

Source: ODEPA, November 18, 2020. CAGR refers to compound annual growth rate.

Increased profitability of cherry production has attracted new companies; however, top players continue to lead the market. To manage risks in the cherry sector, competitive Chilean producers are investing in protective roofing and other infrastructure on cherry properties. China consistently offers the highest prices for Chilean cherries, and this pricing leads to China being the dominant export destination. If markets shift, many other markets would be willing cherry buyers, albeit at potentially slightly lower prices.

Previous Next

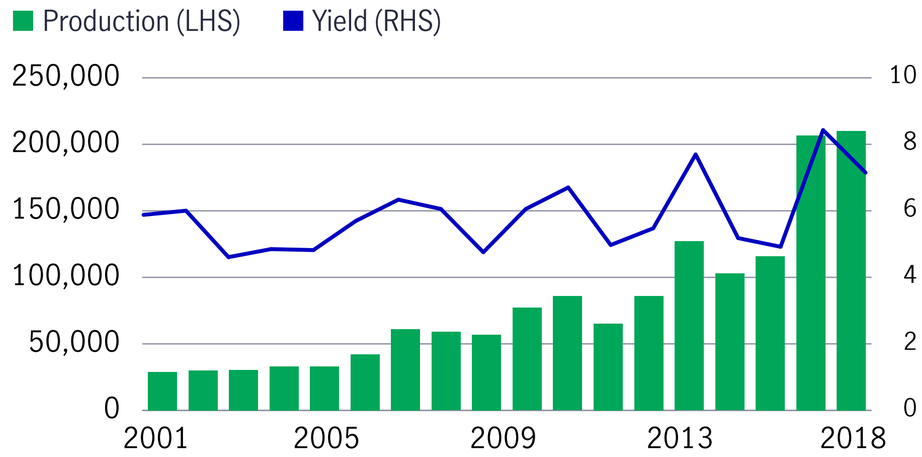
Chile cherry area (hectares)



Source: ODEPA, as of March 23, 2021.

The expansion in cherry production in recent years was driven primarily by the additional planted ha, rather than rising yields.

Chile cherry production (MT) and yield (MT/ha)



Source: ODEPA, USDA PSD, as of March 23, 2021. MT refers to metric tons. Ha refers to hectares. LHS refers ro left-hand side. RHS refers to right-hand side.

Global cherry production grew from 1.9 million MT in 2001 to 3.9 million MT in 2019, a 4.1% CAGR. The top-producing areas are the EU, the United States, Turkey, and China.

Previous Next

Chile maintains a dominant position in global cherry exports, with a 47% share in the 2019 marketing year; Turkey and the United States trailed with lower shares and slower growth in the last 10 years. Chile's cherry exports are highly concentrated to China and Hong Kong, 91% of Chile 2020 cherry exports.[25] The country's growth in total fresh cherry exports results almost exclusively from higher exports to Greater China, as growth into other markets has been more modest.

Chile cherry market risks

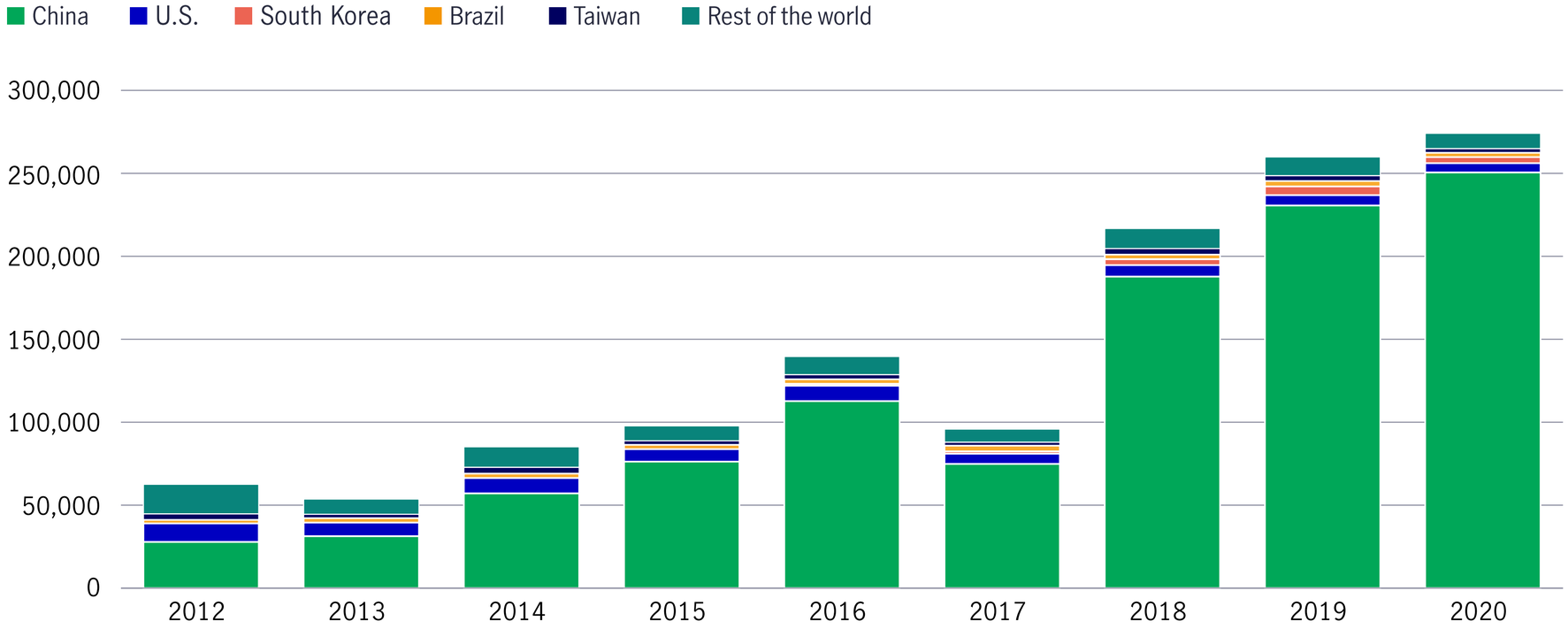
Description	Potential mitigation strategy
Exposure to Chinese market	• Diversify into other profitable markets, including South Korea and India • Collaborate with industry associations and producers to encourage low trade barriers
Weather shocks in Chile's southern growing region	• Invest in roofing and other farm infrastructure to protect crops from frost and rain • Identify and grow varieties more resistant to weather shocks
Major ramp up of Chilean production in coming years	• Focus on producing high-quality, highly demanded varieties to ensure premium prices • Build brand in key markets and develop long-term relationships with retail buyers

Previous Next

Cherries are among the most profitable crops in Chile, with gross profit margins on the farm estimated at about 50% to 60%, with higher margins for early- and late-season varietal production. The perishability of the crop has market implications, as fresh cherries can't be stored more than two months, and Chinese harvest occurs six months before the Chilean harvest. Production in China may increase, but the window will be the same, leaving a gap for Chile to supply.

Chilean producers' key sources of competitiveness include relatively low labor costs and higher crop prices as a southern hemisphere country. Producers with developed brands benefit from sustained pricing power among retailers, with grocers paying higher, more stable prices and sometimes providing grower financing for branded cherries. Key growth areas include high-end brands with retailers (particularly in China) and increasing early- and late-season varieties when supplies are more limited, resulting in price premiums. Cherry producers are also growing market share outside of China, including India, Vietnam, and Thailand.

Chile sweet cherry exports (MT)



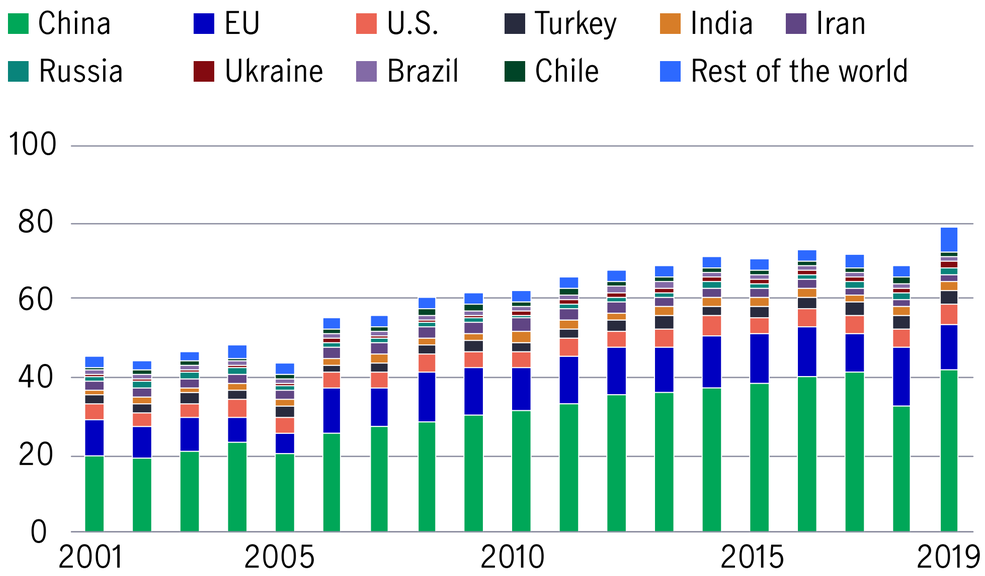
Source: ITC, UN Comtrade, March 28, 2021. MT refers to metrics tons.

Previous Next

Apples

Global fresh apple production increased from 48 million MT in 2001 to 79 million MT in 2019 (CAGR 2.8%). China is the largest driver behind expanded global apple production: China's fresh apple production more than doubled from 20 million MT in 2001 to 42 million MT in 2019 (CAGR 4.2%). In 2019, China accounted for 53% of global apple production; the EU, the United States, Turkey, and Iran are other major producers of fresh apples. Chile's apple production has remained largely stable in recent years, and in 2019, Chile produced 1.1 million MT, 1.4% of global production.

Global apple production (million MT)

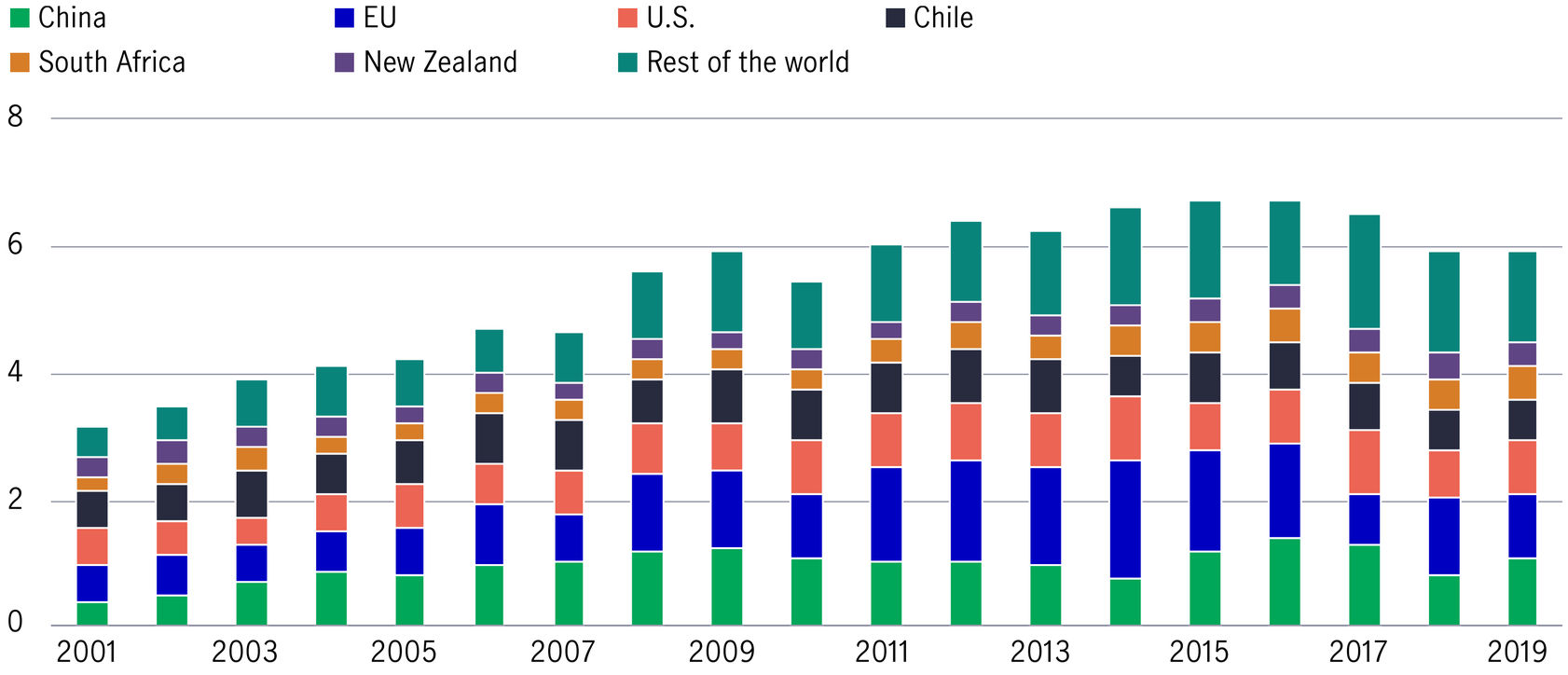


Source: USDA PSD Online, March 23, 2021. MT refers to metric tons.

Previous Next

Global apple exports have grown from 3.1 million MT in 2001 to 5.9 million MT in 2019 (CAGR 3.6%). The EU and China are the two largest exporters of fresh apples. Chile is the world's fourth-largest fresh apple exporter (and the largest in the southern hemisphere), behind the China, EU, and the United States. In 2019, Chile exported 650,000 MT of fresh apples, 59% of its apple production and 11% of its global exports.

Global apple exports (million MT)

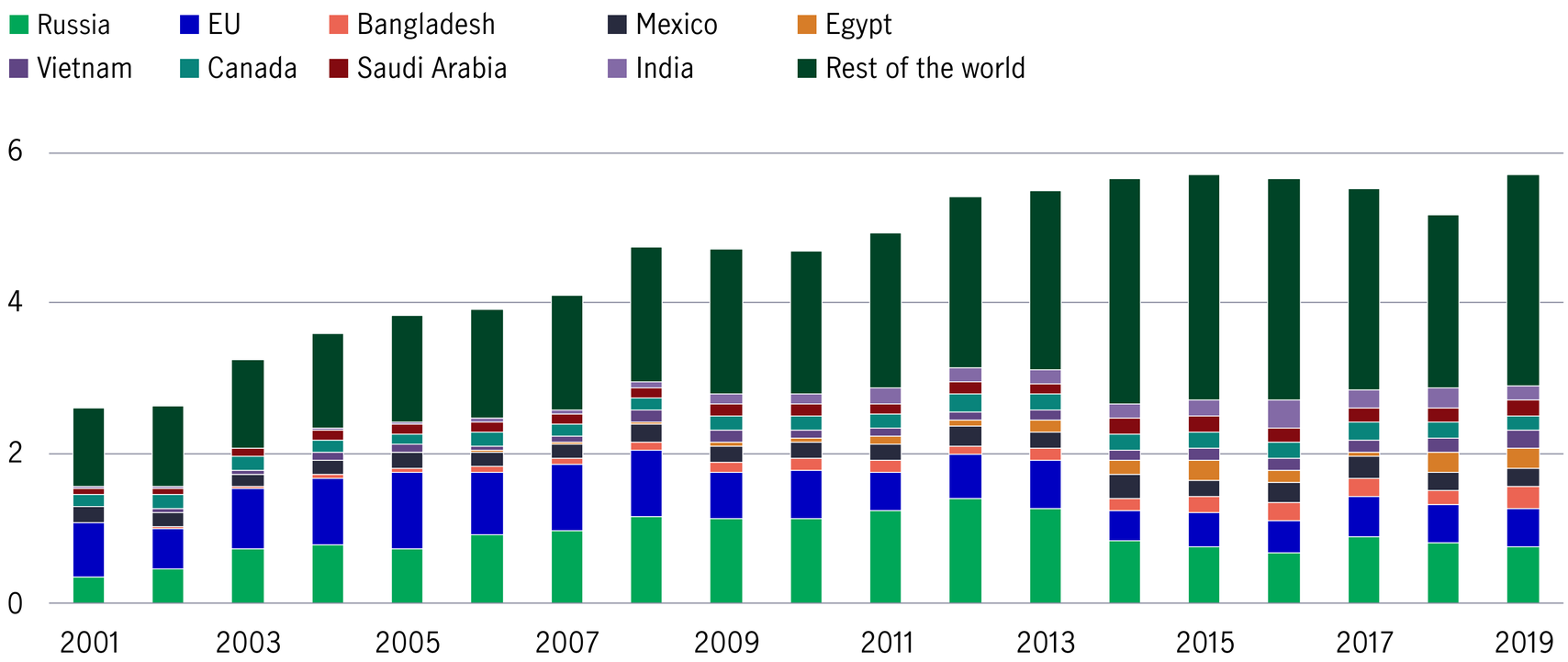


Source: USDA PSD Online, March 23, 2021. MT refers to metric tons.

Previous Next

Global apple imports increased from 2.9 million MT in 2001 to 5.9 million MT in 2019 (CAGR 4.0%): The Middle East (15%), Russia (14%), Southeast Asia (12%), and North America (10%) are the largest importing regions. Russia was the world's leading importer until 2014, when the Middle East became the world's largest fresh apple destination. The Middle East collectively imported over 891,000 MT in 2019, up from less than 180,000 MT in 2001 (CAGR 10%). In the Middle East, the top importers are Iraq, Egypt, Saudi Arabia, and the United Arab Emirates; in North America, imports have moved lower as apples are able to store longer with increased use of controlled atmosphere storage.

Global apple imports (million MT)



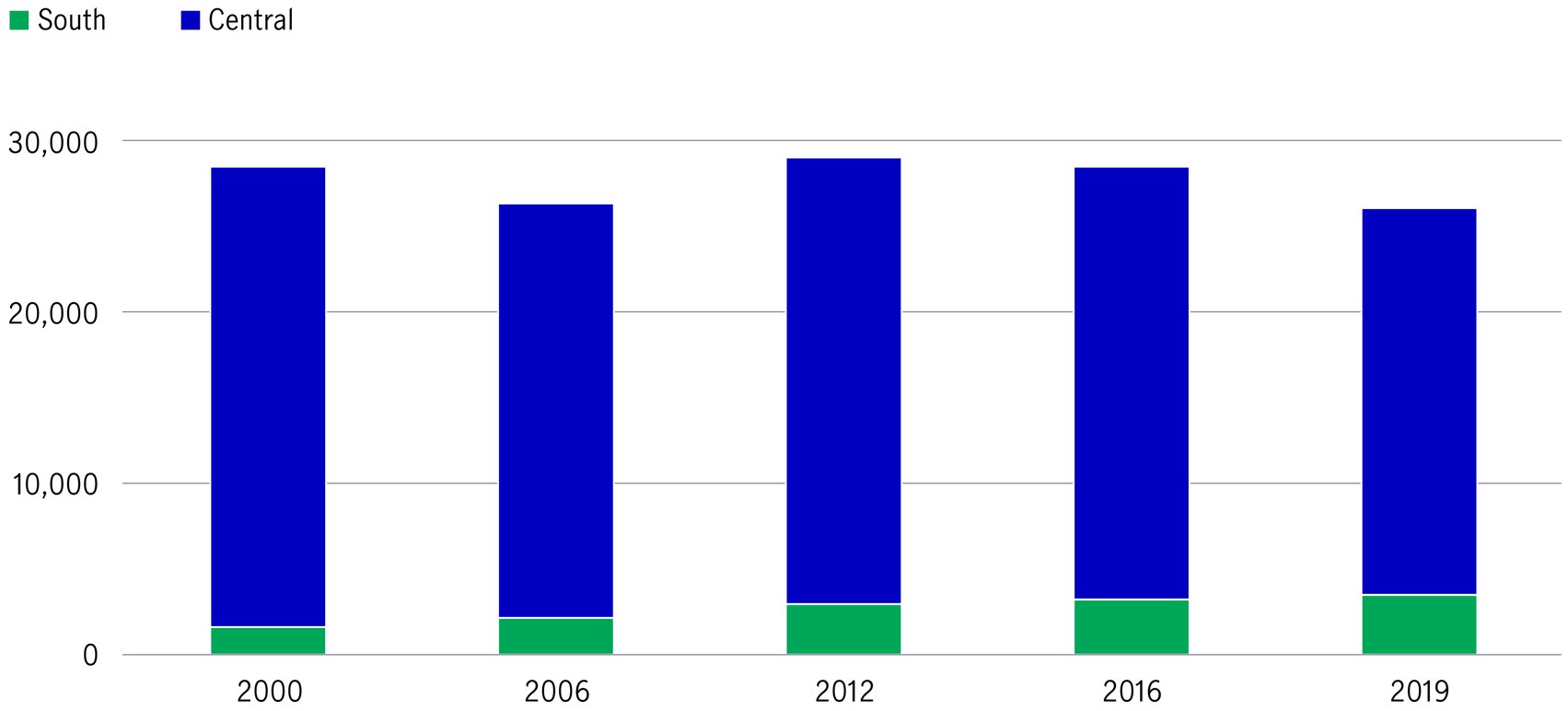
Source: USDA PSD Online, March 23, 2021. MT refers to metric tons.

Previous Next

Chile apple market

Despite lower average apple prices in recent years, Chilean apple producers have generated attractive returns by developing new blocks of patented apple varieties in the country's southern region. The overall apple area has been mostly flat, driven by lower profitability of traditional varieties and increased competitiveness of other permanent crops.

Chile apple area (hectares)



Source: ODEPA, November 18, 2020.

Previous Next

Chile apple cropland

Regions	Farmland (hectares)	20-year CAGR (%)	Commentary
Central (V–VII)	22,239	–0.9	• Production mainly concentrated in Maule, but increased competitiveness of other crops limit apple growth • Leading apple producers based in Maule
South (VIII–XVI)	3,424	4.3	Favorable climatic conditions, ample water supplies, and attractive land pricing drive apple expansion in areas near Araucanía

Source: ODEPA, November 18, 2020. CAGR refers to compound annual growth rate.

Chile's apple market is relatively mature, and the top ten players account for over half the market volume. The top three producers are Dole, Unifruit, and Frusan, and these companies have maintained their market share over the past five years. Chile ranks fourth in apple exports after China, the EU, and the United States; however, Chile lost market share in commodity apples in recent years to New Zealand and South Africa, where production is growing more rapidly. Key headwinds and risks for Chilean apple producers include lower pricing for traditional varieties and increases in manual labor costs.

Previous Next

Apple profitability ranges widely by variety, and commodity apples face margins that can be only half that of their patented counterparts. Leading producers of patented varieties can receive prices 30% to 50% higher than commodity apples.

Chile's key differentiation areas for apples include lower labor and input costs relative to the United States and a well-diversified customer base across North America, the EU, and Asia. As the global apple market continues to transition to newer, higher-priced varieties, trends in Chile are similar.

The combination of newer varieties, such as Ambrosia and Sunrise Magic; reasonable land and water costs; and a variety of growing regions enables Chile to serve as the largest apple exporter in the southern hemisphere.

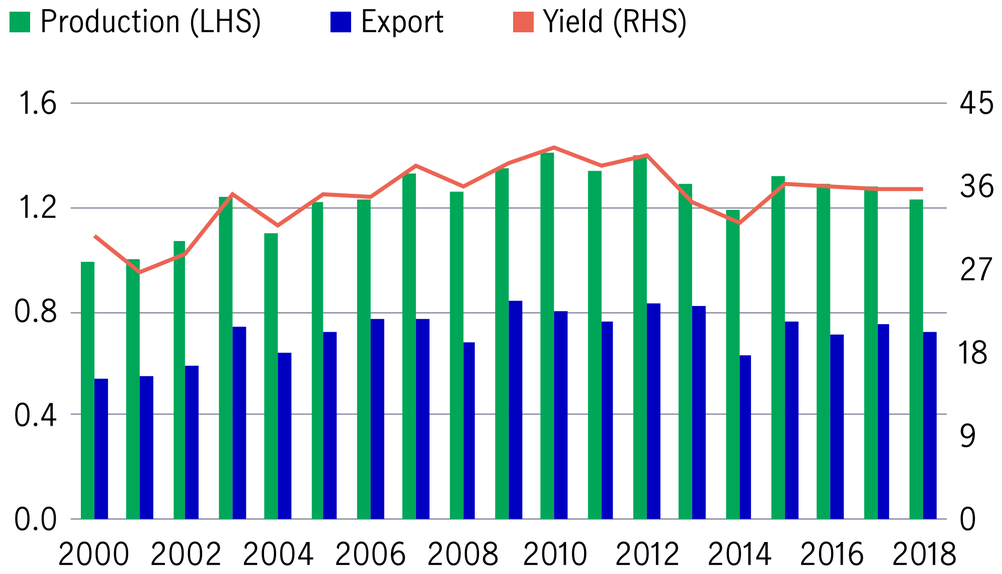
Apple-planted areas in Chile reached a peak in 1997 at nearly 40,000 ha, up from 23,000 ha in the early 1990s. Although these areas have stabilized in the last decade, yields increased from 31 MT/ha in 2000 to 36 MT/ha in 2018.

Chile apple market risks

Description	Potential mitigation strategy
Depressed profitability of traditional varieties	• Focus on patented, higher-value varieties such as Ambrosia • Develop an organic portion of apple portfolio • Diversify offering across high-income destination markets such as the EU and the U.S.
Manual labor-intensive crop	• Actively manage seasonal labor pool • Explore labor-saving technologies

Previous Next

Chile apple production (million MT) and yield (MT/ha)



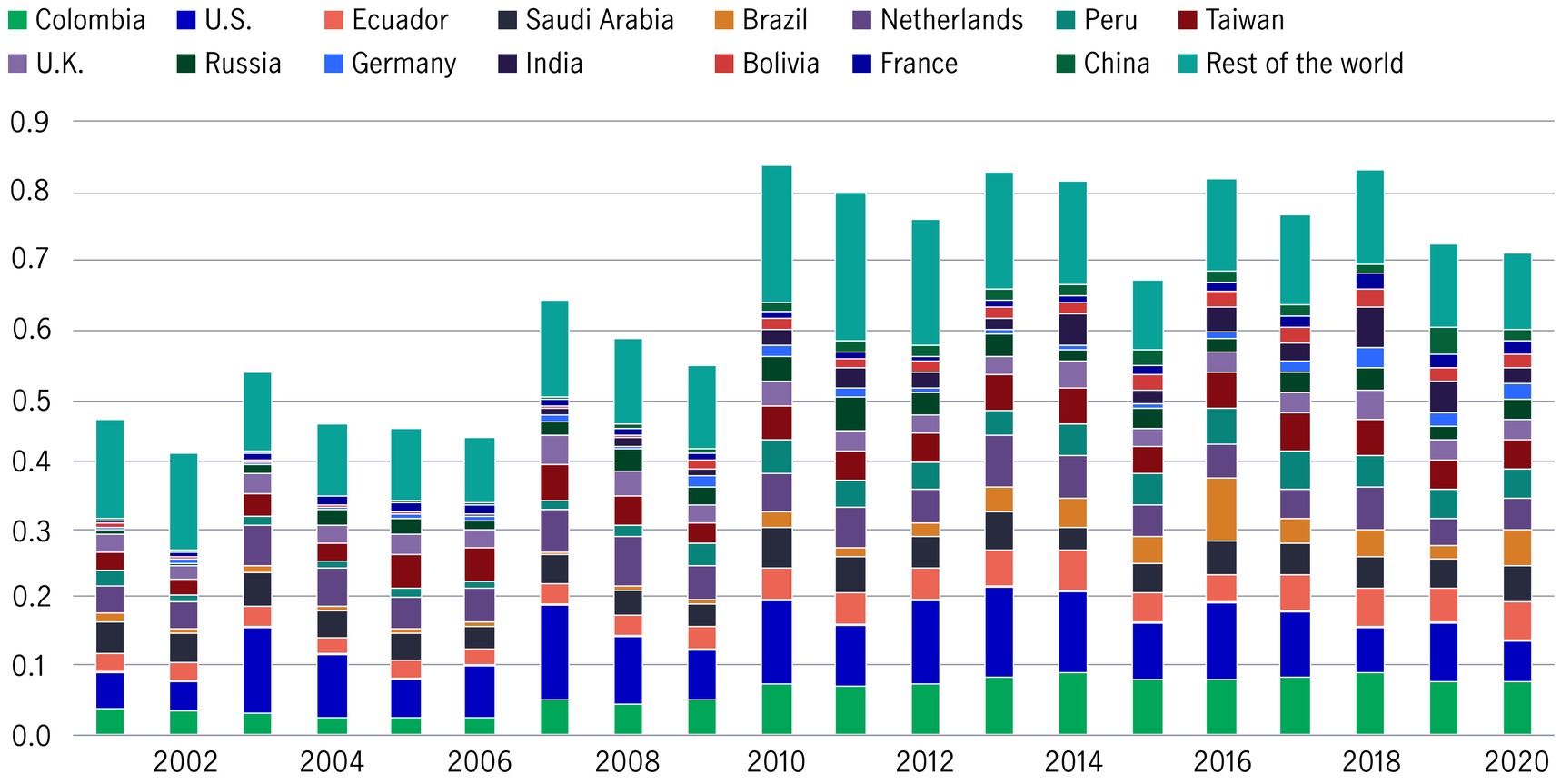
Source: USDA PSD Online, ODEPA, March 23, 2021. MT refers to metric tons. LHS refers to left-hand side. RHS refers to right-hand side.

About 58% of fresh apples produced in Chile are exported. The largest market for Chilean apples is Latin America, making up 285,000 MT and 40% of all Chilean apple exports in 2018. The EU is another major export market for Chilean apples, importing nearly 124,000 MT and accounting for 17% of Chilean apple exports. Other major markets are China and the Middle East.

Chile is the world's fourth-largest fresh apple exporter.

Previous Next

Chile apple exports (million MT)



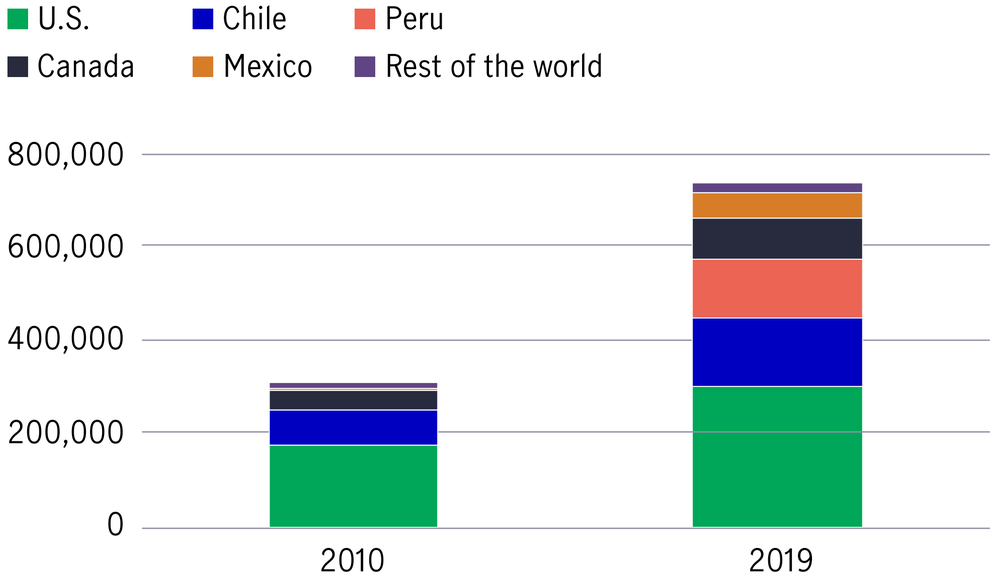
Source: ITC Trade Map, March 28, 2021. MT refers to metrics tons.

Previous Next

Blueberries

Chile's blueberry production has expanded rapidly over the past two decades in response to increasing year-round demand for blueberries in the United States, Europe, and Asia. The southern portion of Chile is especially well poised to continue to expand, as northern Chile faces increasing competition from Peru's growing blueberry sector.

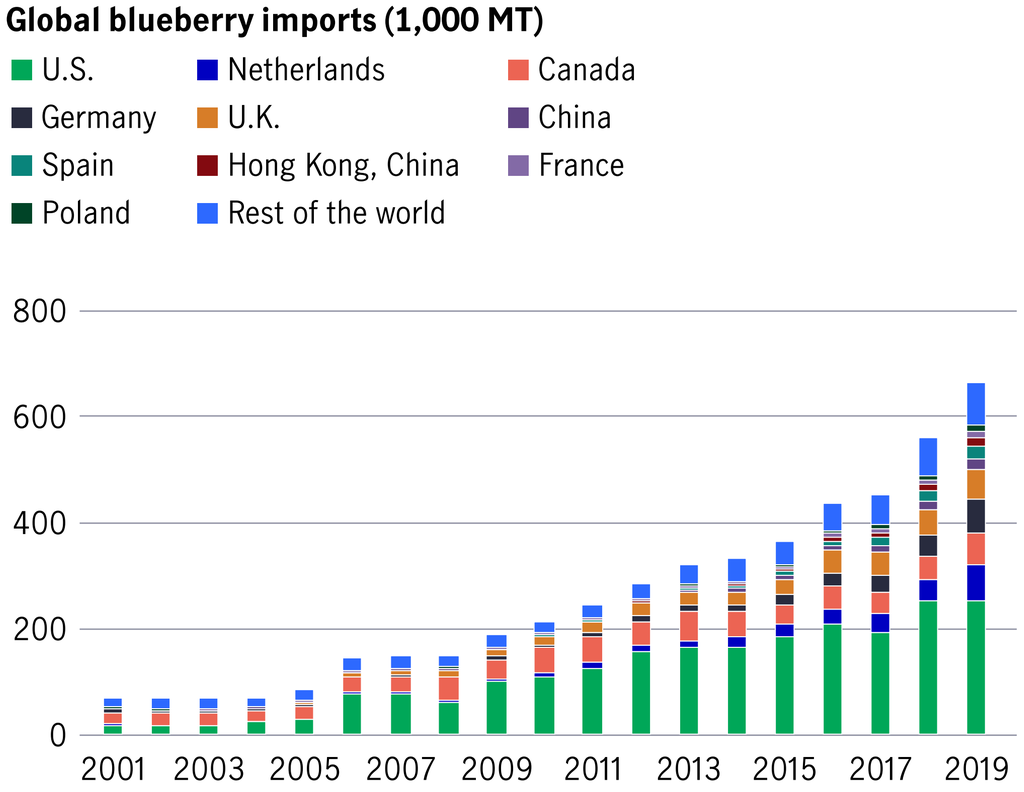
Global blueberry production (MT)



Source: International Blueberry Organization, January 11, 2021. MT refers to metric tons.

Previous Next

Global blueberry imports (1,000 MT)

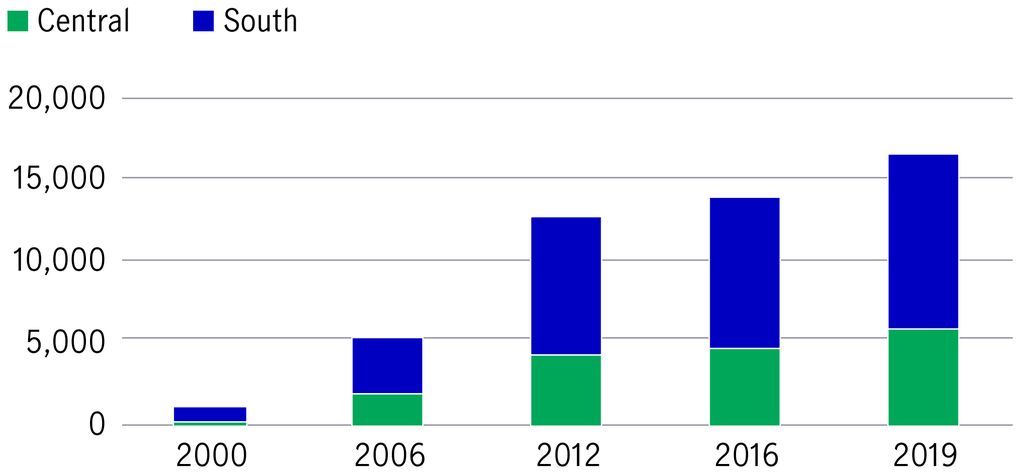


Source: ITC Trade Map, January 9, 2021. MT refers to metric tons.

"Chile's blueberry margins have eroded over time as Peru's increasing production puts price pressure on Chile's blueberry prices, especially in the northern and central regions."

Previous Next

Growth in Chile's blueberry area (hectares)



Source: ODEPA, November 18, 2020.

Chile blueberry cropland

Regions	Farmland (hectares)	20-year CAGR (%)	Commentary
Central (V–VII)	5,943	20.4	• Strong historical acreage growth, but limited room for expansion given water scarcity issues and competition for other crops • Wide dispersion of farm sizes, with most between 10 ha–50 ha
South (VIII–XVI)	10,708	13.7	• Largest market segment, with continued growth expected through greenfield development • Larger-scale farms concentrated in southern regions

Source: ODEPA, November 18, 2020. CAGR refers to compound annual growth rate.

Previous Next

Many of the leading blueberry producers in northern Chile have lost market share as they've sought new, more profitable opportunities in Peru, where blueberry harvest occurs at a similar time of year. Continued increases in labor costs and land prices will likely support this trend in the near term. The largest three blueberry producers (Hortifruit, Agroberries, and Giddings Berries) represent 25% of Chile's production. Organic is a key market for blueberries, providing demand for new blueberry development.

Chile's blueberry margins have eroded over time as Peru's increasing production puts pressure on Chile's blueberry prices, especially in the northern and central regions. Growers of newer varieties such as Legacy and Duke are most competitive in quality and yield. Labor expenses represent about 77% of total production costs, with most labor resources required for hand harvesting and for pruning and thinning.

Chile's blueberry production is most competitive in areas in which harvest timing overlaps minimally with Peru's blueberry harvest. Leading blueberry producers have a footprint across several growing regions to reduce weather and water risk; the southern region has the strongest potential for future growth on higher profit potential. Leading producers have established brands and are aligning with consumer markets by developing a reputation for quality and an ability to adapt to consumer preference, such as increasing organic demand. As a southern hemisphere producer, Chile continues to be a leading blueberry exporter, with increasing consumption in the United States, Europe, and Asia.

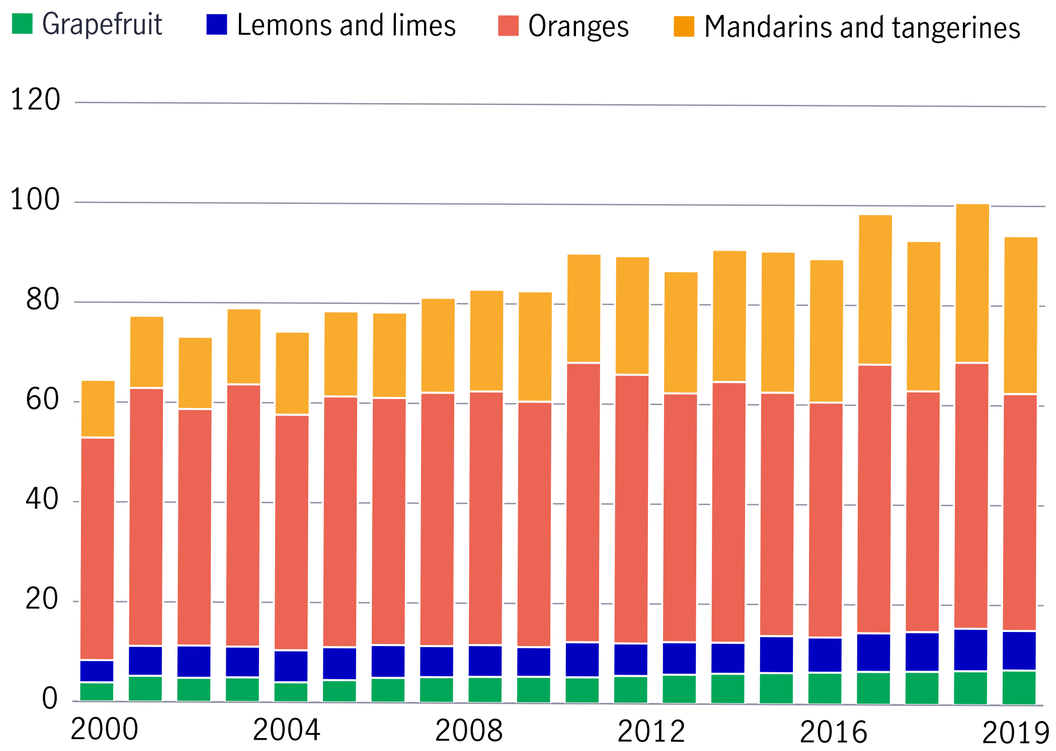
Chile blueberry market risks

Description	Potential mitigation strategy
Loss of competitiveness to Peru and Mexico	• Differentiating quality by growing high-value varieties and organics • Produce in areas that harvest outside of competitors' marketing windows • Grow presence in newer markets such as the EU and Asia
Relatively fragmented production market with varying quality	• Increase share of captive production to better control quality and traceability • Develop compensation and financing incentives to attract high-quality growers

Previous Next

Citrus

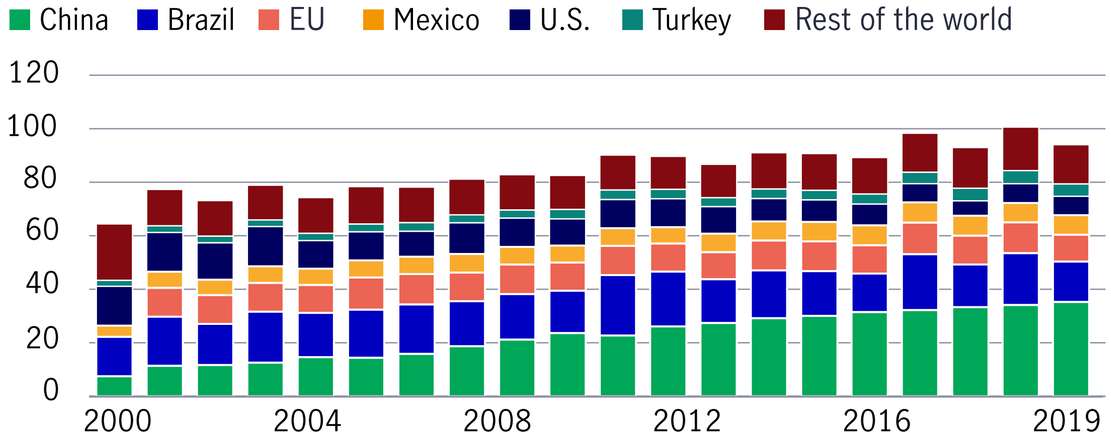
Global citrus production by type (million MT)



Source: USDA PSD, March 23, 2021. MT refers to metric tons.

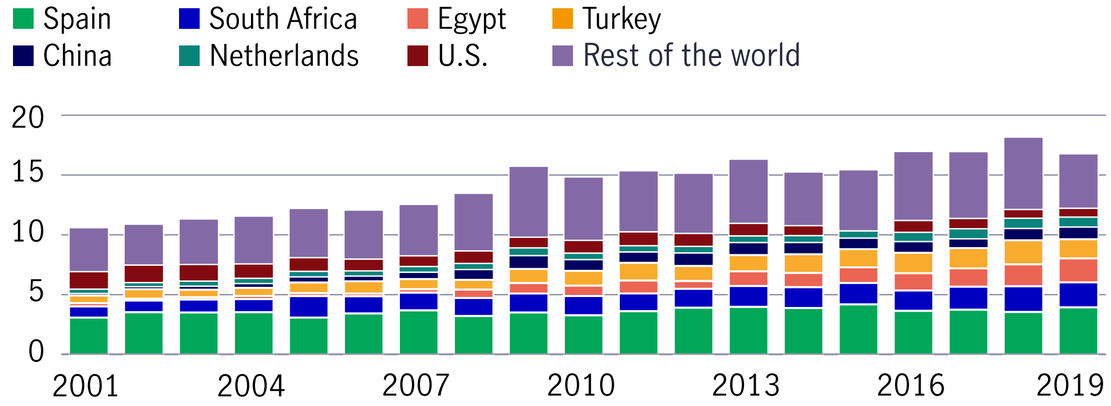
Previous Next

Global citrus (orange, lemon, lime, mandarin, grapefruit) production (million MT)



Source: USDA PSD, March 23, 2021. MT refers to metric tons.

Global citrus exports (million MT)



Source: USDA FAS, March 23, 2021. MT refers to metric tons.

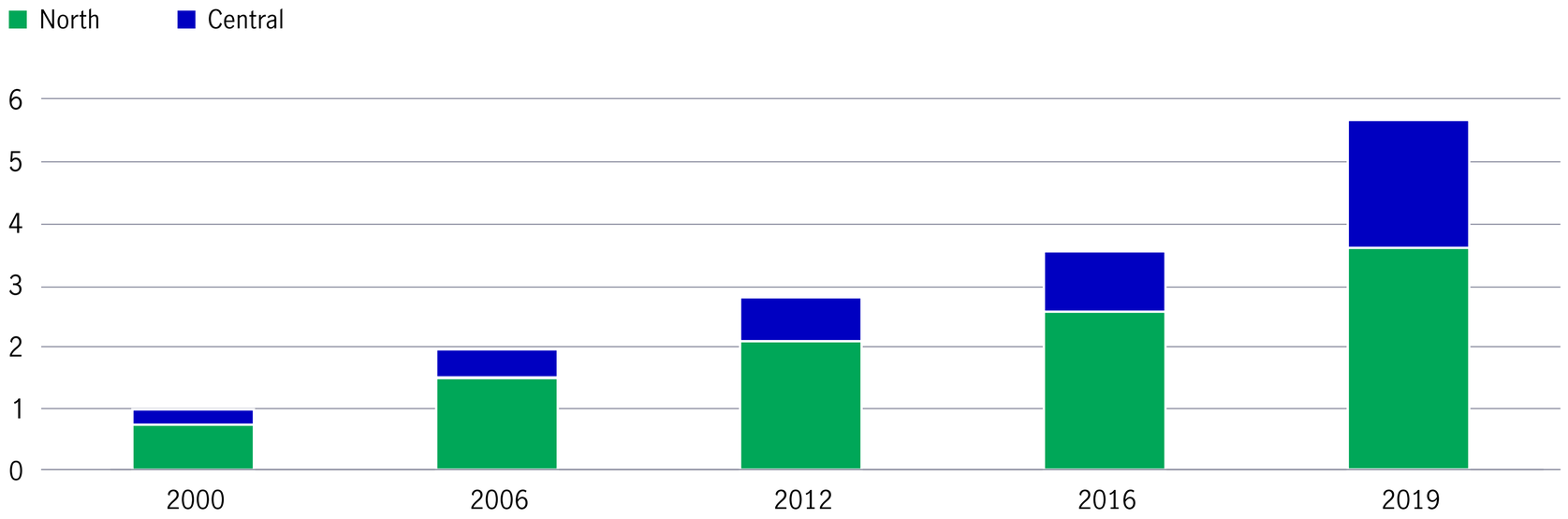
While Chile is a minor citrus exporter, it plays a major role among southern hemisphere producers and is a major supplier to the United States.

Previous Next

Chile's citrus area has grown at a 9.6% CAGR from 2000 to 2019. Citrus represents an attractive growth opportunity in Chile given its lower water requirements and growing global consumption. Given the overlap in growing areas, Chile's leading producers of citrus are the same as those in avocados, and the top three producers make up 35% of the overall market.

While Chile is a minor citrus exporter, it plays a major role among southern hemisphere producers and is a major supplier to the United States, serving the country during the northern hemisphere citrus off-season, and the opening of Asian markets provides further avenues for growth.

Chile citrus area (thousand hectares)



Source: USDA FAS, March 23, 2021.

Previous Next

Based on recent prices and costs, citrus is among the highest margin crops in Chile, most notably for easy peelers in the northern region. Export prices across all citrus varieties are usually higher than domestic. Yields differ by citrus variety, with easy peelers in the range of 30,000 to 40,000 kilograms per ha. Most direct costs are labor for harvesting, pruning, and thinning.

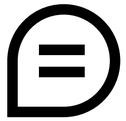
Chile's top citrus producers are clustered in the Coquimbo Region, where growing conditions are favorable for early-season mandarin varieties, which have strong demand in export markets. Given water availability in key citrus regions, having multiple water sources and efficient irrigation systems is important for managing water risk and cost. The potential opening of the Chinese market for Chile could offer growth opportunities to supply Chinese consumers during months when China's citrus production is low.

Chile citrus cropland

Regions	Farmland (hectares)	20-year CAGR (%)	Commentary
North (III, IV)	3,784	8.8	• Mandarin production is concentrated in Coquimbo • Citrus is relatively water efficient
Central (V–VII)	1,910	11.8	• Mandarins, lemons, and oranges • Most productive areas are located away from the coast

Source: ODEPA, November 18, 2020. CAGR refers to compound annual growth rate.

Previous Next



"The potential opening of the Chinese market for Chile could offer growth opportunities to supply Chinese consumers during months when China's citrus production is low."

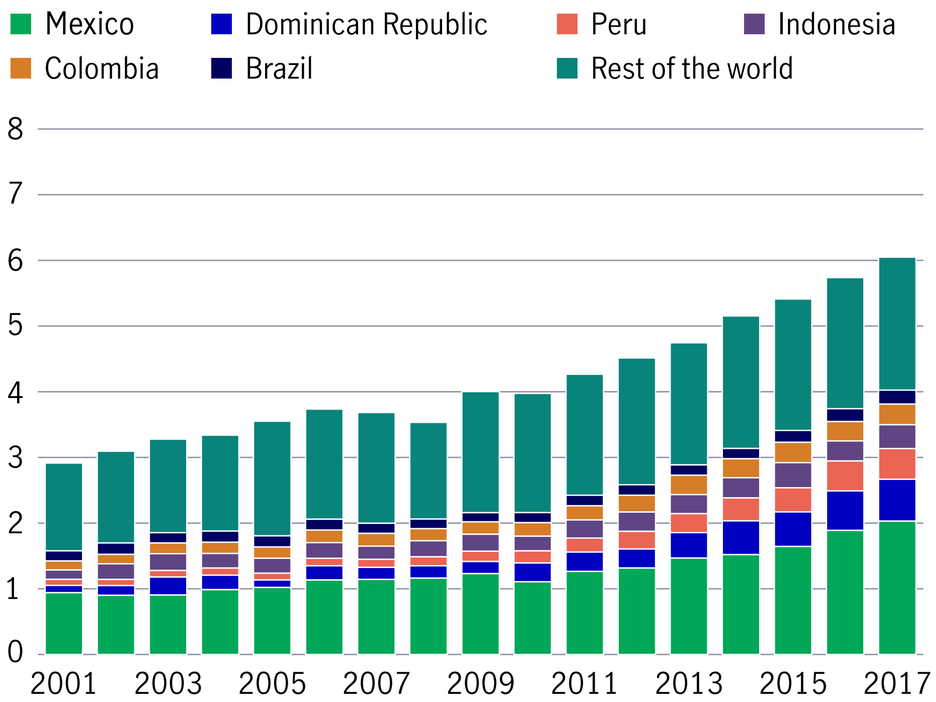
Chile citrus market risks

Description	Potential mitigation strategy
Production concentrated in highly drought-prone regions	• Develop farms with multiple sources of water and efficient irrigation technology • Grow water-efficient varieties
Concentrated export market in the U.S.	• Diversify into new markets such as Asia, which recently opened its borders to Chilean citrus • Develop sweeter, seedless varieties favored in Asian markets, such as Tango and Orri

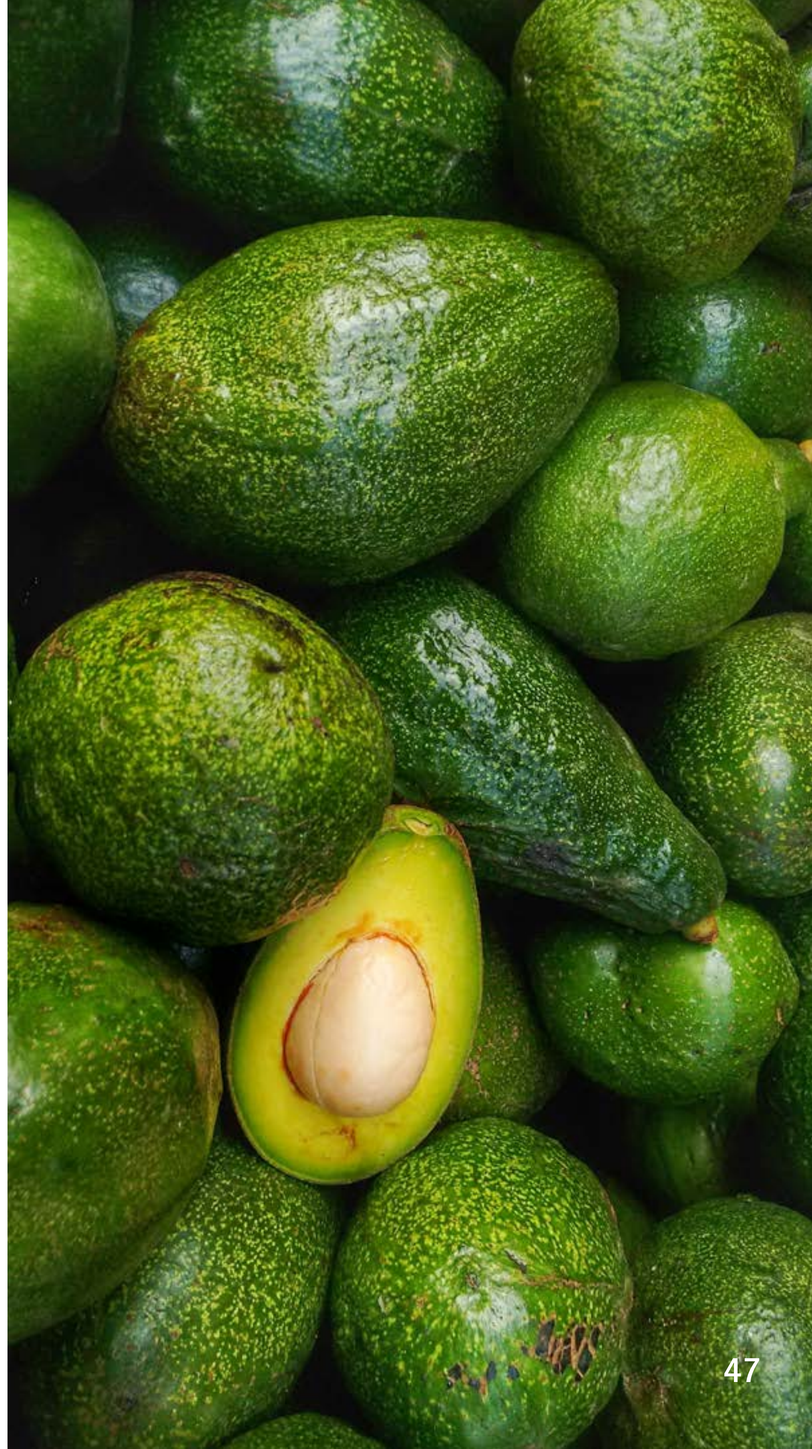
Previous Next

Avocados

Global avocado production (million MT)



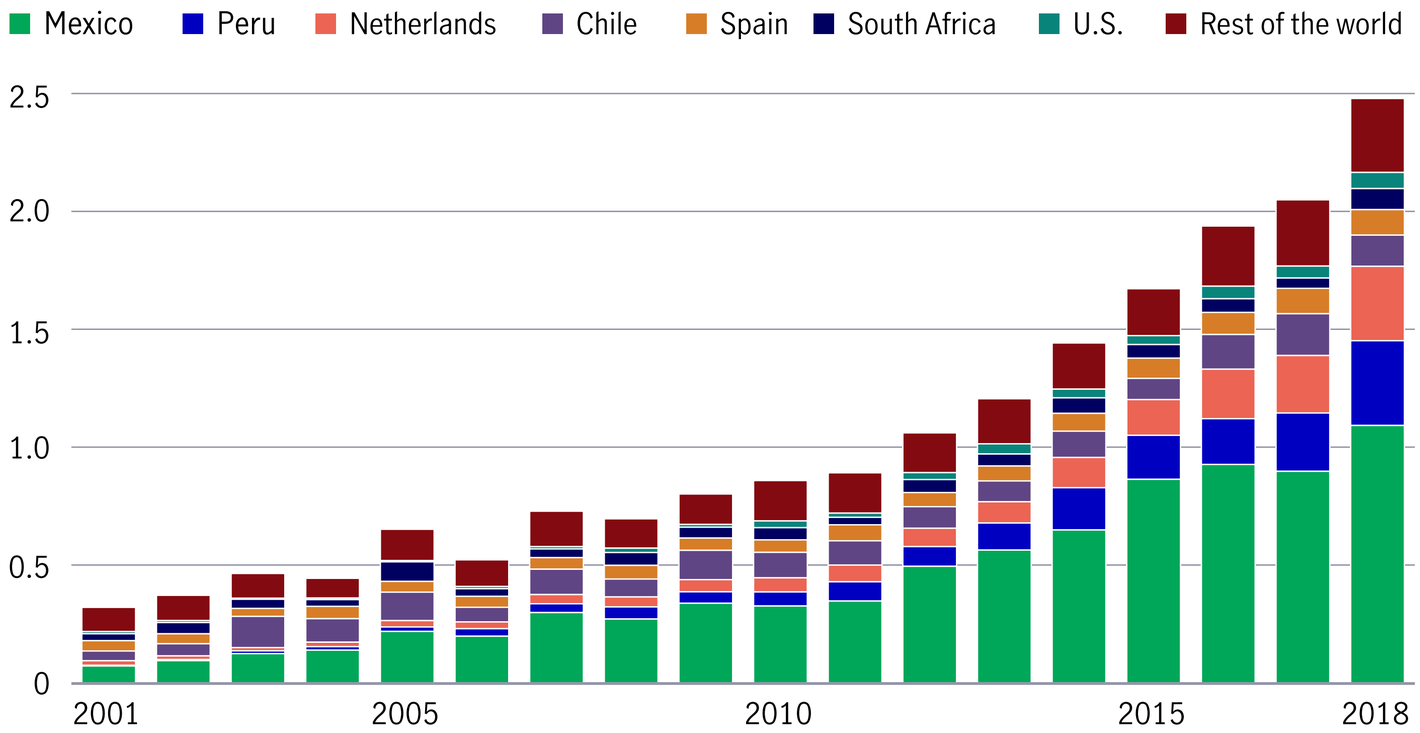
Source: FAOSTAT, as of March 22, 2021. MT refers to metric tons.



Previous Next

Chile's avocado production has steadily increased; however, planted areas in recent years have been curtailed by the crop's intensive water needs in drought-prone regions. Still, Chile's avocado yields are among the highest globally.

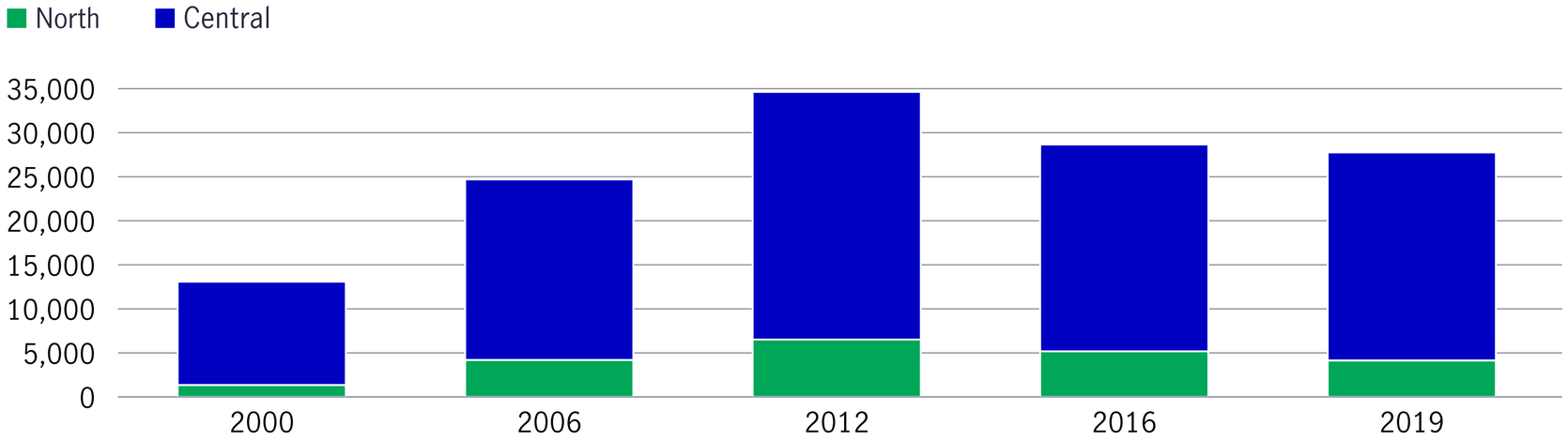
Global avocado exports (million MT)



Source: FAOSTS, as of March 22, 2021. MT refers to metric tons.

Previous Next

Chile avocado area (hectares)



Source: ODEPA, November 18, 2020.

Chile avocado cropland

Regions	Farmland (hectares)	20-year CAGR (%)	Commentary
North (III, IV)	4,135	6.1	Production is focused in Coquimbo, but water issues and increasing attractiveness of citrus will likely temper expansion
Central (V–VII)	23,628	3.8	• Largest segment of the market is in Valparaíso, where most commercial producers are based • Santiago Metropolitan Region production catered to domestic market • Relatively average farm sizes (38% of farms 100+ ha)

Source: ODEPA, November 18, 2020. CAGR refers to compound annual growth rate. Ha refers to hectares.

Previous Next

Chile's avocado sector is relatively saturated, with the leading three producers (Propal, Agricorn, and Santa Cruz) making up 56% of the total market. With strong global demand growth, producers such as Mexico and Peru are likely to erode Chile's share of the global export market; Mexico dominates the global avocado market, accounting for half the total.

Avocados yield an attractive margin, supported by growing domestic and export market prices. Labor accounts for the largest share of farming costs, about 35%, including harvest, chemical application, and irrigation maintenance.

Chile's top avocado growers are in the Valparaíso region, where the climate is most favorable for avocado production, and it's closer to the port. Most Chilean avocados are exported to the EU, where demand is growing. Key factors for profitability include multiple water sources and efficient irrigation technology. Chile features counterseasonal production to serve growing avocado markets such as Asia, especially China and Korea.

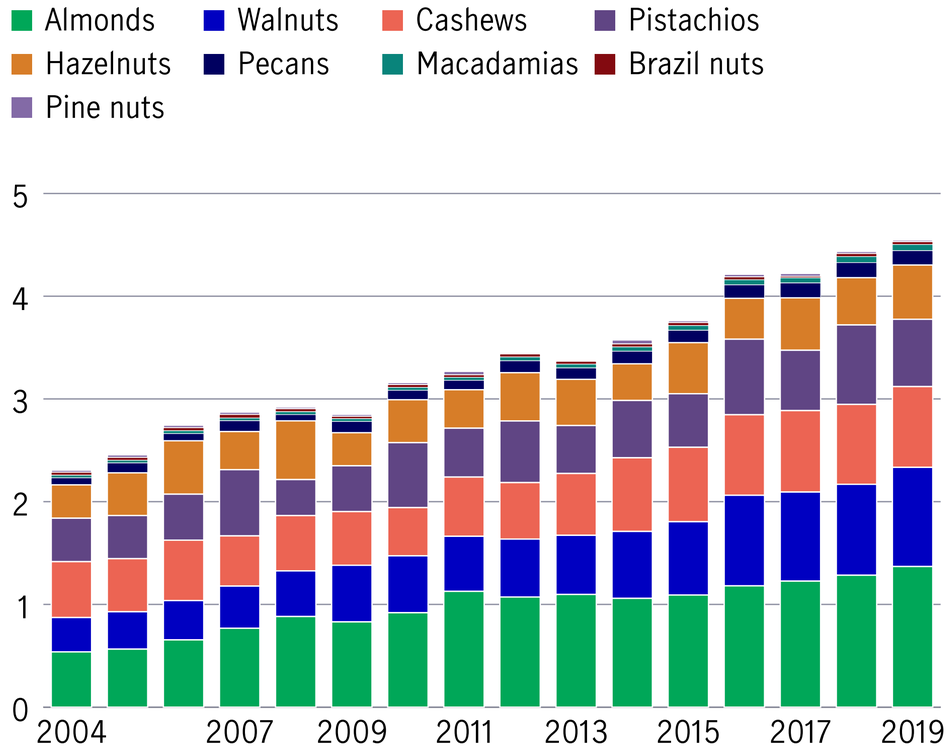
Chile avocado market risks

Description	Potential mitigation strategy
Water-intensive crop limits expansion opportunities and creates reputational risk	• Develop farms with multiple sources of water and efficient irrigation technology • Showcase sustainability water use
Increased competitive pressure from other producers, such as Mexico	• Focus on production of higher-quality varieties • Grow presence in non-U.S. markets such as the EU and Asia

Previous Next

Tree nuts

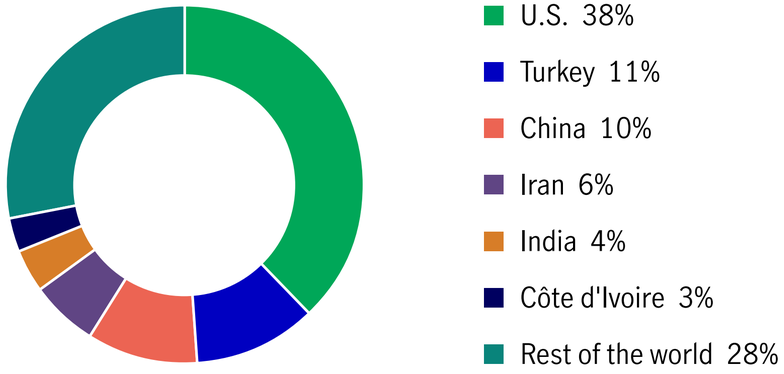
Global tree nut production by type (million MT)



Source: International Nut and Dried Fruit Council, March 31, 2021. MT refers to metric tons.

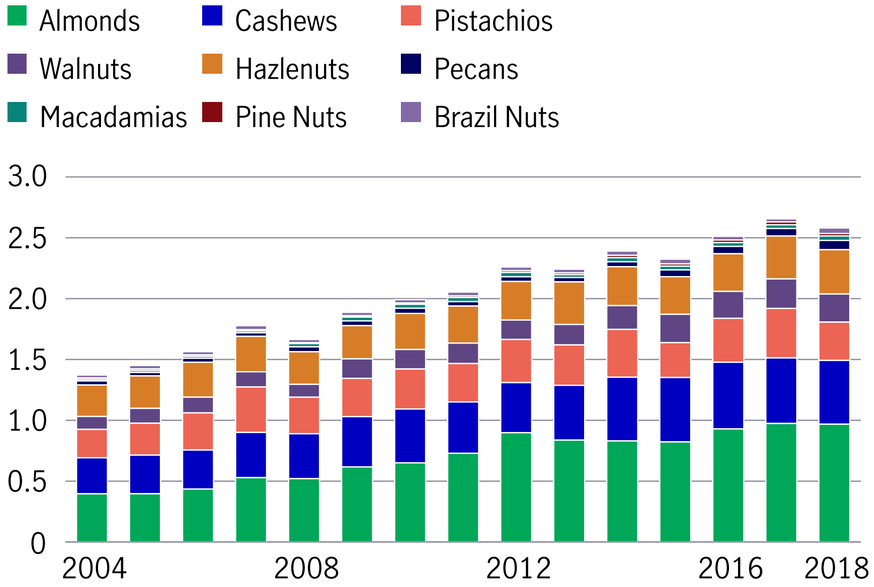
Previous Next

Global tree nut production by country, 2019–2020 marketing year



Source: International Nut and Dried Fruit Council, March 31, 2021.

Global tree nut trade (million MT)



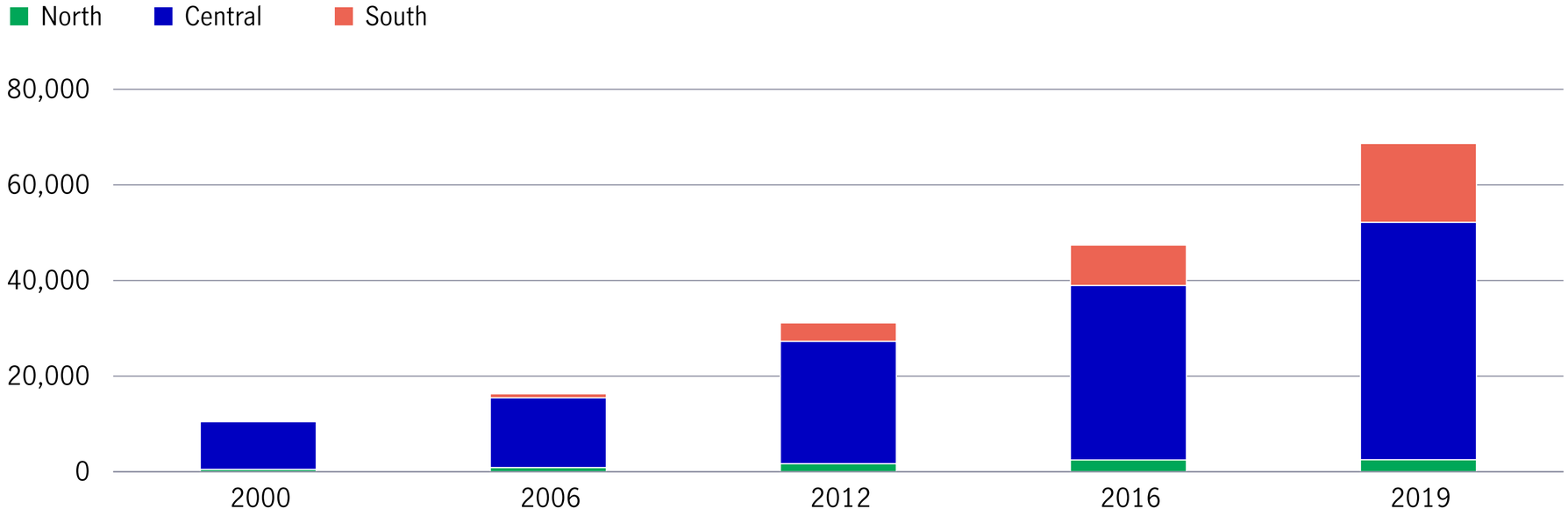
Source: International Nut and Dried Fruit Council, March 31, 2021. MT refers to metric tons.

"The Chilean tree nut area has grown rapidly, increasing at 10.4% CAGR from 2001 to 2019."

Previous Next

The Chilean tree nut area has grown rapidly, increasing at a 10.4% CAGR from 2000 to 2019. Walnuts are the leading tree nut in the central and northern regions, while hazelnuts dominate growth in the central and southern regions. Walnuts are the leading tree nut in Chile by area, production volume, and exports.[2]

Chile tree nut area: walnuts, hazelnuts, and almonds (hectares)



Source: ODEPA, November 18, 2020.

Previous Next

Chilean tree nut production is relatively small and fragmented; however, the sector has strong growth drivers, as consumption of tree nuts increases globally and Chile is able to leverage similar strengths to its more traditional agricultural exports. The top three Chilean tree nut producers account for 20% of the market by volume, a lower share compared with other Chilean crop sectors. The United States is the global leader in tree nut exports, accounting for half of all tree nuts exported globally.[26]

Chile tree nut cropland

Regions	Farmland (hectares)	20-year CAGR (%)	Commentary
North (III, IV)	2,501	9.2	Walnuts account for most of northern acreage in Coquimbo
Central (V–VII)	49,666	8.8	• Walnuts are most competitive in regions RM, followed by O'Higgins and Maule • Most almond acreage is limited to RM region
South (VIII–XVI)	16,502	34.4	• Rapid growth of hazelnut acreage due to favorable growing conditions • Pockets of walnut growth limited to Biobío and Ñuble

Source: ODEPA, November 18, 2020. CAGR refers to compound annual growth rate.

Previous Next

Compared to fruits, tree nut production typically has lower capex needs and lower production costs (mainly due to mechanical harvesting). Capex expenditures per ha are generally lower than most tree fruits and are led by irrigation and orchard infrastructure. Chile's tree nut sector is poised for growth as the country's natural resources support expansion and consumption growth enables it to export tree nuts to many of the markets in which its producers sell other permanent crops.

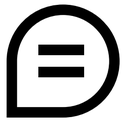
Chile tree nut market risks

Description	Potential mitigation strategy
Relatively fragmented production market with varying quality	• Increase share of captive production to better control quality and traceability • Develop compensation and financing incentives to attract high-quality growers
Long storability periods create direct competition with the U.S.	• Develop competitive marketing programs that time sales during high pricing periods • Focus on production of high-quality tree nut varieties that are favored by buyers

Previous Next

Looking forward

Chile plays a leading role in the export of high-value fruit, nut, and vegetable crops globally. As global incomes rise, consumers are seeking higher-quality foods and enhanced nutrition.[24] While the country faced internal political changes as well as the COVID-19 pandemic in 2020, Chile's agriculture sector remained one of the world's top suppliers of high-value crops. Its political climate in 2021 will be guided by the process of writing the new constitution, which could lead to substantial policy shifts in terms of government services and water rights legislation. As the country seeks more equitable access to economic and social opportunities for all Chileans, the overall open market economy aspects of free trade and openness to investment are expected to continue. The drivers that underpin Chile's competitive advantage in producing and exporting high-value crops will further enable development in growing markets as global demand grows, and Chile is poised to supply sustainably produced foods.



"While the country faced internal political changes as well as the COVID-19 pandemic in 2020, Chile's agriculture sector remained one of the world's top suppliers of high-value crops."

1 Agricultural support, OECD, as of March 23, 2021. **2** "2019 Panorama de la Agricultura Chilena," ODEPA, July 2019. **3** "Population, total," The World Bank, as of March 25, 2021. **4** International Monetary Fund, March 2021. **5** 2021 Index of Economic Freedom, Heritage Foundation, as of March 25, 2021. **6** "GDP per capita (current US$)—Chile," The World Bank, as of March 24, 2021. **7** "GDP (current US$)," The World Bank, as of March 28, 2021. **8** "The World Bank in Chile: overview," The World Bank, as of April 21, 2021. **9** World Trade Organization, March 22, 2021. **10** Transparency International, as of March 25, 2021. **11** 2020 Index of Economic Freedom, as of March 25, 2021. **12** World Economic Forum, as of March 22, 2021. **13** "Chile voted to write a new constitution," the *Washington Post*, October 30, 2020. **14** "Trends shaping education 2017," OECD, as of March 29, 2021. **15** Bloomberg, as of March 29, 2021. **16** USDA Production, Supply and Distribution, as of March 25, 2021. **17** 2017 Census of Agriculture, as of March 24, 2021. **18** HNRG estimate, March 2021, based on ODEPA data. **19** "Informe con Datos Macroeconómicos y del Sector Silvoagropecuario," ODEPA, October 2018. **20** USDA ERS, as of April 12, 2021. **21** "Agricultura Chilena: Reflexiones y Desafíos al 2020," ODEPA, as of May 4, 2021. **22** "Agricultura Orgánica, ODS, Cambio Climático: Mercado internacional y nacional," ODEPA, as of April 5, 2021. **23** Chilean Fruit Exporters Association (ASOEX), April 21, 2021. **24** "Agricultura Chilena: Reflexionces y Desafíos al 2030," ODEPA, as of April 12, 2021. **25** ITC Trade Map, as of March 28, 2021. **26** International Nut and Dried Fruit Council, March 2021.

Previous Next

About Hancock Natural Resource Group

Hancock Natural Resource Group, Inc. is a registered investment adviser and part of Manulife Investment Management's private markets platform. We specialize in global farmland and timberland portfolio development and management on behalf of our investors worldwide. Our timber division manages approximately 5.4 million acres of timberland across the United States and in Canada, New Zealand, Australia, and Chile. Our agricultural investment group oversees approximately 474,000 acres of prime farmland in major agricultural regions of the United States and in Canada and Australia.

About Manulife Investment Management

Manulife Investment Management is the global wealth and asset management segment of Manulife Financial Corporation. We draw on more than a century of financial stewardship to partner with clients across our institutional, retail, and retirement businesses globally. Our specialist approach to money management includes the highly differentiated strategies of our fixed-income, specialized equity, multi-asset solutions, and private markets teams—along with access to specialized, unaffiliated asset managers from around the world through our multimanager model.

A widespread health crisis such as a global pandemic could cause substantial market volatility, exchange-trading suspensions and closures, and affect portfolio performance. For example, the novel coronavirus disease (COVID-19) has resulted in significant disruptions to global business activity. The impact of a health crisis and other epidemics and pandemics that may arise in the future could affect the global economy in ways that cannot necessarily be foreseen at the present time. A health crisis may exacerbate other preexisting political, social, and economic risks. Any such impact could adversely affect the portfolio's performance, resulting in losses to your investment

Previous Next

Manulife Investment Management

Investing involves risks, including the potential loss of principal. Financial markets are volatile and can fluctuate significantly in response to company, industry, political, regulatory, market, or economic developments. These risks are magnified for investments made in emerging markets. Currency risk is the risk that fluctuations in exchange rates may adversely affect the value of a portfolio's investments.

The information provided does not take into account the suitability, investment objectives, financial situation, or particular needs of any specific person. You should consider the suitability of any type of investment for your circumstances and, if necessary, seek professional advice.

This material is intended for the exclusive use of recipients in jurisdictions who are allowed to receive the material under their applicable law. The opinions expressed are those of the author(s) and are subject to change without notice. Our investment teams may hold different views and make different investment decisions. These opinions may not necessarily reflect the views of Manulife Investment Management or its affiliates. The information and/or analysis contained in this material has been compiled or arrived at from sources believed to be reliable, but Manulife Investment Management does not make any representation as to their accuracy, correctness, usefulness, or completeness and does not accept liability for any loss arising from the use of the information and/or analysis contained. The information in this material may contain projections or other forward-looking statements regarding future events, targets, management discipline, or other expectations, and is only current as of the date indicated. The information in this document, including statements concerning financial market trends, are based on current market conditions, which will fluctuate and may be superseded by subsequent market events or for other reasons. Manulife Investment Management disclaims any responsibility to update such information.

Neither Manulife Investment Management or its affiliates, nor any of their directors, officers or employees shall assume any liability or responsibility for any direct or indirect loss or damage or any other consequence of any person acting or not acting in reliance on the information contained here. All overviews and commentary are intended to be general in nature and for current interest. While helpful, these overviews are no substitute for professional tax, investment or legal advice. Clients should seek professional advice for their particular situation. Neither Manulife, Manulife Investment Management, nor any of their affiliates or representatives is providing tax, investment or legal advice. This material was prepared solely for informational purposes, does not constitute a recommendation, professional advice, an offer or an invitation by or on behalf of Manulife Investment Management to any person to buy or sell any security or adopt any investment strategy, and is no indication of trading intent in any fund or account managed by Manulife Investment Management. No investment strategy or risk management technique can guarantee returns or eliminate risk in any market environment. Diversification or asset allocation does not guarantee a profit or protect against the risk of loss in any market. Unless otherwise specified, all data is sourced from Manulife Investment Management. Past performance does not guarantee future results.

This material has not been reviewed by, is not registered with any securities or other regulatory authority, and may, where appropriate, be distributed by the following Manulife entities in their respective jurisdictions. Additional information about Manulife Investment Management may be found at manulifeim.com/institutional.

Australia: Hancock Natural Resource Group Australasia Pty Limited., Manulife Investment Management (Hong Kong) Limited. Brazil: Hancock Asset Management Brasil Ltda. Canada: Manulife Investment Management Limited, Manulife Investment Management Distributors Inc., Manulife Investment Management (North America) Limited, Manulife Investment Management Private Markets (Canada) Corp. China: Manulife Overseas Investment Fund Management (Shanghai) Limited Company. European Economic Area Manulife Investment Management (Ireland) Ltd. which is authorised and regulated by the Central Bank of Ireland Hong Kong: Manulife Investment Management (Hong Kong) Limited. Indonesia: PT Manulife Aset Manajemen Indonesia. Japan: Manulife Investment Management (Japan) Limited. Malaysia: Manulife Investment Management (M) Berhad 200801033087 (834424-U) Philippines: Manulife Asset Management and Trust Corporation. Singapore: Manulife Investment Management (Singapore) Pte. Ltd. (Company Registration No. 200709952G) South Korea: Manulife Investment Management (Hong Kong) Limited. Switzerland: Manulife IM (Switzerland) LLC. Taiwan: Manulife Investment Management (Taiwan) Co. Ltd. United Kingdom: Manulife Investment Management (Europe) Ltd. which is authorised and regulated by the Financial Conduct Authority United States: John Hancock Investment Management LLC, Manulife Investment Management (US) LLC, Manulife Investment Management Private Markets (US) LLC and Hancock Natural Resource Group, Inc. Vietnam: Manulife Investment Fund Management (Vietnam) Company Limited.