

Almond Trail



Expanding the trail to more sustainable almonds

To find out more about how you can support Almond Trail initiatives, contact: almondtrail@ofi.com

“

We aim to produce high-quality almonds with an optimal environmental footprint and build more collaborative partnerships to deliver sustainability impact at scale; creating more value from plant to palate.

”



Ashok Krishen,
CEO, ofi's nuts platform

Our almond locations



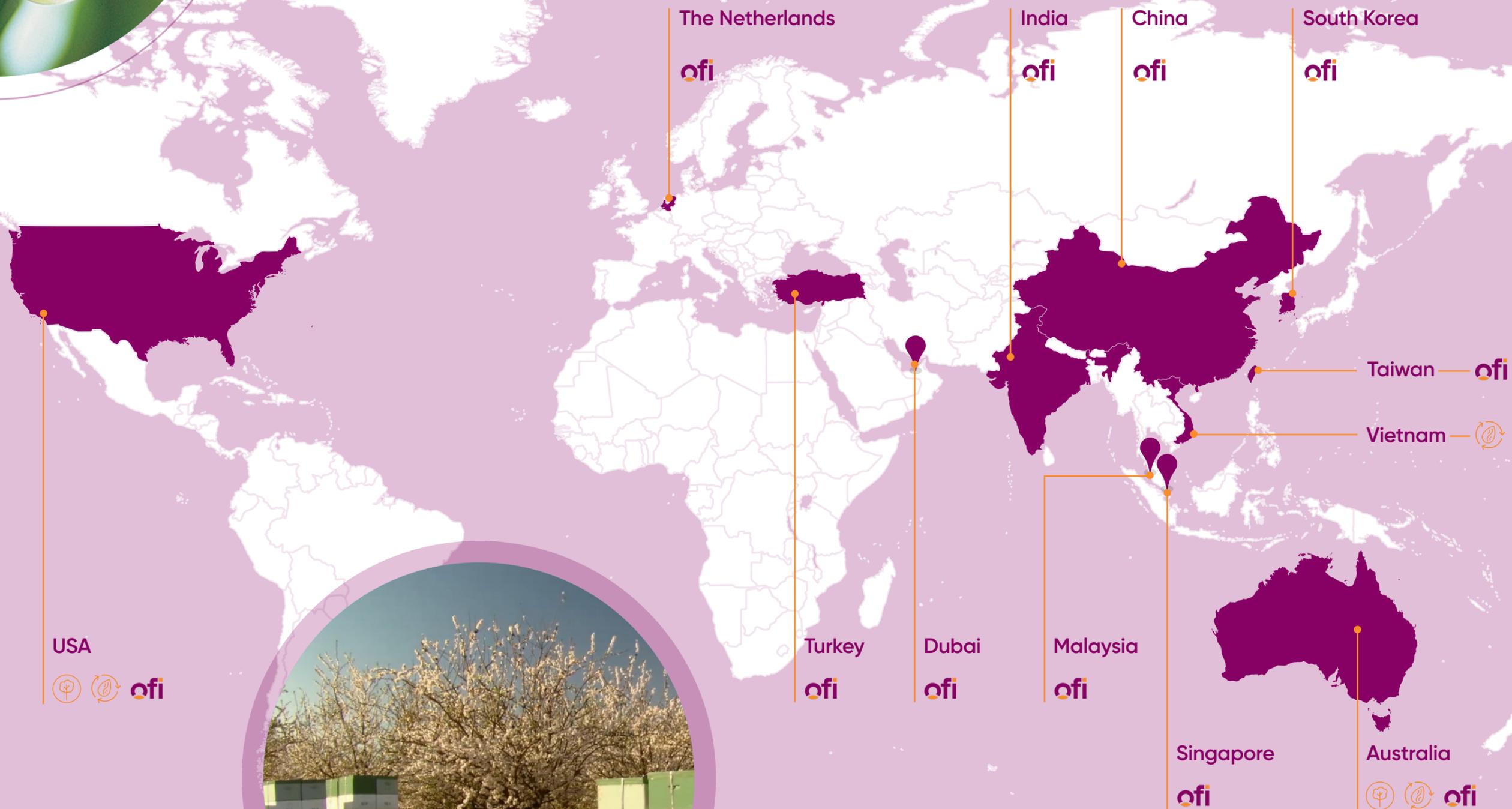
Sourcing origins



Processing facilities



Marketing offices



Our sustainability story to date



2014

ofi begins bee-friendly programs in orchards in the US and Australia



2015

The organic program begins at our Southern Star Ranch (California, USA)



2018

ofi becomes one of the first almond businesses to sign a large-scale renewable corporate power purchase agreement in Australia



2019

Whole orchard recycling begins in the US



2019

ofi signs a renewable long-term power purchase agreement in the US



AtSource

Three almond estates, from two origins, are added to AtSourcePlus

ofi's almonds over 20 years: Global milestones



2010

ofi becomes one of the leading almond growers in Australia after acquiring almond orchards from Timbercorp



2010

California operations begin as ofi acquires almond orchards in the US



2013

ofi builds an integrated processing facility, with both hulling and shelling capabilities, in Carwarp, Victoria, Australia



2015

Greenfield orchard expansion in New South Wales, Australia



2017

ofi opens a processing facility in Vietnam, with an in-house innovation center



2019

ofi acquires Hughson Nut, enabling processing capabilities of almonds in the US



2021

Processing plant opened in Melbourne, Victoria, Australia



2022

ofi signs an agreement with Australia's largest electricity provider to build a solar energy plant with a subsequent long term power purchase contract on their farms in New South Wales, Australia



2030 targets*



Water

100%

Implement soil and plant moisture monitoring in 100% of orchards to optimize water efficiency

90%+

Increase our irrigation distribution uniformity to 90%+ on all orchards**

75%

Remediate 75% wet/saline areas in our orchards



Climate Action

1.5°C

Reduce our absolute scope 1 and 2 GHG emissions by 2030 in line with the 1.5 degrees pathway

75%

Offset 75% of total energy demand by purchasing renewable energy

50%

Power 50% of mobile farm equipment with renewable energy



Healthy Ecosystems & Biodiversity

100%

Achieve Bee Friendly certification across all orchards

75%

Implement annual cover cropping in 75% of all orchards

40%

Protect and expand permanent pollinator habitats to 40% of orchard fallow areas



Strong & Thriving Communities

1,000

Champion agriculture as a fulfilling career by supporting 1,000 high school and university students in their research projects

100%

Ensure 100% of **ofi** employees in processing facilities and orchards have access to professional skills and development opportunities

100%

Train 100% of **ofi** employees in processing facilities and orchards on occupational health and safety

*These targets apply to **ofi** orchard volumes.
**Our baseline is 80% irrigation distribution uniformity.

Water

In 2020, we launched the "More Crop per Drop" trial, to better understand the behavior of almond trees under different conditions. Using innovative technologies to track everything from tree growth to soil health helps us to understand and reduce our water footprint.

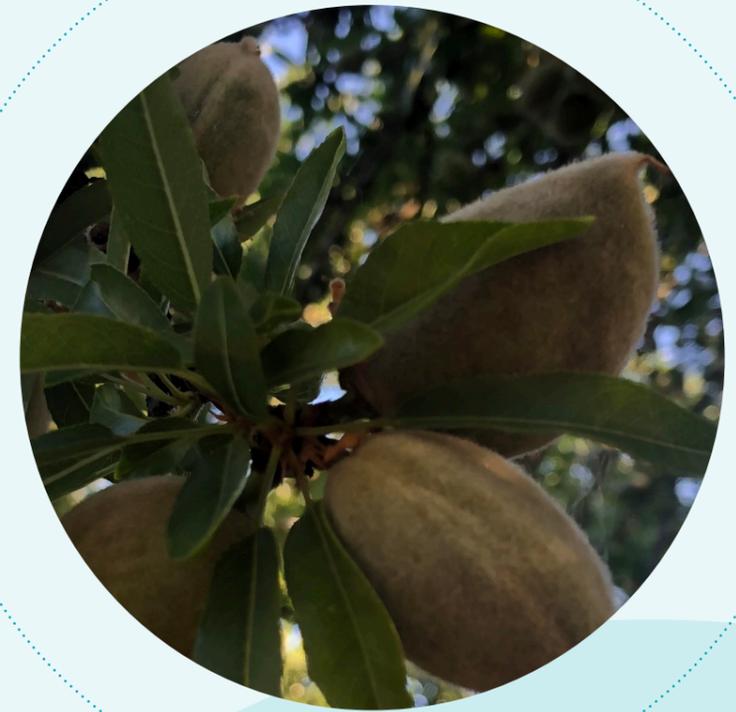
For many years, the Australian team has invested in infrastructure focused on water reduction. Now, the teams are using data and modeling to anticipate water needs of the trees, and have rolled out an irrigation decision support tool. Using technology like this is helping the team reduce their water footprint, which is conveyed to customers on the AtSource Plus dashboard. The dashboard shows water intensity per tonne of product.

Collaborating with partners like the California Water Action Collaborative (CWAC) can also offer supportive frameworks for water stewardship. Accessing their insight into the workings of the regulatory and natural environment allows us to learn how our water usage affects the communities and ecosystems around us.

Vision

Water is conserved across all **ofi** almond orchards, resulting in local landscapes and ecosystems being better protected from the negative effects of inefficient water use.

SDGs



Water

Our impact

In the past year in Australia, we have remediated wet areas in 10 orchards, this avoids drainage issues that can impact neighbouring trees and native vegetation.

2030 Targets

100%

Implement soil and plant moisture monitoring in 100% of orchards to optimize water efficiency

90%

Increase our irrigation distribution uniformity to 90%+ on all orchards*

75%

Remediate 75% wet/saline areas in our orchards

*Our baseline is 80% irrigation distribution uniformity.

R&D Projects



Remotely-sensed Evapotranspiration experiment

Partners: University of California, US Department of Agriculture, NASA

Project overview: Incorporate unmanned aircraft system (UAS) to measure water use and water stress in trees in almond orchards

Objective: Validate and refine almond tree toolkit to adequately represent almond architecture and radiation processes



Investigation efficient irrigation methods

Partners: Ag Metrics Group, Almond Board of California

Project overview: Assessing the impact of low-pressure high efficiency buried irrigation tubes on almond crops to conserve water and maximize yields

Objective: Evaluate physiological response to reduce irrigation, yield and quality on almond from subsurface drip irrigation, and determine performance of each irrigation methodology and the relative performance to the Grower's Standard Irrigation

80 million

On average, roughly 80 million gallons of surface water is recharged annually through conservation projects on **ofi** orchards.



Climate Action

Managed properly, almond production can be effective in capturing carbon. Our trees, which can last for about 25 seasons, have roots that keep carbon buried in the soil.

We've also been cutting emissions by making our operations more fuel-efficient through reducing shaking and sweeping engine hours.

Stepping up orchard carbon capture activities, processing efficiency and using the latest innovations in smart-farm technology is key to lowering our footprint – we produce more, by using less.

Vision

Carbon emissions are reduced by implementing climate-smart practices and improving resource-use efficiency.

SDGs



Water

Climate Action

Healthy Ecosystems & Biodiversity

Strong & Thriving Communities

Climate Action

Our impact

2030 Targets

1.5°C

Reduce our absolute scope 1 and 2 GHG emissions by 2030 in line with the 1.5 degrees pathway

75%

Offset 75% of total energy demand by purchasing renewable energy

50%

Power 50% of mobile farm equipment with renewable energy

15%

decrease in shaking engine hours, and an 11.9% decrease in sweeping engine hours from 2019 to 2020

50%+

of our orchards have solar arrays on the orchards and are utilizing those solar arrays to generate solar energy

R&D Projects

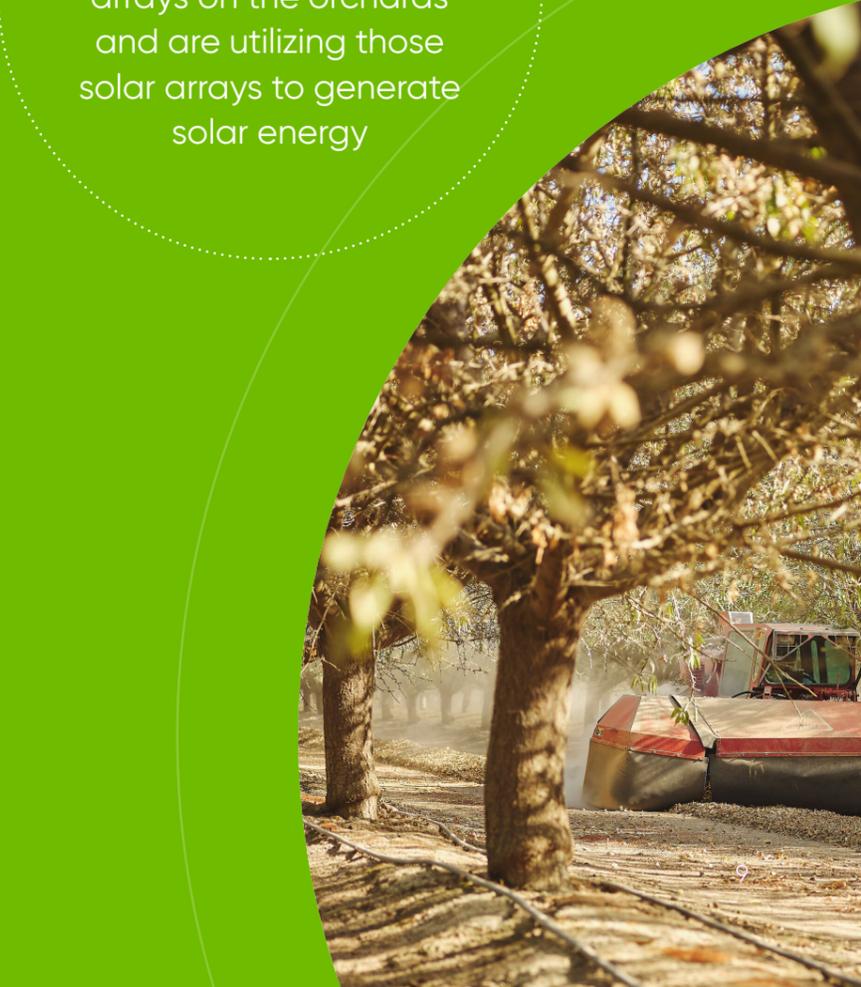


Evaluating almond hull byproducts to enhance the growth and yield of almonds

Partners: Pacific Ag Research & Almond Board of California

Project overview: Determine the feasibility and value of repurposed use of almond hulls and shells to enhance the growth of almond yields

Objective: Identify how using both liquid and dry product can help with water holding capacity, nutrient use and yield



Healthy Ecosystems & Biodiversity

As part of the food industry, we are responsible for protecting our crops and consumers' food from pests that cause disease and damage.

ofi relies on over 2.5 billion pollinators in Australia and the US to make sure our almond orchards produce year after year. Balancing pest control, while fostering bee-friendly communities is a challenge. We balance this risk through the controlled or non-use of certain chemicals to deter unwanted pests, while maintaining a limited impact on biodiversity, and championing bee-friendly farming techniques.

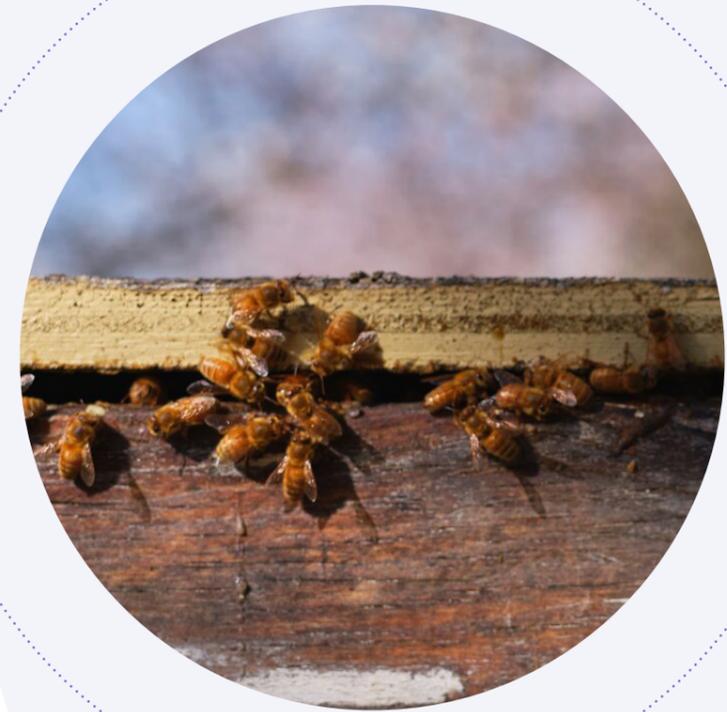
Creating environments that are welcoming to bees and other insects is key to safeguarding biodiversity and food production, especially considering bees are responsible

for one-third of all human food. We reference the Almond Board of California's Pollinator Partnership certification to make sure we use the most bee-friendly practices. For example, we use different bee foraging crops to provide optimum habitats in orchards, including flowering 'cover crops' that bees love such as phacelia, buckwheat, clover and alfalfa. We limit chemical application to night time or outside the pollination period. Additionally, we partner with universities to learn more about building conducive environments for bees, as well as work together on native bee pollinator orchard projects.

Vision

Ecosystems and biodiversity are protected. We provide more nutrients, carbon, beneficial insects and organic matter into the ecosystem, versus what we take during production and practice sustainable, cost-effective farming practices.

SDGs



Healthy Ecosystems & Biodiversity

Our impact

2030 Targets

100%

Achieve Bee-friendly certification across all orchards

75%

Implement annual cover cropping in 75% of all orchards

40%

Protect and expand permanent pollinator habitats to 40% of orchard fallow areas

R&D Projects



Transformative Fertilization

Partners: University of California Davis

Project overview: Using in-orchard artificial intelligence to optimize fertilization and water use, make smart data-driven decisions and maximize almond yield

Objective: Develop harvest machines capable of tree yield monitoring, identify new and improved methods to interpret plants, through soil sensors and remote imagery, implement robust and cost-effective field decision making

"We applaud **ofi**'s public recognition of the important role bees and other insects play in almond production, and the company's dedication to creating healthy ecosystems and improving diversity. The certification of 100% of its farms with the Bee Friendly Farming program would set a new standard for the almond industry, and other pollinator-reliant sectors across agriculture.

ofi has shown great leadership in its commitment to increasing pollinator habitats and foraging crops, and balancing the risks related to pest management with pollinator welfare front of mind, as part of its 2030 goals. The company's partnerships with universities, almond boards and other related organizations will ensure best-practice pollinator management techniques are employed across the supply chain."

Fiona Chambers, CEO of The When Bee Foundation



Fresh, cold-water sources are provided for bees to drink from and cool themselves while pollinating

Implemented Integrated Pest Management (IPM) and nutrient programs on all orchards

50%+

Bee-friendly crops grown in nearly 50% of orchards. To support bee health, we plant flowering 'cover crops' that bees love such as phacelia, buckwheat, clover and alfalfa between the rows of almond trees. These crops improve biodiversity in the agroecosystem, providing both a safe haven and an alternative food source for bees



Strong & Thriving Communities

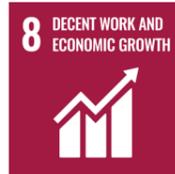
Farming communities are at the heart of our operations, which is why we are committed to making them prosperous places where people want to live and work. We do that by creating safe and decent jobs for people, providing internships and school programs to equip students with the skills and knowledge to start careers in agriculture, and supporting local charities and causes.

For example, we are exploring possible programs with the Almond Board of California that will educate students on various agricultural practices and provide them with valuable hands-on farm experience using next-generation technology at University of California Merced. These programs will promote a future career in agriculture. Findings from these programs will be shared with almond growers outside of **ofi** to equip them with the knowledge and expertise.

Vision

The communities in which we operate are equipped with skills to thrive economically and are resilient and strong.

SDGs



Water

Climate Action

Healthy Ecosystems & Biodiversity

Strong & Thriving Communities

Strong and Thriving Communities

Our impact

\$215K+

AUD donations made to local sporting events, arts festivals and education institutions

\$100K

AUD donated to Rural Aid's "HiveAid" campaign in 2020 after bush fires destroyed 10,000 beehives in Australia



ofi acts as a community partner and donates almonds to Mildura Chocolate Company - a branch of the Christie Centre - a not-for-profit disability support organization

2030 Targets

1,000

Champion agriculture as a fulfilling career for youth by supporting 1,000 high school and university students in their research projects

100%

Ensure 100% of ofi employees in processing facilities and orchards have access to professional skills and development opportunities

100%

Train 100% of ofi employees in processing facilities and orchards on occupational health and safety



Grow a better future with AtSource Plus

The AtSource Plus platform gives us, and our customers, valuable information identifying what we need to do for the people and environments where our almonds are grown.

How it works

- Covers value chains end-to-end from the farm through logistics and processing, to our customers' factory gates.
- Features ascending tiers with increasingly granular data and insights, which customers can select from based on their sustainability goals.
- Meets multiple customer needs, from environmental reporting and risk mitigation to transformational change.
- Provides valuable content to inform and steer AtSource customer's sustainability journey, from new entrants to mature leaders.

“

It is wonderful to see a major producer such as **ofi** developing these serious initiatives to further the sustainability goals of the Californian Almond industry. Given the challenges of climate change and resource constraints faced by California, these are timely and important initiatives and a model for the industry.”

Patrick H. Brown,
Distinguished Professor of Plant Science,
University of California, Davis

Join us on the Almond Trail

If what you've read inspires you to be the change with us, we've identified three ways to **create greater impact together**:

Three ways to engage

- 1** As a strategic or implementation partner, by providing personal time, technical expertise or resources for new and exciting initiatives on the ground.
- 2** Through customized programs tailored to your sustainability ambitions using AtSource Plus, ofi's sustainability insights platform to monitor and drive change.
- 3** By directly contributing to existing or new initiatives via premiums or a one-off payment.



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Q&A

with Ashok Krishen, CEO, **ofi**'s nuts platform



The almond is loved around the world for its flavor, nutritional value, and versatility as both a snack and an ingredient. Nutrient dense in protein, fiber and vitamins, almonds continue to be a healthy snack choice. And with the shift towards plant-based diets, there are new opportunities for almond ingredients to be included in a range of recipes, from gluten-free cakes and cereal bars to protein powders and seasonings.

While choosing almonds for their satisfying crunch and reputation for having a 'health-halo,' consumers want to know that their trail mix or protein bar carries a positive story about the people and environment they came from.

Q. Tell us about **ofi**'s almond supply chain?

ofi is one of the world's largest almond growers with orchards in Australia and California, supplying enough almond flour to bake 350 million cupcakes annually. We incorporate high levels of mechanization and the latest agronomy practices with the aim of producing excellent yields of quality, flavorful almonds with a positive environmental impact.

Q. What are the main sustainability challenges facing the almond supply chain?

Like all foods, almonds need water to grow. Almonds can only grow in a handful of places with ideal climate and growing conditions – including Australia and California, where **ofi**'s own orchards are located. But rising global temperatures are making these growing regions increasingly prone to drought. **ofi** recognizes the importance of using water as efficiently as

possible so as not to waste a drop. We strive to produce more while using less, by implementing or investing in sustainable practices such as state-of-the-art irrigation systems and creating pollinator habitats with bee-friendly plants. As partners of the Almond Boards of both Australia and California, we actively seek to participate in industry-leading sustainability initiatives and best practices.

Q&A

Q. As one of the world's largest almond growers, what are your commitments for 2030?

Almond Trail launches **ofi's** first publicly stated almond goals, building on our existing efforts to deliver value and positive impact with more creative, collaborative and sustainable ways of supplying our ingredients. **ofi's** goals include a commitment to reach and exceed the industry standard in water efficiency by 2030 and reduce our scope 1 and 2 GHG emissions in line with the 1.5 degrees pathway.

To achieve these goals, we need a vast amount of data to monitor our supply chain, tailor interventions and measure our progress. We'll manage this data through AtSource Plus, **ofi's** sustainability insights platform, by tracking 100+ social and environmental metrics from the orchards through the supply chain. The AtSource Plus platform offers customers a new level of transparency with the ability to see their unique footprint of each ingredient and use the data to support their own sustainability goals. And, with this knowledge, consumers can be confident that their almonds are not only good for them but are grown in a way that protects the earth.



ofi (olam food ingredients)

To find out more about how you can support Almond Trail initiatives, contact:

✉ almondtrail@ofi.com

🌐 www.linkedin.com/showcase/olam-edible-nuts/

📷 [@olamediblenuts](https://www.instagram.com/olamediblenuts)

Be the change
for **good food**
and a **healthy**
future

2030



ofi
make it real

