

2022 SUSTAINABILITY REPORT

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Sustainability at Verdure

Verdugration® and its counterpart, Verdure Cares® aim to bring meaningful messaging to foundational corporate initiatives.

Verdugration® encompasses sustainable, traceable, and transparent practices for the processes, plants, and planet. Verdure Cares® is a subset of the overarching program and focuses on sustainable relationships, partnerships and social impact. From employees, to farmers, cultivators, and harvesters, to distributors and customers, Verdure aims to forge long-lasting, mutually beneficial relationships.

At Verdure, we believe that sustainability represents doing what is beneficial for our people and planet; it is something that inherently requires validation, relevance, and impact. Sustainability is ingrained into our corporate culture and decision-making, and with this, we decided to ensure impactful alignment of our corporate values with the United Nations' Sustainable Development Goals (SDGs). Looking into the coming year, we continue to measure, define, and reflect upon the impact we impart with measurements against these united, global goals.



Verdure Sciences®

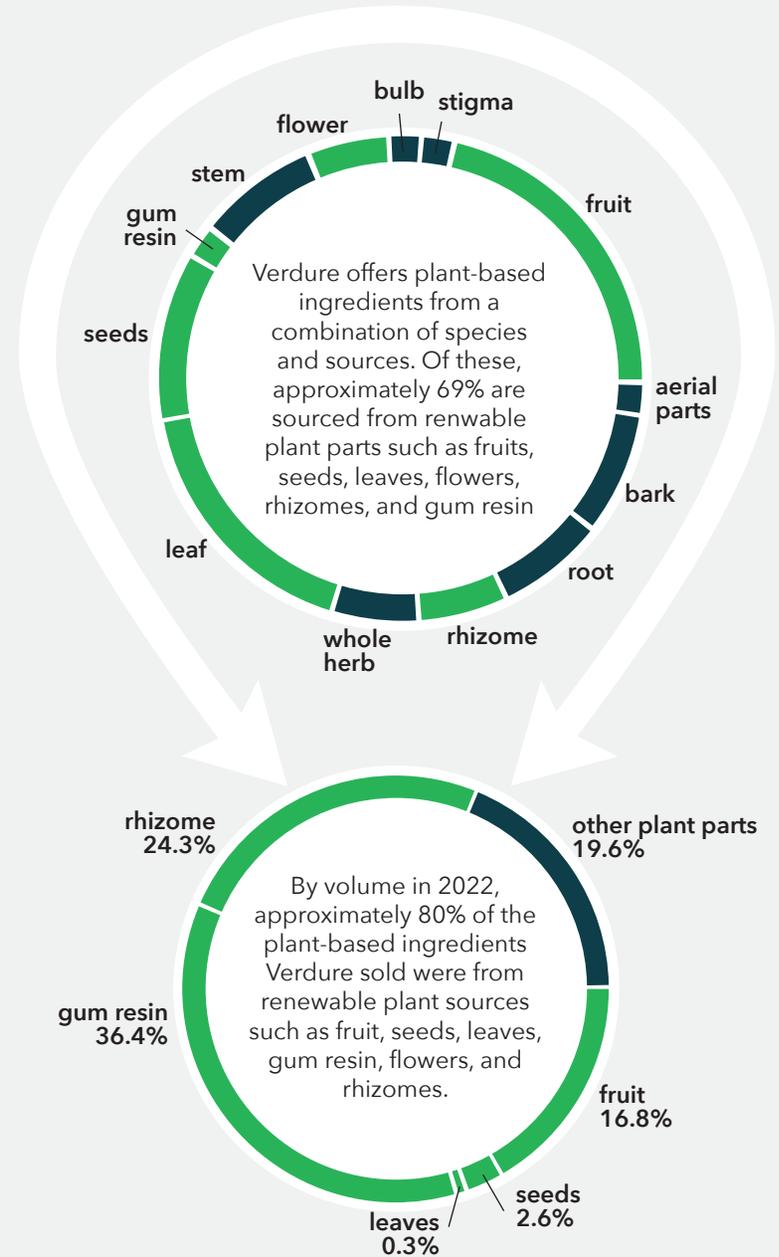


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Plant-based ingredients by the numbers

Verdure offers botanical and plant-based ingredients globally. Of these species, a combination of extract sources are used to provide clean label ingredients to our customers with strict focus on botanical integrity. More than twenty are sourced from renewable plant resources such as fruits, seeds, leaves, flowers, rhizomes, and gum resin. This allows for us to focus on offering sustainable, traceable, and transparent ingredient solutions to the global marketplace.



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Global footprint

Long-standing partnerships

Verdure strives to maintain long-term relationships within the value chain of our raw materials for quality assurance, a high level of oversight, and consistency in the botanicals we source for our extracts. We utilize farmer relationships, inter-cropping, crop rotation, drip irrigation, organic inputs and wild crafted sources for various products in our portfolio.

INTERNATIONAL SCIENCE PARTNERS

- USA, India, Canada, Switzerland, Australia, Singapore, Ireland
- Work with various associations and conduct research via self-funding, federal funding, international funding, grants, etc
- Collaborative research





Botanical integrity

Botanical integrity

We are committed to delivering the high-quality ingredients. As a part of the commitment, we collaborate to strengthen our practices for integrity, transparency, traceability, and quality. Botanical Integrity requires multi-disciplinary approach that combines the various area of expertise in botanical examination, certification, phytochemical analysis and safety assessments. Transparency of scientific assessment in botanical integrity is a fundamental principle that Verdure abides by and seen through multitude of collaborative efforts including but not limited:

- American Herbal Products Association (AHPA) - support to develop Good Stewardship Harvesting practices documents for *Boswellia serrata*
- United Natural Products Alliance (UNPA)
- Sustainable Herbs Program (SHP)
- American Botanical Council (ABC)
- Alkemist Assured™ - consumer friendly COAs
- American Botanical Council Botanical Adulterants program (ABC AHP NCNPR Botanical Adulterants Prevention Program) - successful collaboration of the saffron bulletin
- Published method for pomegranate adulteration analysis
- Non-GMO Project
- National Animal Supplement Council (NASC) preferred supplier
- Detox Project - glyphosate residue free certification
- National Sanitation Foundation International (NSF) - NSF sport certification for manufacturing facility; updated GMP certifications underway
- Union for Ethical BioTrade-Rainforest Alliance (UEBT-RA) - ethical biodiversity & transparency certification underway

Our sustainability goals

Our goals

- Advocate for the environmental sustainability of our botanicals through assessments, compliance programs and key industry partnerships
- Advocate for the social sustainability of 'our people' involved in the botanical ingredient value chain through programs & initiatives
- Support trust & transparency through rigorous quality standards, clean label initiatives, third party accreditations and our compliance programs to promote health and wellbeing



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Key SDGs

Making our goals meaningful

In an effort to promote global wellbeing, we chose to begin our alignment initiatives and detailed assessments with select United Nations' Sustainable Development Goals (UN SDGs) that highlight both our goals and top global risk categories, such as climate change and biodiversity. In particular, we focused on SDG #3: good health and wellbeing, SDG #13: climate action, and SDG #15: life on land; however, we have made strides to also encompass efforts that reach far beyond these three primary goals, including, but not limited to, touch points on #4: quality education, #5: gender equality, #6 clean water and sanitation, #7 affordable and clean energy, #8 decent work and economic growth, #9 industry innovation and infrastructure, #12 responsible consumption and production, and #17 partnerships for the goals. In 2022, we added a fourth focus – #9: industry, innovation and infrastructure.



sustainable partnerships; clinically supported ingredients offering efficacious benefits for the global community



learning opportunities through agronomists, regenerative agricultural practices, intercropping, soil nutrient maintenance, etc



HQ, manufacturing, and at the farm level we employ predominantly women



providing clean water resources for communities in which we operate



utilizing renewable resources promoting whole-plant usage; expansion to support the surrounding community



sustained economic growth with long-lasting partnerships for mutually beneficial sustainability, traceability, growth, transparency, and profit



sustainable, resilient & innovative efforts to mitigate adulteration, promote clean label initiatives, and support innovation through partnerships



sustainable production and consumption patterns throughout our value chain



energy, water, and waste conservation at Verdure and our exclusive manufacturing partners; tracking and mitigation of carbon emissions



protection and promotion of natural habitats to encourage flourishing communities of native flora and fauna



working with key stakeholders and customers to ensure mutually aligned efforts in promoting sustainable practices and policies



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UN SDGs: The goals

SDG#3: GOOD HEALTH AND WELLBEING
Ensure healthy lives and promote wellbeing for all at all ages

SDG#13: CLIMATE ACTION
Take action to combat climate change and its impacts

SDG#15: LIFE ON LAND
Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and combat reverse land degradation and halt biodiversity loss

NEW INITIATIVE - UN SDGs: The goals

SDG#9: INDUSTRY, INNOVATION AND INFRASTRUCTURE
Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation



How Verdure aligned with the UN SDGs:

Verdure Sciences® implemented a sustainability assessment and compliance program with key manufacturing partners to advocate for the sustainability of our plants, people and planet. Verdure has a collaborative, open-ended attitude toward advocating for our suppliers to operate sustainably. Our goal has, and continues to be, one that enact meaningful change by sharing knowledge and resources with a value-added approach. In 2021, we aimed to include three goals. In 2022, we worked to add another initiative, SDG #9 industry, innovation and infrastructure.

SDG progress to date



SDG#3: GOOD HEALTH AND WELLBEING

We are aware that organizations located outside the US often operate under a different set of circumstances and regulatory requirements. Alignment through our qualification process has helped ensure we are working toward a unified goal. We have heavily focused our efforts on clean label ingredients known to be at risk for those involved, as well as those ingredients in which have the greatest demand from our customers; in particular, turmeric, bacopa, and boswellia.



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founder, Ajay Patel, in polyhouse

SDG#9: INDUSTRY, INNOVATION AND INFRASTRUCTURE

Through backend integration and risk assessments, we have identified and invested in alternative farming techniques, innovative solutions, and regenerative practices. Through the Sustainable Procurement Program, we have invested in helping farmers switch to bacopa cultivation, which has helped to increase incomes three fold. Further, through this initiative, we have implemented polyhouse technology which has improved drying time by 50% in contrast to sun drying. This technology also helps mitigate fungus, mycotoxins, and insect infestations thus improving the impurity profiles of our bacopa extracts.



SDG#13: CLIMATE ACTION

Verdure has diligently aimed to minimize carbon emissions through resource conservation, sustainable supply chains and packaging initiatives. We have aligned with our manufacturing partner facilities to reuse byproducts following extraction & utilize materials that would otherwise be waste. Further, we began implementation of sustainable packaging materials, cognizant of the end-of-life disposal and recycling infrastructure available for our stakeholders. Verdure focused on energy, water, and waste conservation, all of which contribute to the overarching goals for sustainable, climate friendly practices through lowered carbon emissions.



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Carbon emissions

Verdure strives to minimize carbon emissions through resource conservation, sustainable supply chains and packaging initiatives. We have evaluated our greenhouse gas emissions from logistics, headquarters, and operations.

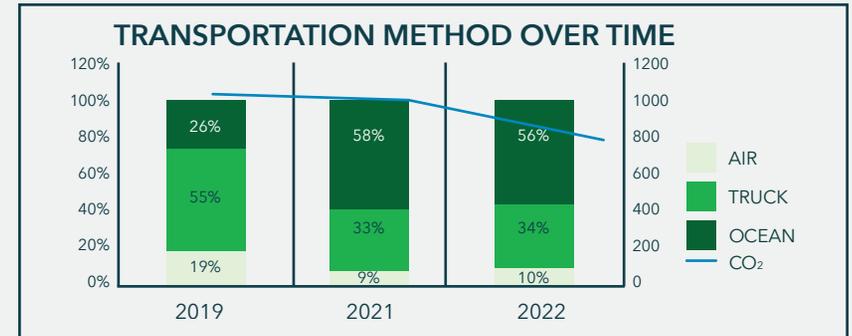
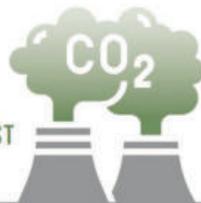
Additionally, we have aligned with our manufacturing partner facilities to reuse byproducts following extraction. This process utilizes materials that would otherwise be waste (i.e. plant parts not used in our extracts) as a source of natural compost at the farm level, helping to use resources throughout the value chain, and for clean, renewable energy at the manufacturing plant.

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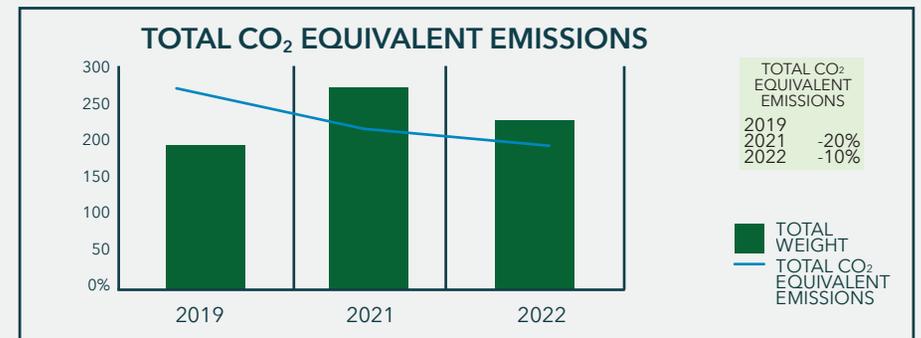
ENERGY-RELATED
CO₂ EMISSIONS
INCREASED

6% IN 2021

REACHING HIGHEST
LEVEL EVER¹



Verdure Sciences' transportation strategy and commitment to the environment from 2019-2022 helped to reduce air shipments and increase more carbon-friendly alternatives: truck and ocean. Above: a mix of kilograms (kg) shipped by transportation method, which allowed for analysis and efficiencies & optimization.



According to the UN SDG 2022 Report, CO₂ emissions increased 6% in 2021 and 0.9% in 2022.¹ With our sustainable supply chain plan, we reduced our emissions by 20% for the same period and 10% in 2022. Better planning, production, strict transportation schedules, and inventory management were all a part of this sustainable supply chain plan.

¹ - <https://www.iea.org/reports/co2-emissions-in-2022>



Sustainable logistics practices

As a global ingredient supplier, we must take into account global regulations for storing and transporting. Thus, we focused on analyzing our packaging materials and finding a sustainable alternative, cognizant of the end-of-life disposal and recycling infrastructure available for our stakeholders.

Verdure primarily focuses on initiatives to consolidate shipments and pre-planning to utilize ocean, instead of air shipments when possible.

Our ingredient raw materials are procured in bulk during their appropriate harvest seasons, stored in GMP certified facilities, and used throughout the year to ensure supply, quick turnaround, and consistent clean label offerings. We pre-plan and forecast sourcing activities to avoid frequent shipments with the objective of reducing our carbon footprint. This allows Verdure to utilize ocean shipments (i.e. fewer carbon emissions compared to air shipments) as they're more environmentally friendly and decrease freight costs; these cost savings are shared directly with our customers.



SDG#15: LIFE ON LAND

Where possible, Verdure Sciences® seeks to protect natural habitats through land remediation and rehabilitation, habitat protection and restoration, and biodiversity protection. Beyond supporting conservation of the habitats associated with our plant-based ingredients, we have secured and maintained a natural wetland at headquarters and additional acreage in Southern Indiana. These areas are home to a growing population of killdeer (native birds), red-winged black birds, gray tree frogs, half a million honey bees, deer, coyote, beaver, and non-invasive pollinators and plant protecting insects.



Sustainable procurement program



Sustainable procurement program

In cooperation with our manufacturing partners, Verdure Sciences® has established the Sustainable Procurement Program (SPP) to define and structure the plans for farmers to secure reliable, premium sources of income and resources while maintaining the sustainability of botanicals, local ecology and the people who grow & harvest the plants used in our proprietary ingredients.

The Sustainable Procurement Program (SPP) is an internal program first initiated in 2017 with the launch of the Sustainable Turmeric Program (STP) in the Southern region of India. Through Verdugration® and Verdure Cares®, we designed this initiative to encompass the sustainability of our people, plants, and planet allowing us to bring meaningful messaging to pillars of our mission.

Case study: *Curcuma longa* & the sustainable turmeric program

6x

We provided two boilers to boil the turmeric rhizome, which optimizes post-harvest efficiency 6 fold and, in turn, saves the farmers in post-harvest processing costs.

24

Farmers are paid directly into their bank accounts within 24 hours of purchase.

78%

Since 2019, we have retained an average of 78% of our farmer-relationships within the Sustainable Turmeric Program.



310 farmers



640 acres



640 metric tons (MT) of starting turmeric rhizome provided to farmers



qualification of farmers along with seed selection for purity, quality assurance/control, and mutually beneficial buy-back assurances; long-standing partnerships with farmers allows Verdure to provide seed rhizomes for maximum yield, quality, and purity, as well as increased revenues for farmers without cost entrance barriers each season



with aim to support long-standing partnerships, improve yields, maintain sustainable initiatives, and ensure quality and purity throughout the value chain, farmers are supported with training and meetings, soil is tested and prepared, regenerative agricultural practices are implemented with the support of on-site agronomists, and efforts are made to improve processing after harvest



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Case study: *Bacopa monnieri*

KEY TAKEAWAYS

- Continued to foster relationships with family farms to cultivate bacopa in Western India
- Clean supply chain and final product with controlled drying and collection techniques
- Consistent, reliable income stream to the families
- Supported large investment in post harvesting infrastructure (polyhouses)
- Conversion to organic certificated initiated in 2022 with anticipated completion in 2025
- New storage under construction
- Training on Good Agricultural Practices by National Medicinal Plant Board

50%

Implementation of polyhouse technology has improved drying time by 50% in contrast to sun drying. It also helps mitigate fungus, mycotoxins, & insect infestations thus improving the impurity profile.

3x

Farmers income increased 3 fold after switching to bacopa cultivation.



15 farmers



24 acres



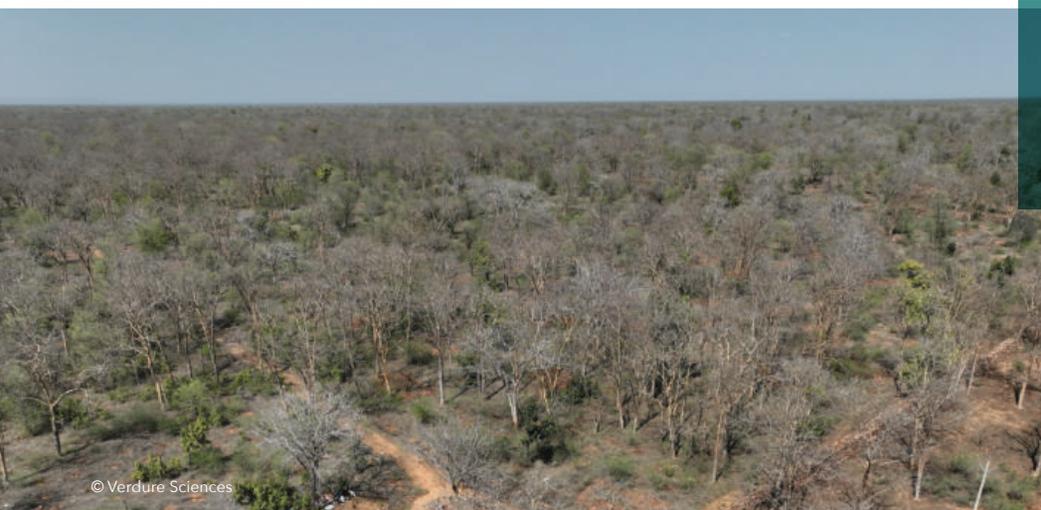
40 households impacted



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Case study: *Boswellia serrata*

KEY TAKEAWAYS

- Collaboration with long-term manufacturing partner in India, local government, forest officers, and tribal communities to plant 30,000 *Boswellia serrata* saplings across 25 hectares; approximately 7,000 surviving trees planted in this ongoing effort
- Protect & regenerate these sacred boswellia trees and support the tribal families who depend on them to earn a living for generations to come
- Preventative measures to maintain the trees via reforestation efforts after learning that the forests don't have sufficient materials to maintain increasing consumer demand



1200 families from 2 villages impacted



7000 surviving saplings donated
goal: ensure ecological balance in region is maintained while promoting survival of trees

Verdure Cares®



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left: headquarters, noblesville, in, usa
right: verdure team at holiday event, conner prairie, fishers, in, usa

Verdure Cares®

Verdure Cares® aims to encompass more than employee benefits, extending to corporate philanthropic efforts and community impact for a holistic approach. At Verdure Sciences®, we know that corporate responsibility and social impact extend to all aspects of the business, which is why we have initiated Verdure Cares®. This internal program is a division of Verdugration® that aims to broaden the scope of our stewardship efforts to encompass social and economic wellbeing of our internal and external stakeholders. This extends to initiatives supporting farmers, employees, corporate philanthropic efforts, and sustainable partnerships for a long-lasting, holistic approach.

Internally, we offer perks to employees such as a wellness package, comprehensive benefit package, fresh produce and honey from the garden, and weekly yoga classes, as well as this includes semi-annual social and ethical awareness trainings.



verdure
cares

Support for local philanthropic associations and events

Giving back to our community and those in which we operate is a core value. Verdure Sciences® awards organizations whose philanthropic initiatives are aligned with our own.

During 2022, Verdure continued to support the local community in Indiana by providing financial resources and supplies.

- Contributions for the Boys and Girls Club
- Support for autism awareness and children's health through Damar Services of Indiana
- Donation to Opportunity International to empower individuals, mainly women, to become economically self-sufficient and thriving entrepreneurs
- Donation to Indiana India Business Council
- Support local performing arts & arts organizations through activities and donations
- Local monetary and IT donations to schools (iPads, notebooks, etc donated to schools)
- Donation for local water conservation
- Conner Prairie: Living History Museum (a Smithsonian Affiliate) donations for employee wellness and historical botanical gardens
- Donation to Noblesville High School Robotics Club to encourage learning and excellence
- Donation of nearly 75lbs of fresh produce from the Verdure garden to the Hamilton County Food Banks
- Donation of tradeshow and booth materials to EnPointe Indiana Ballet and Noblesville High School theatrics for upcycled stage decor

Please visit our website for a more comprehensive list of the philanthropic organizations that we have, and continue to, support.



right: employees donating at boys & girls club of noblesville
left: (top: tomatoes from garden, left (bottom): employee garden at headquarters, noblesville, in, usa

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