

Sustainability

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Sustainability

In order to protect its greatest assets (people, farms and the environment), Dole has built its sustainability strategy on four pillars: water management, carbon footprint, soil conservation and packaging.



Water management, which includes using water responsibly and efficiently, as well as protecting the world's limited freshwater supply, is a matter that requires immediate attention. Knowing water's importance across every facet of life, Dole has implemented industry leading programs that teach water recycling methods and processes to reduce overall usage.



The world's growing carbon footprint is also a crucial issue of the twenty-first century. Dole works actively to measure, reduce and eventually offset a portion of its greenhouse gas emissions, which in turn, will diminish its contribution to global warming.



Healthy soils are a necessary ingredient for growing healthy products; however, soil constantly faces risk from degradation by erosion, salinity, contamination and other results of mismanagement. Dole has long been active in protecting soils through alternative practices that aim to prevent and limit soil erosion.



Environmental externalities don't stop at the end of a production line, and neither do Dole's actions. Dole offers foods that are responsible from early stages of growth, to final preparations so goods are ready for purchase. The Company's efforts concentrate not only on the amount of packaging used in marketing and selling products to consumers, but also on all materials employed in the supply chain.

Years of continuous research at Dole provide the Company with a competitive advantage in these four pillars of sustainability.

Dole Food Company, Inc. employs more than 50 scientists in five research centers throughout Latin America, the Philippines and the United States. These scientists specialize in fields such as general agronomy, irrigation, nematology, plant pathology, physiology, horticulture/plant propagation and spray technology, as well as post-harvest physiology.

Dole's scope of research covers many areas including, but not limited to, disease, nematode and insect control, substitutes for nematicides and insecticides, cultivation techniques, new irrigation systems and waste disposal.



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Water Management

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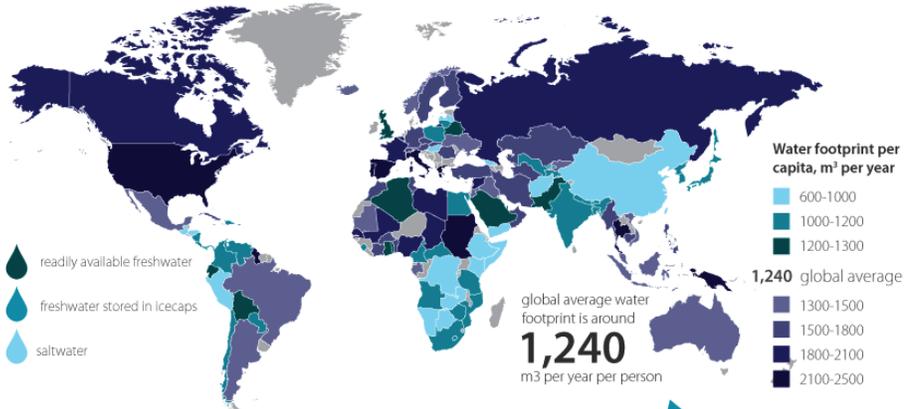
Background Information

Protecting current groundwater reserves is particularly important since 75% of water used worldwide is for agriculture, yet two-thirds of that 75% is lost through evaporation or inefficient irrigation systems.

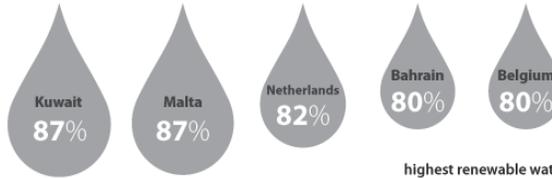
Some areas of Dole’s operations, such as Costa Rica, are fortunate to have an abundance of water available, while others, such as parts of California or Peru, face a scarce supply. This is why Dole’s water management programs are tailor-made to the conditions of each area.

The 'water footprint' of a country is defined as the volume of water needed for the production of goods and services consumed by the inhabitants of the country.

amount of freshwater available

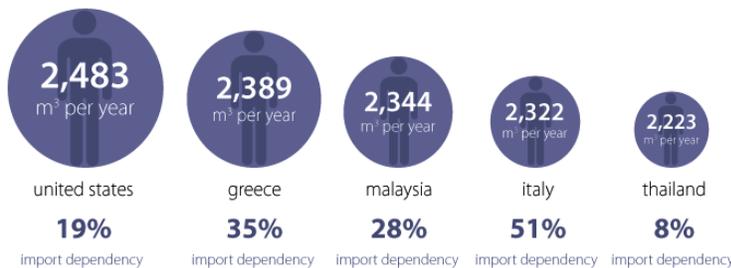


countries most dependent on water imports

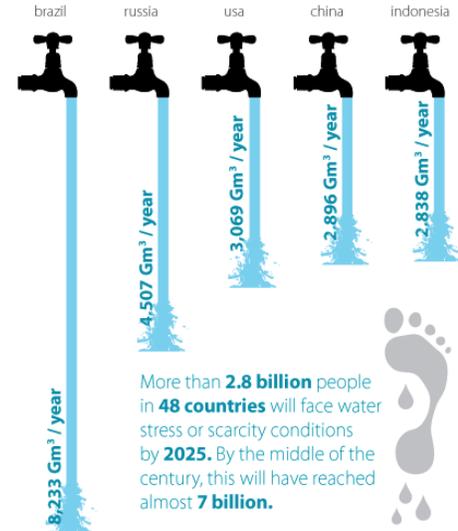


70%
of existing freshwater is withdrawn for irrigation in agriculture

the highest water footprints per capita



highest renewable water resources



water footprint of different foods



Source: Water Footprint Network – www.waterfootprint.org

Water Use in Dole’s Agricultural Practices

Because water is one of nature's most valuable resources, Dole strives to manage it with optimum care, efficiency and respect. The Company's Management Systems are certified to ISO 14001 and also include water reduction goals.

Similarly, our research department is constantly exploring new agricultural techniques and processes that use less water. As a starting point, Dole implements Good Agricultural Practices (GAP) – guidelines for optimizing crop yields, while protecting the environment. For example, GAP's recommendations for maximum water absorption include monitoring root health on a regular basis and improving soil structure through minimum soil compaction and tillage. Our research department also actively tests and implements more precise irrigation systems.

Measurement

For more information regarding water management throughout Dole's production processes, please read our [Water Assessment](#).

Defining the Need for Irrigation

The purpose of irrigation is to supply adequate amount of water when rainfall is not sufficient or timely to meet the crops' water needs. Since the 1980s, one of Dole's priorities has been to develop a more scientific approach to better schedule the irrigation of bananas and to apply water only when and where necessary as a way to compensate for water deficiencies in the soil.

In order to assess the need for irrigation, several factors must be considered:

1. Weather conditions such as rain, humidity, evaporation
2. Weather forecasts
3. Crop capacity for water absorption
4. Water available in the soil
5. "Allowable" water deficit for issues such as crop resistance

When new farming areas are in need of irrigation, the first step is to obtain information and guidelines for the production zone and begin planning based on its specific conditions.

Dole uses high-technology devices to measure water balance and soil moisture, which is now monitored at least once per week. This methods allows the Company to avoid under- or over-irrigation, ensure an even water distribution, conserve energy, reduce chemical leaks and decrease fertilizer usage in the irrigation system as a way to minimize negative impacts on the environment.

For some crops, proper irrigation planning contributed to a reduction in volume of water irrigated by 20-25%.

Many other methods exist to help minimize irrigation. For example, Dole's California berry division is testing drip irrigation using multiple drip tapes in each bed. Uniformly distributing water helps reduce overall water consumption as compared to the standard practice of using a single drip tape.

For salad production in California, Dole pre-irrigates lettuce fields with the water used in the processing of packaged salads. In the Dole Packaged Foods divisions of the Philippines and Thailand, treated waste-water is used for field irrigation.

In addition, Dole constructs reservoirs that capture rainwater for irrigation and reduce the need to use deep well water.

Dole's Technical Assistance programs for independent banana and pineapple growers worldwide have been integrated into Dole's ISO 14001 certifications.

Water Recycling Programs for Banana Packing

In banana production, water is extensively used during the packing process. In order to optimize water consumption, Dole has developed several types of water recycling systems for implementation in the packing houses.

Water has three main purposes in the banana packing process:

1. As a cleaning agent to remove debris and insects.
2. As a holding and carrying agent while bananas await cluster formation and selection.
3. As a latex removal agent.

The traditional packing process requires up to 150 liters (39.63 gallons) of water to pack a single banana box (18.14 kilograms or 40 pounds). Water is used to fill two pools, one for de-handing and one for latex removal, and is constantly flowing for proper utilization.

In the early nineties, Dole developed a partial recirculation system that used sand and gravel filters as a way to reduce water usage to 100 liters (26.42 gallons) per banana box.

At the same time, Dole introduced some remote areas of the Philippines to the Mobile Banana Processor – a miniature version of a standard packing plant, but with a 97% reduction in water use compared to standard plants.

A few years later in Ecuador, Dole inaugurated full water-recycling systems that re-used and re-circulated the water in packing facilities. These systems have been shown to save energy, protect aquifers, chlorinate water for fruit processing and help eliminate latex and metals. After reducing water usage to only 18 liters (4.76 gallons) per banana box, Dole installed over 120 full water-recycling systems throughout Ecuador. Within time, the systems were extended to the water-

scarce areas of Colombia and Honduras. Several have also been installed in areas of Costa Rica that cannot easily access or extract water from wells.

As the Company's management systems drive continuous improvement and strive to do better for consumers and the environment, Dole in Costa Rica began a complete redesign of the packing process in early 2009. Based on a holistic analysis and support from the workers, Dole developed the "New Millennium Packing Plant." Rather than using water pools, this revolutionary system completes most activities directly in the banana fields, resulting in 90% less water usage and 50% less energy usage compared to traditional packing plants. Dole plans to adopt this new concept in some other banana production countries in which it operates.

The New Millennium Packing Plant was one of three initiatives, among 600 presented, to receive an "honorable mention" from the Scientific Committee of the World Water Week in Stockholm in September 2010.

For more information, read Dole's case study, ["The Dole New Millennium Packing System."](#)

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Water Use in Industrial Processes

Some Dole Fresh Vegetables salad factories employ flow ultrasonic sensors, which have reduced the amount of water used by up to 380,000 liters (100,385 gallons) per day.

Dole Packaged Foods' (DPF) canneries in the Philippines and Thailand use metering conveyor spraying on/off systems as a way to limit water usage. Continuously spraying fruit consumes 227 liters (60 gallons) per minute, but when the metering conveyor stops, automatic valves immediately block the water supply.

To further reduce water usage, the DPF canneries in both the Philippines and Thailand recycle condensate water from evaporators. Once collected, the condensate water is used for boiling fruit. In Thailand alone, this system allows the recycling of over 38,500 m³ (1,360,000 ft³) of water per year.

Water Quality

In order to protect water quality, Dole uses biodegradable cleaning products. In addition, natural barriers and plant covers are implemented to protect water bodies in canals. Surface water is routinely monitored (usually four times per year) for nitrates, phosphates, total suspended solids and pesticides.

Water Footprint Network

In 2009, Dole joined the [Water Footprint Network](#) (WFN), a multi-stakeholder initiative aimed at promoting sustainable, fair and efficient use of fresh water resources. As a global partner network, the WFN exchanges best practices for reducing water usage and also defines common methodologies to carry out Water Footprint assessments. In fact, Dole has used this methodology to carry out a [Water Assessment](#) for its bananas and pineapples produced in Costa Rica and Honduras.



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Carbon Footprint

The need to reduce the world's Carbon Footprint has become widespread knowledge, and, thankfully, many companies are already taking action to reduce their greenhouse gas (GHG) emissions. In the agricultural sector, a great deal of GHG comes from using agrochemicals, such as fertilizers, and fuel. Now that we know the source of such emissions, it is important that we develop new tools that reduce consumption of agrochemicals, utilize different forms of energy throughout the supply chain and, whenever possible, compensate part of the negative externalities.

Background Information

Greenhouse gases are those that absorb infrared radiation in the atmosphere, creating a "greenhouse effect" that contributes to Global Warming. In our activities, these gases are mainly carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), chlorofluorocarbons (CFC) and others.

Carbon dioxide (CO₂) is a naturally occurring gas that is also a by-product of burning fossil fuels or biomass land-use changes and other industrial processes. CO₂ is the reference gas against which other greenhouse gases are measured.

Nitrous oxide (N₂O) is a powerful greenhouse gas with a global warming potential of 296 times that of carbon dioxide. Major sources of nitrous oxide include soil cultivation practices, especially the use of commercial and organic fertilizers; fossil fuel combustion; nitric acid production and biomass burning.

Methane (CH₄) is a hydrocarbon and a greenhouse gas with a global warming potential most recently estimated at 23 times that of carbon dioxide. Methane is produced through anaerobic (without oxygen) decomposition of waste in landfills, animal digestion, decomposition of animal excretions, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Chlorofluorocarbons (CFC), hydrochlorofluorocarbons (HCFC) and hydrofluorocarbons (HFC) are mainly used for refrigeration, air conditioning, packaging, insulation, solvents and aerosol propellants. CFC gases are currently being replaced by other compounds, less toxic in terms of Global Warming Potential, including HCFC and, most importantly, HFC.

Source (extracts): US Environmental Protection Agency

Carbon Neutrality

The Government of Costa Rica made a commitment to attaining carbon neutrality by 2021. In August of 2007, Dole's division in Costa Rica joined this initiative and became one of the first 12 companies to actively support the local government in achieving this goal.

Since entering in the environmental agreement with Costa Rica, Dole has mapped and analyzed its activities in order to accurately locate the sources of its carbon emissions. Results enabled the Company to develop and implement innovative solutions that have reduced its Carbon Footprint for all products grown in Costa Rica, from Dole-owned farms to distribution centers.

Measurement

For more information regarding the Carbon Footprint of Dole bananas produced in Costa Rica and distributed in Germany, please read our [Carbon Footprint Assessment](#).

Reduction

Dole in Costa Rica has identified the causes of its Carbon Footprint and as a result, has worked to reduce its dependence on specific energy sources and practices. Some sustainable and responsible changes that Dole has implemented include:

- **Control Released Fertilizer Program (depending on conditions) and Precision Agriculture:** By analyzing smaller plots of land, the Company can accurately assess the specific fertilization needs for the soil. In doing so, we've introduced new Control Released Fertilizer product that has already reduced fertilizer quantity used by 12% and GHG emissions by 45% (including the production and application of fertilizers).
- **Driving Techniques Training:** In training employees on better driving techniques, Dole has reduced fuel consumption of its fleet by approximately 10%.
- **Railroad Transportation:** Approximately 40% of the bananas produced in Dole's farms are transported by train, which contributes to a 34% decrease in fuel consumption and

GHG emissions. Dole in Costa Rica is the only banana company using railroad transportation.

- Fuel Conservation: Among other initiatives, Dole has implemented fuel quotas and fuel consumption tracking systems on its heavy equipment vehicles as a way to continuously measure performance.
- Biodigesters: At Bananito farm, Dole also uses biodigesters that convert the mules' feces into gas that powers the workers' cafeteria.

These projects aim to identify, promote and implement new, environmentally-friendly practices across Dole's worldwide operations.

Initiatives in Container Yards and Vessels

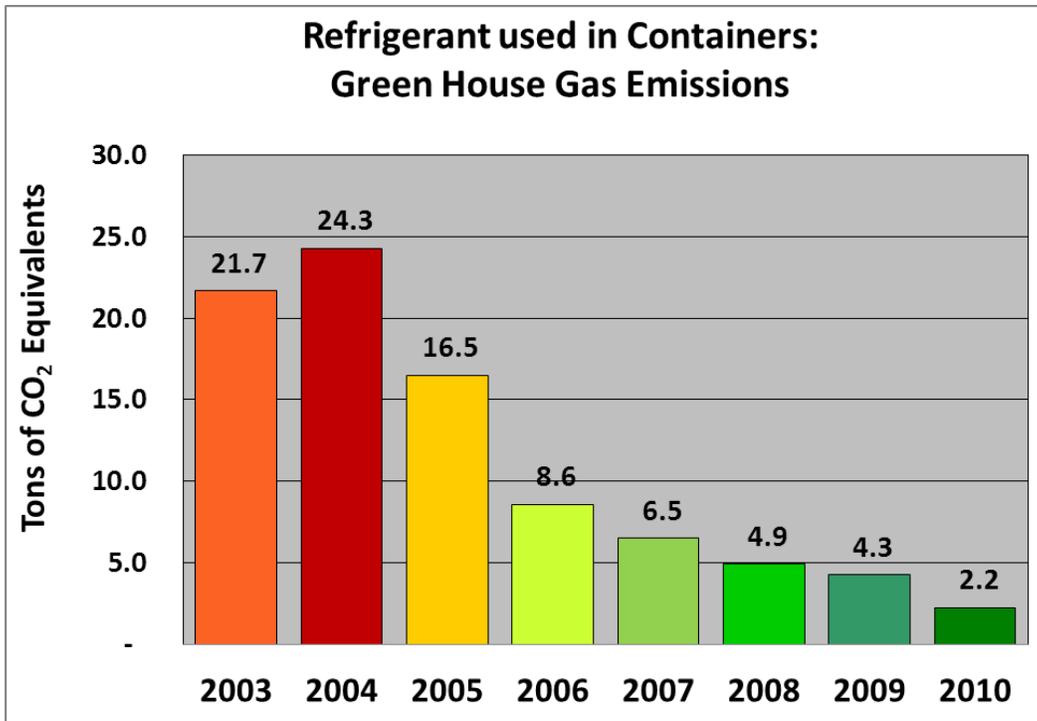
In the container yard, Dole reduced its use of fuel by 33% between 2007 and 2009. Results were achieved by:

- Revising and implementing control mechanisms (i.e. automatic "turn-off" devices) for container handling equipment.
- Establishing fuel quotas.
- Implementing reduction goals.
- Extending the use of vortex valves from 50 gensets to 150 in Costa Rica.
- Additional reductions will be achieved in the coming years through continued use of fuel monitoring gauges and GPS tracking systems in the genset equipment. This practice will measure precise fuel use, help avoid fuel misuse and should also facilitate route optimization.

In the container yard and container transportation, Dole reduced its greenhouse gas emissions by over 90% in five years due to:

- More effective preventative Maintenance and Repair programs.
- Replacement of refrigeration units for more modern equipment. Action began in 2005 when Dole eliminated CFCs from the container fleet. In late 2009, the Company launched a plan for eliminating HCFC refrigerants from container fleet – mission completed by May 2010, making Dole's container fleet 100% HFC. This change contributed to a decrease in carbon dioxide equivalents (CO₂e) emissions by 90% between 2004 and 2010 (For more information on CO₂e and Dole's Carbon Footprint, see "[Background Information](#)").
- Testing of newer units that feature superior insulation and compressor systems, for achieving even better results.

Measurement and certification of the CO₂e emissions of our vessels. There was a 2% reduction in footprint per kilo of fruit shipped from 2008 to 2009.



- In addition:
 - The hulls of Dole ships are painted with custom coatings designed to decrease friction and improve performance.
 - Dole is studying alternatives for “cold ironing.” This initiative is aimed at using electricity from land sources to turn the ships’ engines off as a way to diminish air pollution in populated areas, such as Southern California.

Initiatives at Dole Packaged Foods

Dole Packaged Foods’ (DPF) sustainable agricultural practices include the use of organic compost as fertilizers and the avoidance of burning harvested plants or trees as this process damages the air quality and releases GHG. Dolefil, the Philippines’ division of Dole Packaged Foods, actively supports the [Chairs-for-Trees Program](#), which has resulted in over 1,300,000 trees being planted.

To specifically reduce energy consumption in its manufacturing operations, DPF has implemented several programs including:

- Re-lamping the canneries to use energy-efficient lights and less power electricity.
- Insulating pipe lines and cookers to reduce energy loss in processing.
- Upgrading equipment and controls for more efficient freezer operations.

Through these programs, DPF saves approximately nine million kilowatt hours of electricity and approximately 130 thousand gallons of fuel oil each year. In fact, Dole’s Thailand factory was

recognized by the Ministry of Energy as the best operation in the industry, achieving 28% better than established target.

For DPF, energy conservation efforts extend beyond production, and are given special attention in the distribution chain, as well. Initiatives include:

- Contracting ocean carriers that use low-sulfur fuel and plug into electricity at port.
- Transporting containers via rail instead of road whenever possible (in 2009, DPF shipped 11.2 million miles over rail, which saved 750,000 gallons of fuel).
- Opening a new warehouse and packaging facility that reduces transportation of ingredients by more than one million miles per year.
- Using propane – a cleaner burning fuel than gasoline – for 60% of the tractors in Dole’s Atwater, CA operations.
- Utilizing durable CHEP pallets instead of one-way wooden pallets, which lowers energy consumption by approximately 19 billion British Thermal Units (BTU) annually (56% reduction) and cuts GHG emissions by more than three million pounds annually (58% reduction).

Initiatives at Dole Fresh Vegetables

Dole Fresh Vegetables (DFV) has also implemented several initiatives in its agricultural operations and manufacturing plants as a way to reduce energy consumption and GHG emissions. DFV’s agricultural operations have made the following changes:

- Use of biodiesel-powered harvesting equipment.
- Using GPS technology on tractors to reduce the number of tillage passes.
- Upgrading the harvesting and hauling equipment to reduce pollution.
- Applying new filter systems that reduce diesel emissions from farm vehicles.
- Replacing older cooling equipment with energy-efficient units.
- Optimizing cooling-tube cycle times for raw materials.
- Installing energy-efficient motors and lighting in coolers.
- Regionally sourcing products for the Eastern plants.
- Composting vegetable waste.
- Testing a solar-powered harvesting machine.

Actions taken in the manufacturing operations include:

- Evaluating alternative energy sources, such as wind and solar energy.
- Installing energy-efficient motors for the cooling systems.
- Using new, more energy-efficient lamps in the Soledad Value-Added plant. This contributed to a reduction of over 300,000 KWH (approximately 100 metric tons) of CO₂e per year.

Recently, DFV introduced freight optimization software that calculates the most efficient delivery route for trucks. This software alone has saved 3,500 road hours and US\$ 220,000 per year, which in turn, helps maintain the health of our environment.

Initiatives at Dole's Worldwide Headquarters

The Worldwide Headquarters in Westlake Village, California constantly works to decrease energy consumption. Some initiatives include:

- Use of energy efficient lamps in all offices.
- Implementation of room lighting occupancy sensors with timer shut-off.
- Changeover to Energy Star copiers with automatic sleep mode.
- Use of a 5-Star energy rating system for meeting air filtration standards.

These four adjustments contributed to a 9% reduction in energy usage and a 25% reduction in natural gas usage between 2005 and 2009.

Dole's headquarters also offer incentives to employees who participate in the commuter program. For those who carpool, walk, bike or use public transit from their home to Headquarters, the Company offers:

- Monthly financial rewards
- Meal vouchers
- Time off with pay
- Preferential parking
- Quarterly drawings
- Guaranteed ride home



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Soil Conservation

According to the [ISRIC – World Soil Information](#), 46% of agricultural soils have registered a substantial decrease in productivity. Maintaining healthy soils is essential for a thriving agricultural industry. Healthy produce depends upon healthy soil, or soil that is free of degradation from erosion, salinity, contamination, compaction and mismanagement. At Dole, we are dedicated to providing consumers around the world with the highest quality produce.

Soil Conservation in Dole’s Agricultural Practices

In order to offer consumers fruits and vegetables of the highest quality, Dole makes it a priority to maintain healthy soil in its farms. In fact, soil conservation is one of the “Four Pillars of Sustainability” that Dole emphasizes in business.

Dole’s soil conservation programs focus on:

- Preventing soil erosion
- Avoiding soil overuse and chemical alterations
- Ensuring a healthy and productive soil
- Reducing the depletion of soil nutrients
- Contributing to improved water availability

Before preparing soil for use, a soil management plan must be developed. Soil management at Dole includes extensive fertility analyses, landscape assessments, determination of soil classes for the specific crop and contour technique appraisal. By taking these steps, the Company maximizes the soil’s productivity and minimizes erosion through identifying soil conservation alternatives before each farm area is planted.

Specific programs implemented to protect soils include:

- Minimum tillage
- Crop rotation
- Cover crops
- Mulch with plastic or pasture
- Ditch stabilization
- Mechanical barriers
- Soil maps
- Top-soil thickness analyses
- Organic amendments

Minimum Tillage

This practice reduces the manipulation of soil by limiting turn-overs and structure breakdowns. Minimum tillage also limits working the soil with machinery, thus reducing erosion and soil compaction and increasing water intake. Another way that Dole reduces tilling and enhances soil health is through the use of “ratoon crops” in the pineapple production system. Ratoon crops are plants that provide a second harvest and develop up from the roots of the previous crop.

Crop Rotation

This practice consists of planting a series of dissimilar crops in the same area in sequential periods. It hinders the spreading of pests and diseases by breaking their regular biological cycle, thus reducing the need for pest control products. In banana cultivation, for example, the use of crop rotation has allowed us to reduce nematode populations and eliminate the need to employ nematicides in several growing regions.

Cover Crops



A cover crop is a plant that can be used to protect soil from erosion due to heavy rainfall and slopes in the terrain, control weeds and manage soil fertility. For example, soy and mucuna can enhance soil fertility by fixing nitrogen into the earth. Additionally, they can later be incorporated into the field (prior to planting the fruit crop) as a way to reduce the depletion of soil nutrients and the use of fertilizers. Cover crops can be grown as a monoculture or in combination with commercial crops, such as within the banana plantations.

Cover crops and crop rotation are usually used together, in order to optimize benefits. For example, due to the reduction of nematodes, some Dole banana farms in Honduras, replanted in 2003 and 2004, after 6 months of fallow (planted with cover crops), have not received any application of nematicides since then.

Additionally, during the first year after the fallow period, the use of other pests control products can be reduced up to 50%.

Additional Programs

Mulch with Plastic or Pasture

Using mulch with plastic or pasture between planting beds reduces erosion and the presence of pests and weeds. In turn, mulch contributes to a decreased need for pesticides.

Ditch Stabilization

Erosion can be greatly reduced by implementing practices that stabilizing drainage ditches. Through the years, Dole has found that using cover plants in the canals are the most effective way to reduce erosion, as well as protect or enhance the quality of the water draining from the farm.

Mechanical Barriers

Mechanical barriers are physical obstacles that can be installed into a farm's drainage system to decrease erosion. Bamboo stakes make for efficient mechanical barriers due to their ability to capture soil and reduce the speed of water running through ditches.

Soil Maps

Maps of the land's soil are created to help identify which areas are particularly vulnerable to erosion and assist in determining the planting structure for the farm. Knowing this information enables the Company to take appropriate preventative measures and issue soil conservation recommendations based on this data.

Soil conservation practices at Dole include: contour cultivation and planting, broad-base preservation terraces, tailored tilling according to the soil's characteristics, soil morphological analysis, detailed physical and chemical evaluations and lastly, returning soil trapped in barriers back into the fields.

Top-Soil Thickness Analyses

Dole analyzes the thickness of the top layers of soil at least twice a year. This data helps determine changes in soil structure and depth that can be used to adjust the Company's conservation practices and maximize their effectiveness.

Organic Amendments

An organic amendment is any material of plant or animal origin that can be added to the soil to improve its physical properties, including water retention, permeability, water infiltration, drainage, aeration and structure.

Dole uses organic amendments, such as compost and humic acids, to preserve top-soil and increase organic matter in the field. A greater amount of organic matter improves the soil structure, facilitates water and nutrient absorption, decreases erosion and overall enhances plant development.

Another way to preserve soils and increase organic matter content is to incorporate more plant material (crop residue) after harvesting the crops. This technique is exemplified by the biomass preservation practices that are now performed at all Dole and grower pineapple operations. Traditionally, pineapple plant residue was desiccated using an herbicide and then burned. For environmental purposes, this method has been replaced by manual and mechanical methods that incorporate the crop residue into the soil, thus increasing organic matter and soil carbon.

Not only do these programs limit soil erosion, but they also reduce the use of herbicides, fertilizers and other agrochemicals, while protecting valuable natural resources and groundwater.

In Costa Rica, Dole's soil conservation programs in pineapple production have lowered the soil erosion rate to less than 7 tons/hectare*/year – an erosion rate so low, that it is rare in any agricultural industry. In fact, on average Costa Rica's other agricultural activities face erosion rates of approximately 70 tons/hectare/year.

In order to share effective sustainability methods with the country's pineapple industry, the Costa Rican Chamber of Pineapple Producers and Exporters (CANAPEP) worked with Dole to organize and lead industry seminars on soil conservation. To date, Dole and CANAPEP have organized two industry seminars focusing on methods for preserving soil. In addition, Dole has undertaken six events of a similar nature for Dole's growers and the communities adjacent to the pineapple farms. An official CANAPEP Soil Conservation Manual, written by Dole experts, was distributed to all CANAPEP members for their immediate use in the fields. Pineapple operations in Honduras and Ecuador also received soil conservation seminars, as well as custom soil conservation manuals for their specific farms. Dole's soil scientists review these programs in both Company-owned farms and its independent producers.

Dole is constantly seeking technologies that improve its productivity and sustainability. In doing so, it's become one of the few companies to measure soil erosion levels in the fields. All findings are included in a farm-specific soil conservation manual that Dole developed and continues to update every three years.

* 1 hectare=100 acres

Packaging

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Packaging

Throughout the supply chain, Dole uses several forms of packaging and packing materials, some of which are made of plastics, carton, wood or steel. To achieve its goal of producing minimal waste, the Company avoids overusing materials, follows a “Reuse or Recycle” policy whenever possible and introduces more environmentally-friendly resources, such as those that are biodegradable, as they become available.

Plastic in Banana Production

Dole utilizes different types of plastic material throughout the banana production process.

Plastic is used in banana production for three major purposes:

1. As a field bag to protect banana stems from insects and mechanical damage, as well as enhance fruit development.
2. As a twine that props the banana plants to prevent them from tipping over.
3. As a sheath to avoid quality problems, particularly scarring, during finger growth.

Field bags represent the greatest use of plastic in the banana production process, so Dole makes it a point to reuse and recycle them. Twine is collected and immediately sent for recycling, while sheaths can be reused a few times first before getting recycled into new plastic items.

Costa Rica

All plastic used in both Dole-owned and independent growers’ farms in Costa Rica is collected for recycling by organizations, such as Recyplast.

Founded in 1994, Recyplast consists of approximately 100 employees who recycle banana bags and twine from Dole’s fields into plastic corner boards used to maintain pallets.

Recyclast turns to additional sources, such as domestic and other industries, to recycle their plastics. Some companies even use the twine plastic to produce roof shingles and pellets.

Altogether, Dole in Costa Rica recycles over 2,000 tons of plastic per year.

For more information, read Dole's case study, "[Rio Frio's Plastic Management for Sustainable Production](#)."

Ecuador

Dole in Ecuador (UBESA) recycles over 800 tons of plastic per year. Since 1992, it's facilitated the recycling process by actively building plastic collection centers in the South, Guayas and Los Rios zone.

Starting in 1994, plastic had to be packed at the collection centers and later transported by third parties to their respective recycling facilities. Today, most plastic is collected at the farms by recyclers' trucks – an act that was encouraged by increased prices for plastic in the marketplace. The Company provides employees with training sessions about how to classify and collect the different plastic for recycling.

Plastics from UBESA are turned into corner boards, which on average may contain up to 80% recycled plastic material.

Honduras

In Honduras, Dole recycles over 1,000 tons of linear low density, high density and polypropylene plastics each year. These materials are mainly used to make plastic rails that replace wooden rails on train tracks.

The project also features collection points at every compound where Dole employees and their families live. In exchange for setting these collection points, the current plastic buyer has considered donating academic materials to the local schools.

Similar programs are also in place at Stanfilco, Dole's banana operations in the Philippines.

Other Materials

The majority of Dole's products are packed in boxes and then transported on pallets. In most cases, these pallets are made from wood and continue to be reused and repaired in order to extend their life span. When they can no longer be maintained for further use, then the wooden pallets can be recycled, such as with Dolefil's [Chairs-for-Trees Program](#).

Alternatives to wooden pallets include using more durable CHEP pallets, which have been particularly beneficial for Dole Packaged Foods (DPF) and Dole Fresh Vegetables (DFV), or plastic pallets. Since introducing CHEP pallets in DPF, the division has decreased its solid waste by 3,000 tons per year – a 95% reduction.

Plastic pallets usually have a longer life span and can be easily recycled, but for the time being, they are only used for specific customers, for example in Japan.

In addition to using plastic pallets and as an alternative to cardboard, Dole packs bananas in reusable plastic crates, particularly for some of its customers throughout Asia.

The banana boxes are secured to pallets by plastic straps, which are either repaired or recycled into Added Value products by local residents. These community empowerment and plastic strap-recycling programs have been implemented by Stanfilco, Dole's banana operations in the Philippines, and the Kasilak Development Foundation Inc. Through such programs, the discarded plastic straps are turned over to 15 community-based organizations consisting mostly of women. Their creative skills transform basic plastic straps into such items as pots and bags, which they later sell for a profit.

To date, approximately 500 individuals have been involved in this handicraft business that benefits the entire community. For more information about this program, please refer to Dole's case study, "[Recycling Plastic Straps.](#)"

Similarly, DFV partners with its carton supplier to create an extensive recycling program for plants and field operations. DFV also reuses fiber bins and plastic containers for carrying raw materials.

In addition to returning steel drums for refurbishment and reuse, DPF recycles 100% of the by-product plastic materials, paper, corrugate, cans and can-ends in its Asian factories.

Initiatives at Dole Packaged Foods

DPF conserves approximately 60 tons of plastic each year by:

- Reducing plastic by 22% in cups and 9% in jars, with efforts under way for additional reductions.
- Using up to 35% more recycled/non-virgin plastic material.
- Exploring the use of new technologies to make polybag material biodegradable.

In addition, DPF conserves approximately 770 tons of paperboard each year by:

- Reducing paperboard in sleeves on plastic cup by 20%.
- Exchanging canned fruit and juice cases for those made of 100% recycled material.
- Employing 33% less paper to create the stickers used for foodservice items.
- Reengineering the case design for foodservice items to utilize approximately 20% less paperboard

Finally, DPF also conserves approximately two tons of commercial ink each year by:

- Reengineering the case design for cups to use 50% less ink.

- Eliminating the need for ink printing on the lid stock of cups and jars.

Initiatives at Dole Fresh Vegetables

DFV aims to condense its end-consumer packaging by:

- Cutting down on fiber board in cartons and bins.
- Reducing the thickness of clamshells, film and bags.

DFV also uses “greener packaging” such as:

- Up to 80% recycled Polyethylene terephthalate (PET), which features the number “1” recycling symbol for berry and value-added salad clamshells.
- Producing the berry PET packaging in plants powered 50% by solar energy. PET clamshells are commonly recycled after use by consumers.

Initiatives at Dole’s Worldwide Headquarters

Our Worldwide Headquarters in Westlake Village, California are at the vanguard of implementing initiatives that reduce packaging and waste.

These initiatives include:

- Using 192 cubic feet (5.44 cubic meters) of recyclable products per year, which ultimately saves 48 cubic feet (1.36 cubic meters) of landfill each year.
- Employing all biodegradable containers at the Dole cafeteria. These containers, made out of corn-based resin, are fully compostable and can decompose in 45-60 days in a recycling center.
- Recycling paper, metal, plastic, used batteries, cell phones, CFL lights, PCs, printers, toners and any other recyclable material both used in Dole’s offices or brought in by employees from their homes.