

REDUCING ENVIRONMENTAL IMPACTS

As a retailer, our environmental impact extends far beyond our own operations to the supply chains that deliver groceries, apparel, electronics and myriad other products to our shelves every day. For example, farming plays a major role in GHG emissions, water usage and deforestation.

As one of the world's largest retailers, we are working to reduce the environmental impacts all along the supply chain, from farming and manufacturing through consumption to end of life. We hope to create a more circular economy, moving away from a take-make-dispose approach to one where resources are preserved in production, and the biological residue and other component parts are ultimately cycled back into the economic stream. Working with suppliers, customers, nonprofit organizations and others, we're drawing on our strengths—such as our store and logistics infrastructure, our philanthropy and our connection to customers—to pursue practical initiatives that we hope will start to build a more circular economy.

Our strategies include:



Enhancing the environmental sustainability of key agricultural commodities



Working with our suppliers to improve efficiency of factories



Getting to zero net deforestation



Reducing food and product waste upstream and downstream



Suppliers report
committing
76 million acres
to fertilizer optimization

Suppliers report
50 percent
of China-sourced factories
participate in an energy
efficiency program



Enhancing the environmental sustainability of key agricultural commodities

According to the World Economic Forum, the global population will reach 9 billion people by 2050. Demand for food will increase by 60 percent while resources will become scarcer. The challenge facing the world is how to produce the volume of food necessary while working to conserve resources. As a large global retailer, Walmart is committed to meeting this challenge by working with others to support food production that is sustainable and affordable for customers. We are focused in particular on produce, animal agriculture, grains and seafood.

Supporting more sustainable produce

Our customers head to our produce aisles to find fresh and healthier food every day. That's why we have sourcing offices and agronomic specialists in growing regions all around the world who work directly with our growers to improve agricultural practices and deliver high-quality produce to our customers. Our initiatives on produce sustainability focus on hot spots such as yield, food waste, water and pesticide use. One example of our progress is below.

Working with grape producers to reduce water and fertilizer use. Table grapes are one of our largest produce categories. We source them from California (U.S.A.), Chile, Mexico and Peru, depending on the time of the year, and have worked with our suppliers across these regions to set target improvements of 20 percent in each of our priority hot spots of yield, water use and fertilizer use. These targets align with the World Economic Forum's New Vision for Agriculture, which provides guidance on the steps needed across all food categories to sustainably feed the world. Our suppliers report their progress each year through the Sustainability Index. One example is Molina, a Mexico-based supplier of grapes, which has used shade nets to reduce water use by 25 percent and fertilizer use by 10 percent. This water-smart agricultural practice has also allowed Molina to increase yields by a reported 10 to 15 percent for Cotton Candy and Prime Seedless grape varieties.



Our customers head to our produce aisles to find fresh and healthier food every day.

Supporting sustainable animal agriculture

Walmart customers expect high-quality meat and dairy products from animals that are raised in a humane and sustainable manner. Together with our suppliers, industry groups and nonprofit partners, we are pursuing solutions in our meat and dairy supply chains to reduce GHG emissions and improve water quality. With almost 92 million cattle and 71 million swine in the U.S. alone, there is an important opportunity to scale solutions. By pursuing best practices in areas such as manure management, enteric emissions and feed inputs, we estimate that there is a potential to reduce 300 MMT of GHG emissions by 2030, while at the same time reducing waste and improving yield. Below are highlights from our efforts in animal agriculture over the past year:

- **Tracking improvements in U.S. beef.** This year, as part of the U.S. Roundtable for Sustainable Beef, we have worked to draft a comprehensive set of metrics for the U.S. beef supply chain. These metrics will help us measure and track improvement against six priority indicators for sustainable beef, including animal well-being and GHG emissions, among others. Also, we worked with The Nature Conservancy to develop a set of sustainability criteria for our dedicated beef supply, which we expect will account for 15 percent of the industry by 2023.
- **Improving sustainability in U.S. dairy farming.** We are working with the U.S. dairy industry to achieve its voluntary goal of a 25 percent reduction in GHG emissions by 2020. Through the advancement of the National Dairy FARM program, the industry can measure and manage progress in improving both animal welfare and environmental stewardship. Other initiatives include our sales of products like Magic Dirt, a certified organic premium potting soil from recycled agricultural waste that offsets GHG emissions while providing an additional revenue stream to dairy farmers who have invested in anaerobic digesters. In addition to these efforts, our new fluid milk plant in Fort Wayne, Indiana, which will open soon, will utilize the highest-quality milk and state-of-the-art processing methods to help extend the shelf life in order to reduce food waste and associated GHG emissions.



- **Improving feed utilization of lamb at Asda.** Improved feed utilization efficiency has delivered significant reductions in cost of production in pig and poultry production over the previous 40 years. During this period, there has been virtually no improvement in feed conversion efficiency in sheep production, resulting in relatively high costs of production for lamb. The main reason for the lack of progress in lamb is that there has never been a simple way of measuring feed consumption and growth rates in lamb.

Asda and Dunbia have worked with Harper Adams University modifying equipment originally designed for pigs to make it suitable for measuring growth and feed utilization in lambs. A large number of breeding animals will be run through this system, building up a large database of the feed conversion efficiencies of different animals and breeding lines.

- **Improving dairy welfare at Asda.** Asda is working with a group of over 100 British dairy farmers with approximately 33,000 milking cows to improve their herds' health and welfare. In the last 12 months mastitis rates have fallen by 3.5 percent to 32 cases per 100 cows. This is a further improvement from the U.K. national average of 56 cases per 100 cows.

“This collaboration between environmental organizations and some of the world’s largest agriculture-based companies should lead to significantly ramped-up water conservation in the Midwest. TNC is eager to use our science and expertise to accelerate solutions that match the scale of the challenges we face in that region, such as improving water quality across the Midwest and addressing the dead zone in the Gulf of Mexico.”

Mark R. Tercek,
President and CEO of The Nature Conservancy

Improving sustainability in grain production

Many of the products on our shelves contain grains such as corn, wheat and soy. These crops cannot be grown without inputs such as fertilizer and water, which—when used improperly—can damage the environment. Walmart is working with suppliers and other stakeholders to help ensure sustainable, efficient and productive agriculture, particularly in the U.S., through two major programs.

- **Fertilizer optimization.** Walmart is working with 17 suppliers in developing fertilizer optimization plans and sharing best management practices on a reported 76 million committed acres of U.S. farmland by 2025. Fertilizer represents a significant cost input for most crop categories, and its inefficient use leads to water quality issues and GHG emissions. These efforts are designed to reduce fertilizer loss and improve yields. Based on the suppliers engaged in the program today and the 76 million committed acres, we expect to reduce an estimated 24 MMT of GHG emissions by 2025.
- **Midwest Row Crop Collaborative.** Walmart is a proud founder-member of this collaborative, launched in August 2016. The MRCC, a project of the Keystone Policy Center, brings together leading food and agricultural supply-chain companies and conservation organizations to support farmers' projects in Illinois, Iowa and Nebraska that are designed to improve soil health and water quality through adoption of preferable agricultural practices. These practices include use of cover crops, implementing conservation tillage and adaptive, innovative and science-based nutrient management techniques. Walmart contributed over \$300,000 to the Keystone Policy Center to help fund the project.

The MRCC is committed to working with farm organizations, environmental groups, and state and local watershed partnerships to achieve a set of goals by 2025 that were outlined in the EPA's Gulf of Mexico Hypoxia Taskforce action plan. These goals include:

- Engaging 75 percent of row crop acres in Illinois, Iowa and Nebraska in sustainability measures to improve soil health and outcomes
- Reducing nitrogen loading from Illinois, Iowa and Nebraska by 20 percent
- Ensuring that 50 percent of all irrigation units used in Nebraska maximize water conservation to reduce pressure on the Ogallala Aquifer
- Ensuring that Illinois, Iowa and Nebraska are on target to meet a goal of 45 percent reduction in soil nutrient loss by 2035



Addressing sustainability issues in seafood

Over the past half century, demand for seafood has increased five-fold according to the World Wildlife Fund. An estimated 75 percent of the world's fisheries are at or beyond sustainable limits. Meanwhile, an estimated 1 billion people rely on fish as their primary source of protein, while another 200 million rely on the industry as their main source of income. In the absence of these certifications, the supplier must be actively working toward certification or in a fishery or Aquaculture Improvement Project.

We began our work in sustainable seafood in the U.K., U.S. and Canada, and in FY2017, we expanded to Brazil, Mexico and Central America. Walmart works with the Sustainable Fisheries Partnership (SFP) to track our seafood supply against our sustainability policy. In collaboration with SFP, we track suppliers, species, catch type, fishery of origin, certifications and improvement projects. Today, based on supplier-reported data in the U.S., 100 percent of Walmart and Sam's Club fresh and frozen, farmed and wild seafood is sustainably sourced in accordance with Walmart's Seafood Policy. For our wild caught supply, 35.9 percent our U.S. suppliers reported that they were certified by the Marine Stewardship Council or certified by a

program which is recognized by the Global Sustainable Seafood Initiative (GSSI). The balance of our suppliers reported involvement in Fishery Improvement Projects, with plans in place to achieve sustainable certification.

In addition, 99 percent of our farmed supply chain in our U.S. business reported certification by Best Aquaculture Practices, with less than 1 percent of farmed suppliers committed to obtaining certification within the year.

Our stores in the U.K. and Canada are also working with their suppliers to sustainably source the seafood in their stores. Our Brazil, Central America and Mexico markets are expanding their sustainable seafood efforts by working with suppliers to gain greater transparency into their seafood sourcing. Additionally, by 2025, based on certain factors including price and demand, Walmart U.S., Sam's Club and Walmart Canada will require all canned light and white tuna suppliers to source from fisheries that are either third-party certified or engaged in Fishery Improvement Projects. We also offer customer choice by carrying FAD-free and pole and line canned tuna in our U.S., Canada and ASDA stores. In addition, our business in Japan recently collaborated with suppliers and nonprofits to launch Japan's first FIP with the aim of improving the sustainability of the sea perch fisheries in Tokyo Bay.



Working with our suppliers to improve efficiency of factories

In addition to pursuing emissions reductions in agriculture, we've made significant progress with our manufacturing suppliers to report and reduce their emissions. Walmart has been encouraging the use of CDP (a not-for-profit formerly known as the Carbon Disclosure Project) in our supply chain to report on emissions footprints and inspire reductions. (See Drive adoption of issue specific measurement tools, pg. 90). Additionally, Walmart encourages suppliers to work directly with their factories to identify efficiency opportunities.

The Walmart Factory Energy Efficiency Program

Through our Factory Energy Efficiency Program, we are working with our suppliers to promote energy efficiency in the factories in our global supply chain. We have placed special focus on China, where our initiative complements the Government's five-year goal of reducing energy intensity by 15 percent by 2020. We aim to have a reported 70 percent of our China-sourced business participating in a factory energy efficiency program by the end of 2017.

RESULTS FROM REDE

As of February 2017, the program is on track and delivering results:

- Over 50 percent of our China-sourced business reports being a part of an energy efficiency program and we are on track to meet the 70 percent commitment
- Over 600 factories have joined the RedE system; on average, an active user is projected to save more than \$150,000 in operational costs and reduce CO2 emissions by 900 metric tons
- Over 650 individual projects are in progress or complete, resulting in expected savings exceeding \$20 million and driving over 110,000 metric tons of CO2e emissions reductions.

To achieve this target, Walmart has promoted use of McKinsey & Company's Resource Efficiency Deployment Engine (RedE), a web-based tool designed to help suppliers identify, prioritize and implement energy efficiency projects in a simple, easy-to-use platform. Factories that use RedE are provided with project ideas to reduce energy costs, as well as a platform to track progress and report energy metrics to Walmart; we then aggregate this data and make it anonymous. Participating factories are supported by local-language training from experts such as Environmental Defense Fund.

In FY2017, Walmart and McKinsey worked to provide to Walmart Suppliers a free version of the RedE tool called RedE Reporting, alongside the original, full-capability tool. We believe that removing the cost barrier to participation encourages more factories to join and sets the foundation for broader expansion of the program in the future.

Improving energy and water use in apparel mills

The apparel mill is a major hot spot for energy and water use—fabric also drives a large proportion of the embedded cost of a garment. Walmart is working



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Bestway

Last year, Bestway, a Chinese plastic toy manufacturer, joined with Walmart through CDP Supply Chain to measure and report its emissions footprint for the first time. As Bestway installed solar panels, retrofitted production lines and switched to LEDs, the measurement process helped them understand the positive impact their efforts had on both the company's emissions and business footprint. These efforts also gained recognition for Bestway as a top-rated Chinese company in the 2016-2017 CDP Supply Chain Report. In the future, Bestway plans to reduce its emissions by another 5 percent, using the RedE tool to help identify additional areas of opportunity for improving energy efficiency.

“The Higg Index allows different company types, from luxury brands to value retailers, to work together to unlock investment and innovation in the industry’s most resource-intensive segments: textile mills.”

Jason Kibbey
CEO, Sustainable Apparel Coalition

with our global suppliers on two programs focused on mills. For both programs, the Sustainable Apparel Coalition’s widely accepted Higg Index is used to measure baseline performance and track progress. By collecting facility-level data, the Higg Index provides transparency and encourages action, mill by mill. The two supplier mill programs are:

- **Driving sustainability improvements.** Driven by the Natural Resources Defense Council, a leading NGO, the Clean by Design program baselines the performance of Chinese mills and provides onsite expertise and coaching to help them formulate efficiency improvement plans and achieve cost savings. Three mills that our suppliers source from participated at Walmart’s invitation, and each identified an improvement plan. Overall, the mills identified more than 20 individual energy- and water-efficiency projects.
- **Baseline performance.** We are working with our suppliers to improve the use of energy and water by textile mills. The program launched in October 2016 in Shenzhen, China, with the participation of 10 of Walmart’s largest direct-import suppliers from around the world, together with representatives from more than 20 mills. The suppliers and mills agreed to complete the Higg Index and participate in workshops focused on practical steps to reduce costs and environmental impact through resource efficiency and process management.



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The “Every Day Low True Cost” t-shirt



At Walmart, we don’t want customers to have to choose between a product they can afford and one that’s good for the environment. Using the Sustainability Index as a guide, we challenged ourselves and one of our leading apparel suppliers, Intradeco, to significantly improve the sustainability of our \$3.88 ladies’ t-shirt—without raising the price. Our collaboration has produced the Every Day Low True Cost (EDLTC) shirt. The cotton used is traceable to the Mississippi Delta in the U.S.; Intradeco reuses 30 percent of the water used during the manufacturing process; and the t-shirt is manufactured using nearly 50 percent renewable energy. To engage our customers, we have highlighted key sustainability attributes of the EDLTC story on the product display. While this initiative focused on one supplier and one product, the success of the EDLTC t-shirt sends an essential message: high-quality, more sustainable products are part of the Walmart everyday low price promise. We plan to apply the EDLTC model to other apparel items as well as new areas of our supply chain.



Getting to zero net deforestation

Forests make up a crucial part of our planet's ecosystems, offering habitat for animal and plant life and absorbing carbon from the atmosphere. But forests—especially delicate and diverse tropical rainforests—are particularly vulnerable to agriculture and industry. According to Conservation International, nearly half of the world's forests have already been lost, and continuing deforestation accounts for 11 percent of annual global GHG emissions. Recent studies also demonstrate that certain agricultural commodities—notably palm oil, soy, cattle and timber—drive the majority of deforestation around the world.

To achieve our 2020 goal of zero-net deforestation, Walmart is working with our suppliers around the world. We are accomplishing this through innovative sourcing strategies and the use of technology to increase transparency and supply chain accountability. We also support regional efforts to reduce forest loss and deliver sustainable commodities. Through our 2020 commitment, Walmart committed to address deforestation across multiple commodities. For example, in partnership with governments, NGOs and industry groups, Walmart has been working to source private-brand palm oil and beef from Brazil's Amazon with zero net deforestation. We will expand this work into additional critical commodities, including all Brazilian soy and private-brand pulp and paper.

Palm oil

Palm oil is an ingredient in a variety of food and consumables products, and is also widely used as a cooking oil in many parts of the world. However, high demand for the oil has contributed to deforestation. To address this and related issues, stakeholders created the Roundtable on Sustainable Palm Oil (RSPO), which developed global standards for certifying sustainable palm oil.

In FY2017, based on supplier-reported data, the palm oil used in our global private-brand products was sourced through a mix of RSPO-segregated (8.4 percent), Mass Balance (39.5 percent), Identity Preserved (0.4 percent) and GreenPalm certificates (51.8 percent). We currently accept all forms of RSPO-certified sustainable palm oil, but have asked our suppliers to shift toward more Mass Balance and Segregated sources as we move toward our 2020 goal. Additionally, we encourage our national brand suppliers to source palm oil that is zero net deforestation free, and we measure and track through the Sustainability Index. In FY2016, we sourced a majority 71 percent GreenPalm Certificates, and we are encouraged by the 19.3 percent increase of physical certified palm (RSPO, MassBalance, Segregated and Identity Preserved) our suppliers report sourced in FY2017.

We are advocating for improvement in the current RSPO (for example, guarding against expansion into high carbon stock forests, protecting peat lands and reducing GHG emissions), and we hope to see these improvements as we work to achieve our zero net deforestation goal by 2020. We are encouraged to see the amount of certified-sustainable palm oil and RSPO membership increasing. Through our engagement with the RSPO and with our suppliers, we expect this trend to continue across the industry.

Soy

The Consumer Goods Forum (CGF) has identified soy as one of the commodities for its members to source through deforestation-free channels. Walmart is working collectively through CGF and with our supply chain to achieve this target. Along with other retailers and suppliers operating in Brazil, we supported the Soy Moratorium and supported its extension during the last renewal cycle in 2014. Before the moratorium was enacted, 30 percent of Brazilian soy came from deforested areas. Since the moratorium, that amount has fallen to about 1 percent according to Science academic journal.

Walmart supports the indefinite extension of the Soy Moratorium in Brazil's Amazon region, and we are committed to expanding our work in soy to other sensitive biomes in Brazil where regional efforts are needed.

Before the Soy moratorium was enacted, 30 percent of Brazilian soy came from deforested areas. Since the moratorium, that amount has fallen to about 1 percent.



Beef

To help reach our goal to source Brazilian beef with zero net deforestation from the Amazon, we use a geospatial transparency tool. As of January 2017, the tool includes more than 75,000 registered farms and analyzes our orders to help ensure that no beef comes from deforested areas.

To meet our 2020 zero net deforestation goal, we plan to expand this program beyond the Amazon to other sensitive biomes in Brazil such as the Cerrado. We are already training our beef suppliers from other regions to manage geographical information at their slaughterhouses and to input the coordinates of their suppliers' farms into the system.

We will also need to expand the scope of this program beyond the finishing ranch to cow/calf operations. This will help mitigate remaining risks of deforestation within our beef supply—including the possibility that cattle might be traded from high-risk ranches to approved ranches or slaughterhouses, and the risk that ranchers who contribute to deforestation re-register their operations under different names.



Pulp and paper products

Walmart supports the implementation of more sustainable pulp and paper procurement practices for products. We are also working on packaging, to reduce materials used when possible and source sustainably. (See Designing sustainable packaging, pg. 111.)

We are targeting zero net deforestation in our private-brand pulp and paper products, and we continue to encourage our national-brand suppliers to set similar goals. We use the Sustainability Index to measure and track supplier performance on the percentage of virgin fiber certified to either chain-of-custody or mix standards (or is controlled wood).

“Forests benefit us all by providing clean water, life-saving medicines and a stable climate. Halting deforestation by investing in sustainable agriculture and forest conservation is the right way to secure these benefits while producing the agricultural goods we need. Walmart’s efforts to drive sustainable practices on the ground, combined with its global reach, are helping spread these good ideas and models around the world.”

Peter Seligmann
Co-Founder, Chairman and CEO
Conservation International

BACK TO SCHOOL WITH A SUSTAINABLE, AFFORDABLE NOTEBOOK

We're proud to sell a lot of school supplies, helping young people in all our markets prepare for a bright future. It's also important to offer products that are both affordable and sustainable, which is why our stationery business has been working to better understand the sources of the materials used. During the FY2017 back-to-school season in the U.S., we offered our customers a notebook certified by the Sustainable Forestry Initiative (SFI) for just 88 cents—proving that we can provide quality and sustainability at a price point that everyone can afford.

SMALL TAG, BIG IMPACT

As we tackle difficult issues like deforestation, we look for opportunities large and small. For example, the small informational hangtags that provide information for customers on many of our apparel products might seem unlikely contributors to the loss of forests thousands of miles away, but even small changes can make a difference. Last year, Walmart began to transition our private-label paper hangtags to 100 percent FSC-certified paperboard. To date, we've transitioned our No Boundaries, Secret Treasures and Athletic Works brands. Since we rolled out the packaging change in early FY2017, over 515 million units have moved to the new labels.



Reducing food and product waste upstream and downstream

As a retailer, we hate waste of any kind. Waste increases costs for our customers, our business and society. That's why we have extended our waste-reduction efforts beyond our own operations to help rewire entire supply chains, with the aim of fostering a circular economy in which materials can be continually repurposed and recycled.

Addressing end-to-end food waste

Every year, roughly one-third of the food produced in the world for human consumption—approximately 1.3 billion tons—gets lost or wasted. This waste occurs up and down the supply chain, from farm to consumer. For example, according to the Natural Resource Defense Council, American families throw out approximately 25 percent of the food and beverages they buy. Food waste creates unnecessary costs within our own operations, poses a risk to the world's ability to feed a growing global population and harms climate, water, land and biodiversity. We are working to address this problem in a systemic way.

In addition to reducing waste in our own operations (see pg. 66), we are working with suppliers and nonprofit organizations in the U.S. and empowering customers to help in the fight to reduce food waste. Walmart supports the United Nations goals of reducing global per capita food waste by half at the consumer level by 2030, reducing food loss along production and supply chains and maximizing the value of the waste that remains.

Our efforts in this area include the following:

Reducing upstream food waste:

- **Measuring food waste.** The Walmart Foundation provided World Resources Institute (WRI) with a grant to advance the Food Loss and Waste (FLW) standard, which is an accounting and reporting tool recently created through a multistakeholder effort and adopted by CGF. This grant provides WRI with funding to encourage suppliers and others across the supply chain to use the standard.
- **Planning supply more precisely.** We work with growers to help them plant the right amount, reducing excess production and waste. This is the first tier of food waste prevention in the EPA waste framework.
- **Moving to more flexible product specifications.** We adjust our specifications on a weekly basis to accept size and other cosmetic variations that do not affect safety or quality and to keep produce available for our customers. When a corn shortage materialized last summer, we temporarily accepted a smaller size than usual, preventing that small-size crop from being discarded. In the U.K., Asda stores sell cosmetically imperfect fruits and vegetables under a variety of labels, so that high-quality, nutritious produce stays out of the waste stream.
- **Using philanthropy to address upstream food waste.** The Walmart Foundation is looking at the role philanthropy can play in addressing upstream food waste. For example, the Walmart Foundation provided World Wildlife Fund with a \$650,000 grant to study food waste in production of potatoes, tomatoes, leafy greens, stone fruit trees and corn. The objective is to identify changes in production that could decrease waste and yield higher profitability for the farmer, and to identify the options for diverting food waste that would have the highest benefit for people and the environment.

FOUR WAYS LESS THAN PERFECT PRODUCE SHINES AT WALMART

1



Produce is classified by grade, and for years we've sourced both No. 1 and No. 2 grades of some items. One example is Roma tomatoes. Many customers use these to make sauce vs. eating them whole.

2

Due to a corn shortage in the U.S., last year we temporarily accepted smaller corn that has the same quality and flavor as the larger version our customers are used to.



3



Smaller-than-expected apples are packaged in lunch kits perfect for kids to take to school.

4

This year, we began selling misshapen potatoes from a supplier in TX, and the "I'm Perfect" line of imperfect apples from a grower in WA.



Reducing downstream food waste:

- **Taking days out of the supply chain.**

Sometimes food is wasted because stores don't have enough time to sell it before it passes peak quality. Over the past 18 months we've taken 1.5 days out of the produce supply chain in our Walmart U.S. operations. This change is designed to provide freshness to customers and reduce waste.

- **Discouraging unnecessary disposal of food.**

According to the National Resources Defense Council, about 20 percent of food waste is due to consumers' confusion about what date labels mean. In 2015, we asked suppliers in the U.S. to convert to a "Best if Used By" label on all private-brand products unless a food safety or regulatory reason might prevent us from doing so. The label helps prevent food from being discarded while it's still good. Since then, the Food Marketing Institute, Grocery Manufacturers Association and USDA have updated their food product labeling guidance to encourage use of the "Best if Used By" label. In addition, we offer customers discounts on food that is close to its expiration date, including meat, bakery, dry goods and dairy. In FY2017 we sold more than 250 million units through this program, saving our customers money and helping prevent food waste in Walmart U.S. stores.

- **Providing advice and education.** Across many of our global operations, we offer customers tips and ideas for reducing food waste. In the U.K., for example, Asda customers saved an estimated average of £57 a year thanks to a campaign designed to curb food waste in the home. The campaign offered customers advice on food storage and labeling, as well as recipe ideas for leftovers. In the U.S., we started airing a video about food waste prevention at checkout, which has been viewed 10 million times.
- **Using philanthropy to address downstream food waste.** Walmart and the Walmart Foundation focus their philanthropic efforts to address downstream food waste on increasing capacity among charitable organizations for food recovery in Canada and the United States. (See Relieving hunger, pg. 140.) We are also working with consumers and stakeholders to identify other potential solutions. For example, the Walmart Foundation provided funding to New Venture Fund to catalyze ReFED, a multistakeholder initiative that developed a road map to reduce U.S. food waste by 20 percent. The funding supported ReFED in the development and dissemination of the road map, as well the creation of an innovators' database of solutions and engagement of funders and investors to support these solutions. The Walmart Foundation also provided a grant to Global Green USA to evaluate methods for resident outreach on reducing food waste, technology to measure waste in multifamily buildings, as well as the integration of composting facilities and use of compost into green building and community design.



Over the past
18 months we've taken
1.5 days
out of the produce supply
chain in our Walmart U.S.
operations.

Designing products for efficiency and end of life

As the amount of waste generated each year continues to grow and the resources we rely on become more scarce, it's becoming more important to design products at the outset with their end in mind. Doing this successfully means that products require fewer resources during production, and use and ultimately allows important materials to be more easily recycled back into the value stream. While Walmart usually does not design the products we sell, we are encouraging our suppliers, through the use of the Sustainability Index, to factor reuse, recycling and efficiency into their designs. Examples of success in this area include the following:

- **Giving automotive batteries a second life.** Automotive batteries are an essential part of our lives, but the components they are made of can be harmful if not handled correctly. Johnson Controls—a large supplier of automotive batteries at Walmart and high scorer on the Sustainability Index—is aware of this risk and is committed to being part of the solution. In addition to collecting batteries through in-store programs, the company has developed a state-of-the-art process to recycle 100 percent of the returned batteries into new batteries. Globally, this program recycles 8,000 batteries every hour.
- **Light bulbs that save money, energy and emissions.** At Walmart, we want to bring the newest and highest-quality products to our customers. That's why in 2015 we made a commitment to phase out compact fluorescent lamp (CFL) bulbs from our U.S. stores in favor of LEDs, a more efficient technology. By mid-FY2017 we stopped selling CFLs in our U.S. stores altogether. We wanted to provide our customers with an affordable price, so we worked with our Great Value suppliers to bring down the price of LED light bulbs. As of the close of FY2017, we believe we have one of the highest-quality and lowest-priced bulbs on the market. In the U.S. alone, we sold enough LEDs in FY2017 to power over 1 million U.S. households, saving more than 8 billion kWh of electricity and 3 million metric tons of GHGs over the lifetime of the bulbs when compared to a CFL.



Designing sustainable packaging

Packaging serves many useful purposes: protecting the product, providing consumer education, preventing theft and tampering, and helping to extend shelf life and reduce food waste. Walmart aims to reduce environmental and social impacts of private-brand and national-brand packaging, while maintaining our ability to deliver quality products to customers. Sustainable packaging has been a fundamental pillar of our sustainability work from the beginning—and a core element of doing more with less while efficiently delivering products to our customers.

In FY2017, we committed to a new goal to have 100 percent of the packaging used for our private-brand products be recyclable by 2025. We also encourage suppliers to put recyclability information on pack. When customers know what can and can't be recycled, they can sort properly and help reduce contamination in our recycling streams to create stronger, more robust recycling markets. Our progress in FY2017 included:

- **Mobilizing suppliers for sustainable packaging.** We continually look for ways to engage with our suppliers to make packaging more sustainable. In October 2016, we hosted a Sustainable Packaging Summit for hundreds of suppliers and merchants. Besides introducing our Sustainable Packaging Position Statement, which outlines our expectations for sustainable packaging and Sustainable Packaging Playbook, which provides tips and examples to help suppliers improve and innovate, we also challenged each of our suppliers to develop a plan to redesign packaging for at least one product in the next six months and to adopt a consumer-friendly recycling label, such as the How2Recycle® label.



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A triple win in packaging

In FY2017, Walmart U.S. worked with suppliers to migrate from plastic blister packs traditionally used to package children's watches to paper-board packaging. Paper-board packaging is not only more commonly recyclable, it also gives the customer a better view of and feel for the product, is easier to open, and allows more graphic content to merchandise the product. Since being introduced in the fall, this updated packaging impacted over 1 million children's watches in FY2017, helped boost sales by over 25 percent and saved cost.



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Making the box fit the product

E-commerce is a major source of packaging, and here, too, Walmart is looking to take as much material as possible out of the equation. Recently, walmart.com increased the number of box sizes we work with from 11 to 27, helping avoid the use of more packaging than necessary when shipping customer orders. This innovation resulted from a collaboration among several Walmart departments, including customer support, logistics and packaging engineering. Additional sizes reduced the volume of cartons used by 6.5 million cubic feet in FY2017. That's a cost saving, material reduction and better experience for our customers.

“We cannot understate the importance of the support of retailers like Walmart in the How2Recycle® program, who are leveraging their influence in the supply chain to make a true difference to support customer-friendly recycling labels. We very much look forward to welcoming more suppliers to How2Recycle® in the near future.”

Kelly Cramer
Senior manager
Sustainable Packaging Coalition

- Increasing recycling capacity.** Walmart and the Walmart Foundation, along with a coalition of other corporate and foundation partners, helped launch the Closed Loop Fund in 2014. The fund aims to invest \$100 million over five years to boost the amount of recycled materials available for manufacturing. Through no-interest and below-market loans to U.S. municipalities and private companies, the Fund supports projects to improve local recycling infrastructure and boost recycling rates, increasing the value that can be recovered through recycling and returned to the production stream. In Memphis, Tennessee, for example, the Fund supported investment in curbside recycling carts for more than 100,000 households—which is expected to increase the volume of recycling collected by more than 17,000 tons a year.
- Making it easier for customers to recycle.** Walmart U.S. and Sam’s Club U.S. joined the Sustainable Packaging Coalition’s How2Recycle® label program in 2015. These standardized packaging labels provide consistent and transparent information to customers regarding what can—and can’t—be recycled. Thanks in part to Walmart’s support, the program now has over 60 member companies spanning a wide range of products.

Walmart recycled content in packaging by product sector

The Sustainability Index includes questions for suppliers that track their performance in key indicators. The following chart shows the results from the suppliers that participated in the Sustainability Index to the question, “What percent of sales packaging has post-consumer recycled content, sustainable sourced renewable content or recyclable content?”

SECTOR	AVERAGE PERCENT OF POST-CONSUMER RECYCLED CONTENT
Food, beverage and agriculture	26
General merchandise	30
Consumables	18



We also worked with coalition members to provide over

1,500

recycling bins to allow children in Flint, Michigan to recycle plastic bottles from donated water.



In addition to Walmart's work to support redesign and labeling of packaging for recycling, Walmart and the Walmart Foundation also support other packaging recycling initiatives:

- **Recycling in Flint.** Following the water contamination disaster in Flint, Michigan, the flood of bottled water to the city from a variety of donors created a recycling challenge. To support schools, not only did Walmart donate water, but we also worked with a coalition of partners to provide more than 1,500 recycling bins to allow children to recycle plastic bottles from donated water. The Walmart Foundation and other coalition partners made a grant to Keep America Beautiful for recycling efforts in schools.
- **Recycling in Walmart Argentina.** In a collaboration with Coca-Cola, Walmart Argentina runs the "Optimism that Transforms" program, which is aimed at increasing the recovery and recycling of plastic and glass. The program encourages the community to separate PET packages in their homes and bring them to recycling stations available at all Walmart Argentina stores. In FY2017, more than 100 pounds of material were collected for recycling.
- **Optimizing infrastructure.** The Walmart Foundation continues to support efforts to expand recycling. In FY2017 the Foundation provided a \$225,000 grant to the U.S. Chamber of Commerce Foundation for its initiative. The initiative will work with civic stakeholders to help optimize recycling and recovery of high-value materials generated from commercial, industrial and residential sources.





CHALLENGES

Reducing environmental impacts

Complexity of commodity supply chains

Commodity supply chains often consist of many layers, from farms, to factories, distribution, retail stores and finally to the end consumer. Neither transparency nor traceability is common practice across such complex supply chains and it is difficult to communicate and to reliably measure and track progress through all of these layers. In addition, a single item may have ingredients and components from multiple countries of origin that are co-mingled in various locations along the supply chain, adding to the difficulty of tracking any one ingredient or component. Data collection to assess environmental and social practices and drive improvement is also a challenge, due to inconsistent tools, data collection and infrastructure.

Short-term financial impact

Financial paybacks play a central role in deciding whether to make an efficiency retrofit or upgrade. While energy efficiency projects often reduce costs as well as emissions, the longer the payback period, the less financially attractive the project is in the short term. This is especially true today, given the low price of fossil fuels and water in some markets.

Pressure to develop land and use water supplies

The growing global population and the desire to drive economic growth through agricultural development is putting tremendous pressure on natural resources such as water and forests. Often, ingredients are traded based on a commodity market that lacks transparency and traceable infrastructure. While third-party certification programs can help, the uneven adoption rate by producers and the dearth of certified supply volumes in the marketplace can have an impact on the price of products for our customers.

Lack of data on drivers of food waste

There is limited information on the causes of both upstream and downstream food waste, making it difficult to identify behaviors and practices that would lead to improvement.