



BEST OF
SUSTAINABLE
SUPPLY
2014



ETHICAL | ENVIRONMENTAL | ECONOMIC



INNOVATION IS KEY TO OUR CSR AND SUSTAINABILITY JOURNEY, AND AS YOU'LL SEE IN THIS REPORT, McDONALD'S SUPPLIERS HAVE AN IMPRESSIVE TRACK RECORD OF INNOVATING FOR THE THREE ES: ETHICS, ENVIRONMENT, AND ECONOMICS.

Welcome to McDonald's 2014 Best of Sustainable Supply. This year, we are delighted to honor 36 suppliers and 51 projects that represent real innovation toward a more sustainable supply chain. Innovation is key to our CSR and sustainability journey, and McDonald's suppliers have an impressive track record of innovating for what we call sustainability's three Es: ethics, environment, and economics.

All of their efforts are impressive, and the Best of Sustainable Supply helps us to identify the very best practices and innovations happening every day in our supply chain, and to share that knowledge with other suppliers. This year, we received 585 submissions, almost 40 percent more than last time. I'm delighted with the increase, not just because we have even more outstanding initiatives taking place in our supply chain, but because of what it says about McDonald's suppliers. Every year, our suppliers focus even more attention on sustainability, applying innovation to make a real difference for the people, communities, animals and environment that touch our supply chain. And the benefits don't end with us. Many of these innovations can bring about more widespread change in our suppliers' own industries and in broader society.

This year's report again demonstrates that McDonald's suppliers are world-class in their ability to provide a safe, sustainable, and assured supply of food and products our customers love. We thank all the suppliers who contributed and congratulate those who are recognized here.

We hope you find as much inspiration in their stories as we do.

JOSE ARMARIO

CORPORATE EXECUTIVE VICE PRESIDENT, WORLDWIDE SUPPLY CHAIN, DEVELOPMENT AND FRANCHISING

WELCOME TO THE BEST OF SUSTAINABLE SUPPLY

Fifty-one case studies highlighting sustainable supply best practices from around the world

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ETHICS, ENVIRONMENT, ECONOMICS IN OUR SUPPLY CHAIN

- ETHICS** Sourcing from suppliers who ensure the health and safety of their employees and the welfare and humane treatment of animals in our supply chain.
- ENVIRONMENT** Working to ensure that our food, drinks and packaging and their production, distribution and use minimize lifecycle impacts on the environment.
- ECONOMIC** Delivering affordable food while supporting equitable trade practices and investment in the communities where our suppliers operate.

These case studies were chosen from nearly 600 supplier submissions by the Sustainable Supply Steering Committee and a panel of McDonald's executives and external experts. We thank every supplier who took the time to tell us their story and remind us of the progress our entire supply chain is making toward sustainability.

SUSTAINABLE SUPPLY STEERING COMMITTEE

- ASIA-PACIFIC, MIDDLE EAST, AFRICA:** Brian Kramer
- EUROPE:** Keith Kenny, Jacqui Macalister
- LATIN AMERICA:** Leonardo Lima, Cristina Gomez-Garcia
- NORTH AMERICA:** Susan Forsell, Jeff Fitzpatrick-Stilwell, Jessica Droste Yagan
- GLOBAL:** Townsend Bailey, Michele Banik-Rake, Bruce Feinberg, Gary Johnson, Rona Starr

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- GLOBAL ROUNDTABLE FOR SUSTAINABLE BEEF:** Ruairaidh Petre
- GREENBIZ GROUP:** John Davies
- MCDONALD'S CORPORATION:** Francesca DeBiase, Bob Langert
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- SUSTAINABLE FOOD LAB:** Hal Hamilton
- TECHNOSERVE:** David Browning
- WORLD RESOURCES INSTITUTE:** Betsy Otto
- WORLD WILDLIFE FUND:** Alex Bjork

SUPPLIER LEADERSHIP

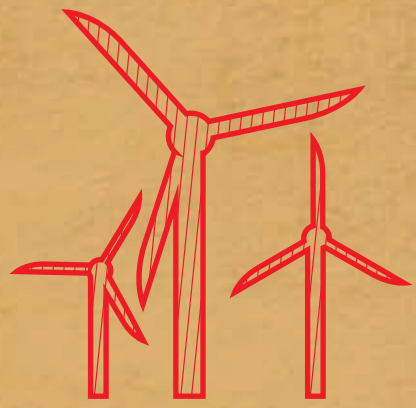
McDonald's works closely with suppliers to continuously improve the economic, ethical, and environmental impacts of our supply chain. Our suppliers take this responsibility seriously and, in many cases, innovate toward a more sustainable supply chain. Visit these online resources for more about some of our efforts around the world.

Asia-Pacific, Middle East, Africa:
[Our Food Your Questions](#)

Europe: [Flagship Farms and McDonald's Agricultural Assurance Programme](#)

Latin America: [Arcos Dorados Holdings Inc.](#) (McDonald's developmental licensee in Latin America, and a publicly traded company)

North America: [The Road to Sustainability and Our Food. Your Questions.](#)



CLIMATE CHANGE AND ENERGY

Our suppliers can reduce their carbon footprints through increasing energy efficiency or use of renewable energy. They can also demonstrate best practices by identifying other sources of greenhouse gas emissions and taking steps to reduce them.



CATEGORY WINNER

COMBINATION TRAILER INNOVATION



Richard Wilson
Logistics Director
Arla Foods

OPPORTUNITY: Dairies transporting both raw milk and finished dairy products use two types of vehicles—tankers and refrigerated containers—requiring more fuel and resulting in greater costs. In the United Kingdom, Arla Foods faced the problem of trailers running empty after delivering the finished product. The company challenged the logistics operations team to come up with solutions.

SOLUTION: Arla developed the dairy industry's only combination trailer—half milk tanker and half refrigerated container—expected to reduce both fuel and carbon emissions. Arla worked in partnership with external suppliers Crossland Tankers to produce the milk tank and Gray & Adams for the refrigerated trailer, both long-time suppliers to Arla Foods. The new trailer is unique, conceived of an employee suggestion scheme and forged in an unprecedented collaboration between suppliers.

RESULTS: The exterior view of the trailer is very similar to a standard double deck trailer, with low-profile running gear and a lowered step-frame section on the bottom deck to accommodate the milk tank. The milk tank can hold approximately 19,000 liters or the trailer can accommodate 85 milk cages or 22 pallets. Each vehicle will reduce Arla's fuel consumption by 60,000 liters per year, compared with two conventional tanker and refrigerated vehicles. The fuel saving translates into a carbon saving of 155 tons yearly. Therefore, the total projected fuel saving per year for the 20 trailers is 1,200,000 liters, translating into a yearly overall carbon reduction of 3,100 tons. In addition to the fuel/carbon benefits, one driver is able to undertake a combined route that would normally require two drivers, thus saving labor as well. While making a significant contribution to reaching the sustainability strategy target, this innovation also provides Arla an edge in a competitive marketplace since the company can control the entire supply chain from the cow to the consumer to maximize the benefit.



CATEGORY WINNER

GREENHOUSE GAS EMISSIONS INVENTORY AND INNOVATIVE ACTIONS



Mariana Regensburger Carlesso
Sustainability Coordinator
Celulose Irani S.A.

OPPORTUNITY: The cogeneration boiler Clean Development Mechanism (CDM) project sought solutions to problems such as using energy from non-renewable resources, inadequate waste disposal, and forest-based greenhouse gas emissions caused by the degradation of accumulated waste in landfills, forests and industrial landfills. The wastewater treatment station CDM project aimed to reduce greenhouse gas emissions, improve recovery of lost fibers in the production process, and improve efficiency in removing the organic load. Previously, wastewater treatment consisted of a primary treatment with only one decanter and a secondary treatment that degraded organic material anaerobically, producing significant quantities of methane.

SOLUTION: The project developed the CDM of the cogeneration boiler and the wastewater treatment plant (WWTP), including monitoring emissions and reducing/removing greenhouse gases by using the annual inventory. The inventory of atmospheric emissions helps the company identify and quantify all relevant sources of greenhouse gas emissions, evaluate the balance between emissions and removals and the possibilities of neutralization, and assess the feasibility of new CDM projects.

RESULTS: Implementing the cogeneration boiler allowed the company to eliminate seven old boilers and diesel fuel-based power generators, as well as the disposal of biomass waste in the landfill. The cogeneration boiler generates renewable electricity and eliminates production of methane by burning the biomass. Implementing the cogeneration boiler has resulted in several benefits: conserving and optimizing use of nonrenewable natural resources, reusing forest waste, extending the life of landfills, reducing the emission of liquid effluent, and reducing greenhouse gas (GHG) emissions. The certified emissions reductions between 2005 and 2012 totaled 1,111,861 metric tons of carbon dioxide equivalents (MTCO₂e) that were no longer emitted into the atmosphere.

The WWTP project significantly reduced GHGs, improved efficiency in fiber recovery, reduced sludge sent to the landfill, and reduced organic matter. Using recovered fiber and sludge as fuel cut down the use of nonrenewable resources. The certified emissions reductions between 2007 and 2012 totaled 213,607 MTCO₂e. These projects benefited employees and surrounding communities by providing knowledge and high-tech resources that make the operation easier and enabled the generation of income and direct and indirect jobs in the region.



TRUVIA® SUSTAINABILITY PROGRAM



Peter Dahm
Truvia® Sustainability Manager
Cargill

OPPORTUNITY: Concerns about the environmental impacts of farming and agricultural processing include the clearing of land, excessive use of fertilization, pressure on freshwater supplies, and large carbon footprint of agricultural production. Under standard supply chain conditions and practices, Cargill's stevia leaf extract produces 500 kilograms of CO₂e per metric ton of "sweet" (an assumed measure of 250 times the sweetness of sugar). The vast majority (99%) of ingredient product emissions are produced during the farming and processing stages. Cargill supports the market for products with minimal environmental impact by instituting long-term sustainability practices.

SOLUTION: Since Cargill launched the Truvia® brand of stevia sweetener in 2008, the company has sought to build a business founded on sustainability and transparency focusing on three areas: sourcing responsibly, stewarding natural resources, and sharing in improving communities. Cargill developed and launched the Truvia® sustainable agricultural standard in October 2011, the first ever in the stevia industry. A life cycle analysis identified the major environmental impact areas in the Truvia® supply chain from the farming and harvesting of stevia leaves, to extraction, purification, and product distribution. Four key areas emerged: greenhouse gas emissions, water use, waste, and land management.

Cargill is committed to reducing its carbon footprint by 50% in 2015 from its 2010 baseline and becoming carbon neutral in 2020. Cargill's sustainability goals include ensuring all processed water returns with its original quality and reducing net depletion by 25% by 2020; reducing waste by 50% across the supply chain in 2015 and becoming zero-waste by 2020; and ensuring Truvia® stevia is not grown on conservation or protected land. The UK-based Carbon Trust certified Cargill's carbon footprint and verified its water and waste footprints.

Cargill's contribution to improving communities includes launching a new partnership with the World Food Program to reach children who need better nutrition in stevia-growing areas of Bolivia.

RESULTS: Truvia® calorie-free sweetener is the first stevia-based sweetener to be certified for its carbon footprint at each stage of the supply chain: cultivation, processing, packaging, transport, end use, and disposal. Baseline figures show that each metric ton of sweet required 12 cubic meters of water. Results from 2012 show Cargill has already surpassed its 25% reduction goal by using 45% less water, largely due to improved yields. By the end of the first year of its World Food Program partnership, Cargill had provided funding to supplement nutritional school meals for more than 36,000 children and to install 250 cleaner-burning cook stoves in these schools.



MAXIMIZING THE IMPACT OF EFFICIENT SUSTAINABLE LOGISTICS PRACTICES

havi sustainability
Rafael Gomez
European Regional Director South & Head of Operations Development,
Head of HAVI Sustainability Council
HAVI Logistics

OPPORTUNITY: The logistics and distribution portion of a supply chain, by its very nature, poses sustainability challenges. While it cannot be eliminated, the environmental impacts can be significantly reduced. A global efficient & sustainable logistics project (ESL) has been led by a team founded specifically for this purpose with HAVI Logistics employees and an external consultant.

SOLUTION: In 2012, the ESL team completed an internal review of sustainability best practices across HAVI Logistics operations, including 68 distribution centers in 30 Asian and European countries, and researched industry sustainable developments. The goal was to save energy and reduce carbon emissions through efficient energy use and renewable energy sources. The team also created common energy and carbon emission efficiency measures to facilitate reporting, performance measurement, and comparison across operations. The model reduces energy consumption and increases the use of renewable energy in transportation and warehousing by monitoring energy/fuel consumption; using natural light, automatic switching, and LED in warehouses; improving warehouse cooling by minimizing refrigerant leaks and using Freon-free refrigerants; increasing on-site renewable energy, or procuring more off-site renewable energy from deregulated markets; increasing efficiency of secondary distribution and reducing kilometers driven; using telematics to monitor performance of trucks and drivers and lower consumption; increasing delivery efficiency by optimizing cooling equipment performance and isolating truck bodies for lowest energy consumption in delivering temperature-controlled goods; increasing use of renewable fuels, such as those made from used cooking oil, natural gas, or biogas; establishing vehicle specifications to reduce consumption and emissions using better engines, aerodynamics and tires and by limiting speed; and using the optimal number of warehouses to ensure lowest kilometers per ton delivered at the lowest cost, while balancing reduced emissions and cost with those generated by more warehouses.

RESULTS: ESL developed a five-year roadmap for these 10 initiatives in 30 markets in Asia and Europe. The team based these plans on aggregate data from all distribution centers in one market, reflecting the evolving carbon footprint and improved efficiencies over a five-year rolling period, based on the initiatives implemented and resulting benefits. Many roadmaps were implemented during 2013. The projected outcome in Europe reduces annual transport and warehouse energy consumption by 9%. Together with the higher use of renewable energy, this reduction will reduce CO₂ per ton delivered by HAVI Logistics operations in Europe by 17.2% over the next five years.



WASTE AS AN ENERGY SOURCE

JBS
Márcio Nappo
Director Sustainability
JBS SA

OPPORTUNITY: JBS is committed to minimizing environmental impacts by promoting initiatives to make production processes more efficient and sustainable. One of these initiatives was the reuse of rumination content, waste classified as non-hazardous, created by JBS' beef plants, for creating thermal energy by burning it in industrial boilers to produce heat and steam. Previously, even if environmentally safe for industrial landfills, the product created an environmental liability at high cost to the company. Therefore, JBS identified an opportunity to reuse this waste to produce energy and partially replace conventional fuels, such as fossil fuel or forest products, with renewable biomass.

SOLUTION: The process holds waste in a silo and transfers it to pressing equipment to reduce moisture. From there, the waste goes to the drying system that removes the remainder of humidity in the pressed rumination content. Then it goes to a furnace where it is burned to create steam. This waste represents the highest volume generated in a packing plant, approximately 25 kilograms per animal, or a total of 27,282 tons, based on four industrial units where the system was implemented. The gases created by the drying process are transferred to a gas treatment system, as standards require.

RESULTS: The waste previously required large areas for storage, even if transferred to industrial landfills. Now, it is efficiently reused within the same operation for partial generation of thermal energy in the boilers that operate JBS' industrial units. This project reduces consumption of forest products by approximately 20 to 30%, reduces greenhouse gas emissions, and reuses waste to create energy.



GREENHOUSE GAS REDUCTIONS THROUGH ROASTER PRE-HEAT

Mother PARKERS
Dennis Paynter
Vice President Coffee Operations
Mother Parkers Tea and Coffee Inc.

OPPORTUNITY: Coffee roasting is a high-energy activity. The endothermic stage roasts green coffee beans to an internal temperature of approximately 400°F. The exothermic stage produces gases that release heat energy. A “flashing off” process that removes organic volatiles and particulate matter increases this energy loss.

SOLUTION: Mother Parkers Tea and Coffee Inc. developed a system to divert hot, clean exhaust air through heat exchangers to pre-heat green coffee before roasting. Using recycled energy outside the roaster decreases primary energy requirements during the endothermic pre-roasting stage. Further, pre-heating beans to a pre-roast constant temperature increases consistency throughout the batch and evens out seasonal energy variations. This new pre-roasting process uses a pre-heat chamber that keeps the beans moving. A fan-driven air line from the top of the exhaust stack ensures environmentally clean air intake. Operators can regulate the fan according to the size of roast. A batch of beans enters the pre-heat chamber and hot air is used to heat the beans to between 190 and 200°F, enough to drive down moisture, but not enough to create any exothermic reactions or chemical changes within the bean. Once the beans reach the right temperature, they flow into the roaster where the actual roasting now takes less time. The exhaust stream from the pre-heat stage is still considered clean and is discharged back to the exhaust stream above the pre-heat intake. As a final step, catalytic converters are fitted in the exhaust array to drop the temperature requirements needed to flash noxious substances by approximately 1000°F.

RESULTS: The pre-heat system has decreased natural gas consumption by almost half, compared to gas consumption by a traditional drum roaster with no recycling, no pre-heating, and no catalytic converters, with a commensurate reduction in GHG emissions. Retrofitting four roasters and purchasing a fifth roaster has required a significant investment with some continual high input costs, such as catalytic converter renewals, but the impacts are just as significant. The figures show a dramatic improvement in energy consumption and GHG emissions and a reduction of thermal emissions. Roast quality is more consistent. The pre-heat phase has reduced roasting time by 15 to 20%. Processing beans through these pre-heat systems has reduced GHG emissions by 1 MTCO₂e per 2,720 kilograms of green beans processed in 2013. This is compared to 21,390 MTCO₂e for 2012. Finally, the results have created enthusiasm and ownership within Mother Parkers for extending sustainable practices throughout the operation.



SAVING THE PLANET, ONE BTU AT A TIME

Simplot
David Hines
Regional Unit Director
J. R. Simplot Company

OPPORTUNITY: Food production creates byproducts that have often been considered waste. At the J.R. Simplot potato processing plant in Moses Lake, Washington, the company addressed three challenges—reduce waste, improve the environment, and save energy—with an innovative solution.

SOLUTION: The team devised a multifaceted plan to save energy. Simplot takes two “waste” streams and blends them together in one of the only boilers in the country to burn a unique blend of biogas, hydrogen, and natural gas.

The first part is the conversion of potato waste into biogas. The plant's treated wastewater is sent to an anaerobic digester that is essentially a broad, shallow lagoon with a plastic cover. Underneath, microorganisms use potato waste as a food source, in turn generating biogas. Not wasting anything, the treated water is then used in irrigation, saving nearby farmers \$800,000 per year, and the potato starch from the process water is recovered and used in a polymerization process for paper manufacturing. Lastly, the solid matter left behind, called digestate, has an additional application as a fertilizer, which is another of the company's core businesses.


Simplot also partnered with a nearby company that was flaring hydrogen as a “waste” product and agreed to a mutually beneficial arrangement to utilize this clean energy source for fuel. As a result, biogas, hydrogen, and natural gas are burned in the processing plant's boilers to produce steam that is used in the process of making French fries and potato granules, and the cycle is renewed.

RESULTS: The facility reduced demand for natural gas by nearly 10% and credits for roughly 12,000 metric tons of carbon dioxide equivalent (MTCO₂e) are generated annually. Some of the savings include 275 billion BTUs of energy generated; 12,000 metric tons of CO₂ emission reduction; natural gas offset by biogas and hydrogen totaling \$1,005,000 annually; farmers' irrigation savings of \$800,000 (annually); carbon credit sales of \$300,000 to date.



ONE TO WATCH

REDUCING OUR FOOTPRINT BY GOING UNDERGROUND


 **Laura Vansant**
Sustainability Manager
The Coca-Cola Company

OPPORTUNITY: One of The Coca-Cola Company’s environmental goals is to reduce the carbon footprint of the “drink in your hand” 25% by 2020. To meet this goal, the company is constantly searching for solutions over its entire production process to reduce its carbon impact. Ninety percent of the Simply Juice brand sold in the U.S. is produced at the Main Street facility located in Auburndale, Florida. Cutrale, the company’s juice supplier, is located a short distance away from the plant. Tanker trucks transported the juice from Cutrale to the Main Street facility daily.

SOLUTION: Working with Cutrale, The Coca-Cola Company developed an innovative idea to reduce costs and environmental impacts: build a 1.2-mile pipeline between the two facilities. The pipeline, the first of its kind, was completed and received USDA approval in June 2011.

RESULTS: Once the juice started flowing between the two facilities, the pipeline eliminated the need for an average of 70 tanker trucks per day—providing cost savings and reducing the company’s carbon emissions by approximately 20 million metric tons per year. Putting fewer trucks on the road also reduces road wear and tear on community infrastructure. Other benefits include reductions in the labor-intensive processes for pumping the juice from the tanker, tanker maintenance, and plant downtime; and increased plant yields.

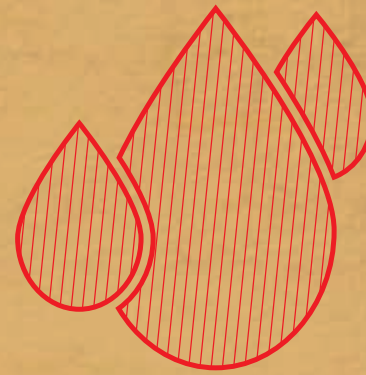
GREENER PRODUCTION WITH DAIRY FARMERS

 **Peter van Sprundel**
International Key Account Manager Global Accounts
FrieslandCampina

OPPORTUNITY: Dairy farms, production plants, and transportation account for a substantial volume of energy and greenhouse gas emissions. With 25 production plants in the Netherlands and 14,000 member dairy farms, FrieslandCampina has a major impact on energy consumption and CO₂ emissions in the Netherlands. FrieslandCampina wants to grow in a climate-neutral way by increasing production volume without raising—or even by reducing—energy consumption and CO₂ emissions. Approximately 70% of FrieslandCampina’s total energy consumption is attributable to its production plants and 30% to its member dairy farmers, both in the Netherlands and worldwide.

SOLUTION: Like McDonald’s sustainable supply chain vision, environment is key to FrieslandCampina’s strategy. FrieslandCampina focuses on making the whole value chain more sustainable, from grass to glass. By including and investing in member dairy farmers, FrieslandCampina enables its production plants to use renewable energy supplied by member dairy farmers. Targets include gaining 2% energy efficiency annually for climate-neutral growth; reducing greenhouse gases by producing renewable energy, such as wind, solar power, and biomass; and encouraging renewable energy by purchasing guarantees of origin to create green electricity.

RESULTS: By 2015, FrieslandCampina aims to be 100% reliant on renewable electricity, preferably produced by its own member dairy farmers. To encourage this, the company buys green certificates from member dairy farmers who produce green energy, for which they are paid a supplement on top of the standard energy price. Member dairy farmers who produce green energy offer this to partners or to FrieslandCampina directly. FrieslandCampina in turn sells this via guarantees of origin for which member dairy farmers receive a fixed premium that is higher than that available on the energy market. With this surplus, FrieslandCampina stimulates other dairy farmers to invest in green energy and encourages member dairy farmers to produce more green energy every year. Member dairy farmers can also apply for funding to help them invest in renewable energy production. In this way, FrieslandCampina provides energy audits and workshops for member farmers to help them better understand their energy use and how to save energy or use it more efficiently.




WATER

Suppliers may demonstrate best practices in the category of water by improving water use efficiency, reducing water pollution, engagement with the local watershed or the development of local water policy.



WATER STEWARDSHIP AND SUSTAINABILITY IN ACTION

 **Julia Seddon**
Group Environment and Sustainability Manager
Inghams Enterprises

OPPORTUNITY: Australia has experienced severe and prolonged drought in the last two decades. Inghams’ processing plants use up to 4.2 million liters of water daily. As a founding member of Water Stewardship Australia, Inghams wanted to objectively assess the risks of declining reliability of water supply and determine whether its water use could credibly be proven “fair” according to the standard.


SOLUTION: Inghams identified advanced water treatment technology as an option to reduce reliance on the local water supply and embarked on a program to build its first advanced water treatment plant (AWTP). The plant uses commercially available technology to transform wastewater from the processing plant into drinking water. The multi-barrier approach (sand filtration, membrane filtration, reverse osmosis, ultraviolet treatment, and chlorination) ensures the water complies with the Australian and New Zealand Drinking Water Guidelines. The AWTP reduced reliance on the water supply by more than 70% with no impact on product quality.


Inghams commissioned a second AWTP at a processing site in Victoria that is achieving similar results. The company worked with authorities to develop protocol and guidelines to regulate the use of purified water. The high energy demands of reverse osmosis are offset to some degree by energy efficiency initiatives, including using biogas and heat recovered from refrigeration for producing hot water.

RESULTS: Securing an alternative potable water supply has enabled the processing facilities to continue to increase production despite likely water shortages. The Queensland processing plant has been using advanced water since 2009, saving 545 million liters in the first year and now saving 755 million liters annually. The Victoria site has been in operation since 2012 and is expected to save 330 million liters in its first full year of operation. On average, 71% of potable water has been substituted with advanced water. In addition, the AWTP also increases water available for the community and other businesses, sends zero waste to landfill, reduces nutrient load to sewer and the environment, uses biogas to offset higher electricity use, and produces water at lower costs than the public supply. A biogas heat recovery system installed as part of the project uses previously collected and flared biogas to preheat hot water for the site. The AWTP removes approximately 150 metric tons per year of total nitrogen from the waste stream and transforms it into harmless nitrogen gas.



WATER REPLENISH

 **Susana Pliego**
Environment Manager
Coca-Cola Iberia

 **Malak Youssef**
McDonald's Key Account Manager
Coca-Cola Iberia

OPPORTUNITY: Water is the main ingredient in manufacturing soft drinks but in some areas of Spain, water is scarce. Coca-Cola Iberia has committed to conserving and supporting water projects in the communities where plants are located.


SOLUTION: In Coca-Cola manufacturing plants that produce syrup and fill the Bag-In-Box supplied to McDonald's, Coca-Cola has introduced Operational Excellence Programs to improve methodology and equipment modifications to reduce water consumed in cleaning and washing. Coca-Cola has also conducted Source Vulnerability Assessments every five years in communities in Spain and Portugal where plants operate to evaluate local water sources and risk factors affecting them. Coca-Cola Iberia is partnering with the University of Castellón and agriculture associations to return water to the community through local projects, such as recharging coastal aquifers.

Coca-Cola Iberia has joined national and global partners in conservation projects. With World Wildlife Fund (WWF), Coca-Cola is restoring forests, native plants and original habitats in the Guadiana River basin. In Tablas de Daimiel natural park Coca-Cola Iberia, WWF, and agricultural associations are restoring native species and forests, and developing electronic tools to manage agricultural water consumption. In the Albufera de Valencia region where rivers meet and discharge into the Mediterranean, the company works with SEO/Birdlife and the University of Valencia to improve water quality using green filters to reduce organic load, suspended solids, total nitrogen and turbidity. In addition, Coca-Cola Iberia helped restore a lagoon near the Besós River by maintaining the flow level with wastewater from its plant in Barcelona.

RESULTS: The volume of water recharged from wastewater treatment facilities into coastal aquifers is over 265,000 cubic meters, benefitting 2,000 people. The Guadiana River project has added 21,000 plants over 30 hectares and provided community education. The Tablas de Daimiel project works with more than 400 farmers to improve irrigation and save water. The project has introduced 10,000 native plants each year since 2011, created habitats for birds and fish, and increased landscape diversity. Already 60,000 people have benefited from this work. Green filters have improved water quality in Albufera de Valencia. The project has protected birds and the ecosystem in 40 hectares of land, and 16,000 people have visited the area since it opened in 2009. The Cataluña lagoon restoration project restores 11 million liters of water to the lagoon each year, and has registered amphibians, reptiles, almost 40 species of birds, and more than 130 species of plants.



DEDICATED WETLAND BUILD PROJECT

 **Charlie Coakley**
Group Environmental Sustainability Manager
Dawn Meats

OPPORTUNITY: Dawn Meats has been producing patties for Irish and European consumers since 1996. The company built a state-of-the-art patty processing facility in Waterford, Ireland in 2002 and added a separate dedicated facility for McDonald's in 2012, designed to improve sustainability. The trend over the last 100 years in constructing water pollution control facilities has been toward concrete and steel, but Dawn Meats developed an integrated constructed wetland (ICW) as a functional part of the wastewater treatment system. Both natural and constructed wetlands manage water quality by cleansing water through, physical, chemical, and biological processes.

SOLUTION: The ICW design is a unique integrated approach to water treatment using the ecology found in natural wetlands: water, soil, plants, and animals. The Dawn Meats ICW integrates water management by treating wastewater effluent within emergent vegetated areas; saves energy and reduces carbon in construction and running costs for water treatment using carbon sequestration; and enhances habitat diversity and wetland structure in the local landscape. The main water treatment processes include uptake and transformation of contaminants by micro-organisms and plants, chemical precipitation of contaminants, and absorption and ion exchange on the surface of plants and plant material. Dawn Meats also developed a seven-acre ecological park around the wetland.

RESULTS: The ICW has turned wastewater treatment into an environmental resource. Treating effluent from the facility has displaced carbon emissions by almost 200 metric tons, saving over \$34,000 (€25,000) per year. To facilitate efficient water treatment and biodiversity, plantings in the wetland and surrounding ecological park include native species of reeds, plants, trees, and shrubs which provide cover and food for small wildlife and increase the biodiversity of pollinating insects. The effluent treated by the wetland is discharged into the watercourse with very low biochemical parameters, lower than those in the receiving watercourse for a range of parameters and exceeding required local reductions.



INVESTMENTS IN WATER EFFICIENCY

 **Márcio Nappo**
Director Sustainability
JBS SA

OPPORTUNITY: Two years ago, JBS conducted an environmental study to determine where packing plants in Brazil needed improvement. The research led JBS to invest approximately \$20.6 million (R\$ 48 million) into more 270 projects related to waste management, effluent treatment, and greenhouse gas emissions. In addition, JBS planned to improve the efficiency of its water use and operations and install water and effluent monitoring equipment.


SOLUTION: As part of its policy of to use natural resources efficiently, JBS developed a system for technical teams to monitor the volume of water consumed in the production process and develop a water consumption profile of performance for each unit. The company has also developed measures to improve consumption, such as improving industrial processes and providing education and training to increase awareness of best practices and their environmental impacts.


RESULTS: To reduce water consumption in the industrial units, JBS replaced the water spray systems in the corrals that are used to maintain consistent temperature levels for animals. In addition to improving the well-being of the animals, the new system reduced water consumption from 700 liters per hour to 40 liters per hour (per part). Installing spray nozzles in industrial sinks reduced water consumption by 69%. Previously, water was used to remove the contents of animal rumen, but the company installed new equipment that uses less water. In addition, the company installed automated equipment and water is now reused in external operations. In 2012, projects to improve efficiency in water use reduced water consumption in 6%, representing savings of 1.8 trillion liters of water. Currently, all meatpacking units have water consumption goals relating to the production volumes.



CLOSING THE LOOP WITH INNOWATER

 **Cees van Rij**
Corporate Manager Environmental Affairs
Lamb Weston / Meijer

 **Huib Nagelkerke**
Environment Officer
plant Bergen op Zoom

 **Jolanda Soons-Dings**
Sr. Manager Regulatory Affairs & Sustainability

OPPORTUNITY: Lamb Weston / Meijer's (LW/M) objective for 2020 is to reduce by 50% direct water use per metric ton of finished product and to improve the quality of process water. The challenge is closing the loop on water and recovering valuable nutrients. The water currently used in LW/M plants is tap water supplied by local water companies. While onsite purification of process water is not currently urgent in countries where LW/M operates, the company is concerned about the scarcity and cost of water in the future. Therefore in 2008 LW/M began investigating ways to purify process wastewater onsite into clean drinking water for safe reuse in production.

SOLUTION: The team created Innowater (renewed water), a technology to purify process wastewater to drinking water standards and reuse it in manufacturing processes. The concept is based on existing technology, but integrates a complex system of process wastewater treatment that includes the recovery of valuable minerals at industrial scale. In cooperation with Ghent University, Brabant Water (local water supplier), Waterschap Brabantse Delta (local water authority), and others, in 2008, the company started a large pilot project at its Bergen op Zoom plant. Supported by a grant from the Dutch government—under the InnoWATOR scheme—the project demonstrated the technical feasibility of completely purifying process wastewater to high drinking water quality standards, as well as the economic feasibility for application at a 70% scale. The technology uses a membrane bioreactor to remove undissolved particles from the water; reverse osmosis removes the dissolved salts, and finally an ultraviolet filter guarantees food safety. LW/M's existing water treatment process simultaneously integrates the recovery of valuable minerals such as phosphorus. LW/M was the first food manufacturer to fully integrate these diverse complex technologies into its existing wastewater treatment installation.

RESULTS: LW/M closed the loop for both water and valuable minerals at an industrial scale. The treatment reduces direct water use by 10% (0.45 liter per kg finished product since 2011), reduces wastewater sludge and wastewater treatment chemicals by 40%, and fully eliminates the use of iron chloride. The process also reclaims 75% of phosphorus and nitrogen through Struvite, a natural fertilizer, while using less electricity and natural gas and producing more biogas. The plant currently uses the purified water as in-feed water for boilers and condensers, reducing by 90% the water needed to flush salts from this equipment. The installation has remained operational since the pilot was finished in 2011.



DRIVING SUSTAINABLE SUPPLY THROUGH REDUCED WATER USAGE



Dan Leger
Integrated Supply Chain, Director
McCain Foods Limited

OPPORTUNITY: South Africa is one of the countries for which a sustainable water supply is critical. In 2011, McCain Delmas had the highest water-to-product ratio for McDonald's Fries produced in the McCain group. This created both a commercial and an environmental imperative to address the issue. The objective was clear—reduce the amount of water used per kilogram of product produced. The strategy behind this initiative included reducing water used during the production process and eliminating wasted water going down the drain.

SOLUTION: McCain Delmas followed McCain Global's "Search for Pools" initiative and best practices by establishing a benchmark of water usage and developing an action plan to reduce use. Measuring water usage hourly was key to managing this critical and scarce resource. McCain Delmas staff repaired water valves and used check lists to stop all water leaks. Weekly meetings reviewed progress on all outstanding action items. The company implemented end-to-end communication programs to inform all employees about the project and the importance of saving water. This campaign used presentations, posters, training, and continual reinforcement in daily meetings. The initiative needed the support of both employees and cleaning suppliers to ensure full cooperation and commitment to reducing water consumption by 25% in the first year and another 25% in the second. McCain Delmas invested further capital to reduce water usage by cascading water from the blanchers to the de-skinners and recovering energy from the blancher water.

RESULTS: In 2011-2012, water usage declined by 36% and in 2012-2013 by an additional 15%. Over this two-year period, the water reduction program delivered approximately \$138,000 (R\$1.5 million ZAR) in savings to the Delmas plant, helping factory operations continue to offset inflationary input costs. Probably the single biggest economic impact was achieved by drilling two self-contained boreholes on the Delmas site. These boreholes reduced strain on the local municipal water system, while still paying usage rights to the municipality, a much-needed source of income for the community. In times of reduced water availability, self-contained boreholes ensure that the Delmas plant is not depriving any community members of water in their homes.



MOVING TO "ZERO"



Manjunath Patil
DGM - Supply Chain & McD Account
OSI Vista India

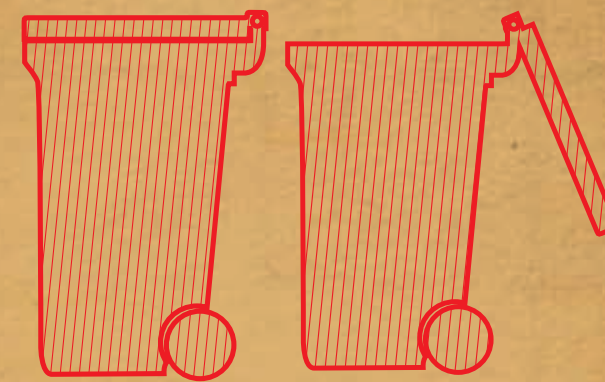


Gagandeep Singh
Plant Manager - North
OSI Vista India

OPPORTUNITY: Most of the river basins in India are experiencing moderate to severe water shortages, caused by agricultural growth, industrialization, and urbanization. Therefore, treated wastewater and low-quality water are emerging as potential water sources. Pagro Frozen Foods, a partner of Vista Foods, is a leading supplier of processed vegetables to Vista. Vista's value-added processing unit and the Pagro vegetable processing plant are adjacent to each other on the same premises. Washing vegetables during processing uses considerable water, but wash water containing vegetable and soil dirt was previously treated and disposed.

SOLUTION: Vista Foods has implemented an integrated wastewater treatment system that converts wastewater into potable water and recovers methane gas for green fuel. The wastewater treatment system uses gravity to channel discharge water from Vista's and Pagro's processing sections toward the wastewater plant. A flow meter continuously records the volume of water entering the plant, and water samples are taken continually to measure suspended solids and biological oxygen demand. The primary stage removes large particles and non-degradable objects and pumps sludge to the thickener, which further concentrates it before disposal. Then secondary treatment further reduces the suspended solids and biological oxygen demand. Anaerobic digestion occurs in the lagoon system, which holds the wastewater for several months. The wastewater lab and an off-site contract lab determine whether treated wastewater meets regulatory requirements. The composite wastewater treatment system has a daily capacity of 530 cubic meters of raw effluent. A built-in system can reuse 60% of water through reverse osmosis and ultrafiltration. The anaerobic digestion and lagoon treatment treats 80% of wastewater, produces almost no sludge, emits fewer odors, and uses no electric power. This system can handle the effluents from farm vegetable processing and production and requires little space.

RESULTS: Generation of natural methane gas for boilers reaches 800 cubic meters per day, equivalent to 500 liters of diesel. Using natural biogas reduced overall diesel consumption by almost 50%, saving 120 megawatt hours annually. Discharge water exceeds the biological oxygen demand levels for agricultural use set by the local government, and the facility is rated a "zero" discharge facility because 100% of discharge is used for watering. The company uses the minimal sludge produced in the treatment as manure for a tree plantation and the lawn.



WASTE

Best practices in the category of waste include those that promote reductions of waste in production, reductions of hazardous waste and reductions of waste to landfill. Innovations and best practices in the use of transport packaging technologies could also be included in this section.



ANIMAL WASTE REVERSE LOGISTICS PROJECT



Hugo Urso
Agricultural Corporate Manager
BRF S/A


OPPORTUNITY: BRF S/A is a global food company that partners with integrated growers to ensure quality and sustainability standards at the beginning of the production chain. To accomplish this, the company conducts activities to ensure the sustainability of the integrated farms, such as the reverse logistics project for animal health waste generated on integrated farms. Environmental standards classify this type of waste as dangerous and hazardous. BRF's Animal Waste Reverse Logistics Project seeks to promote environmental sustainability in the animal production chain through segregation, collection, transportation, treatment, and disposal of solid animal health waste from poultry and hog production.

SOLUTION: BRF designed a nationwide project designed to ensure that none of the integrated farmers burned waste and returned it to the environment. First, BRF trained animal suppliers in the waste separation process and provided containers to segregate waste in the fields. Brazil already had a procedure to segregate human health waste, but the process was not used in animal production, so the company decided to apply it to animal health waste as well, since the use of products for animal health care existed. In partnership with a waste collection and treatment company, BRF determined the procedure to remove separated waste and transport it to an animal waste treatment facility that follows Brazilian environmental legislation and other legal procedures. The project addresses a public health and environmental issue by removing hazardous solid waste and protecting against potential environmental degradation and human health risks.

RESULTS: Since the project began in 2009, it has collected and treated 1,500 tons of animal health waste. BRF trained approximately 15,000 farmers to separate waste and trained field technicians to monitor the procedure. The project has been requested by the Brazilian Environmental Legal Department for all farmers, along with the practice of animal health treatment in farmers' environmental licenses. BRF is considered a pioneer in implementing reverse logistics in animal health waste. By providing an alternative treatment for waste that was previously burned, BRF is promoting better air, soil and water quality, and a better quality of life for integrated producers, while developing biosecurity and sustainability in the agricultural production chain.



USE OF FLOAT SLUDGE AS ALTERNATIVE FUEL FOR STEAM GENERATION

 **Evandro José Hister**
Facility Manager
BRF S/A


OPPORTUNITY: The effluent generated by food manufacturing in the Rio Verde plant is treated using a flotation system to remove part of the organic load by adding chemicals, creating floating sludge. This sludge is a waste product that has high fat and calorie content that may make it useful in other processes, such as fuel for steam generation.

SOLUTION: With the possibility of using floating sludge as an alternative fuel to generate steam, experts from the Rio Verde plant developed a project that adapted the existing system to burn this new fuel to create steam. In the process, the sludge passes through a dehydration system that reduces the moisture content and thus the volume of the material, making it easier to store and use as boiler feed. To be used as fuel, the sludge is mixed with wood chips in a ratio of 4 to 1.

RESULTS: This project developed at the Rio Verde plant cut costs significantly by reducing the volume of wood chips required to generate steam. Beyond financial gains, the process also ensures constant fuel quality and generated steam while using waste for a beneficial purpose. BRF is committed to reducing the effects of climate change by creating renewable energy sources, such as the one developed by the Rio Verde plant in this initiative. Another benefit is recycling waste generated by food manufacturing, which in turn reduces the environmental impacts of the company's operations. Other plants are now developing similar projects in their operations. This initiative saves approximately \$687,000 per year by reducing the use of wood chips.



ZERO WASTE CHAMPION AWARD PROGRAM

 **Marcella Thompson**
Director Sustainability
ConAgra Foods

OPPORTUNITY: Nearly all solid waste generated at ConAgra Foods manufacturing facilities consists of food and packaging materials, which are actually byproducts rather than waste. In 2010, ConAgra set a goal to extend the useful life of these materials by diverting at least 75% of waste from landfills by 2015. The company developed a program to recognize facilities that reach significant zero waste goals and incentivize others to work toward them as well.


SOLUTION: In 2011, ConAgra Foods established the "Zero Waste Champion" award program, earned by facilities that have diverted at least 95% of solid waste from landfills during the fiscal year and that strive to further reduce waste through process modifications and diversion of materials for beneficial reuse. Zero Waste Champions receive a plaque, polo shirts for their Green Team, a banner to hang at their facility, and recognition in the annual Citizenship Report. All other facilities have voluntarily decided to make achieving Zero Waste Champion status a goal. To raise awareness, ConAgra put in place rigorous systems to track landfill and material diversion data from all facilities. The company then provided quarterly reports to leadership on progress towards site-specific landfill diversion goals, reviewing landfill diversion with other performance metrics. To categorize materials, the company began using more than 15 descriptive categories aligned with the U.S. Environmental Protection Agency's Waste Reduction Model. This tool aids understanding of the life cycle greenhouse gas emissions associated with managing these materials, and helps quantify the benefits of finding the highest-value home for them outside of landfills.

RESULTS: The impact of the Zero Waste Champion Award program has been significant. In 2013, ConAgra Foods had 21 Zero Waste Champion facilities, nearly doubling the number of locations that earned the award when the program was launched in 2011. Because many of these locations are among the largest in ConAgra Foods' portfolio, they account for more than 80% of ConAgra Foods' total waste generated, diverting more than 940,000 tons of waste from the landfill. This program has driven ConAgra Foods to divert more than 93% of solid waste from landfills to beneficial uses such as recycling, donating food to the hungry, using as animal feed, generating energy, or amending soil. Applying the EPA model, ConAgra Foods estimates Scope 3 greenhouse gas emissions associated with sending waste materials to landfills to be 12,526 metric tons for 2013. Diverting 93% of waste materials from landfill avoided 50,490 metric tons of Scope 3 greenhouse gas emissions.



MAKING A BIG DIFFERENCE THROUGH BRINE WASTE REDUCTION

 **Andrew Wiltshire**
Environment Manager
DonKRC, a Division of George Weston Foods Limited

 **Alan Parsons**
Environment Coordinator
DonKRC, a Division of George Weston Foods Limited

OPPORTUNITY: Ham, bacon, and small goods manufacturing operations at the Castlemaine site require large volumes of pickle and brine. Pickle is a key ingredient for both taste and preservation, while brine is used to cool product in one of the process lines. On average, the site disposes of 225,000 kilograms of pickle and brine waste monthly. Due to the location of the production facility and the potential impact on the local wastewater treatment plant, the pickle and brine waste cannot be disposed of via the existing trade waste system. As a result, the waste is trucked offsite.


The company identified the opportunity to significantly reduce the tonnage of pickle and brine waste. To enable this, a project team was assembled with area managers, members of the manufacturing team, and technical and operation experts, and was led by the environment department with the full support of site management. The team's objective was to reduce brine and pickle waste by 44,000 kilograms per month.

SOLUTION: After investigating the entire process flow, three key areas were identified where improvements or modification resulted in significant reductions: pickle storage, drainage, and serpentine cooling (used to chill ham slicing products). Pickle batches must be used within four days; if not used, the batch must be disposed of. The storage and reuse system was streamlined to ensure that extra batches were not produced when already in stock. A first-in-first-out system was also adopted. The ham and bacon manufacturing areas have dedicated high salt drains to efficiently dispose of the brine waste and segregate the brine waste from the existing trade waste. One high salt drain was damaged and several caps over unused salt system lines were also damaged, allowing wash down water to enter the high salt drains. These were repaired, preventing the unwanted flow. Investigations determined that condensation from the cooking section was carrying over into the cooling section, diluting the brine and causing an overflow of the brine tank that caused the brine to be disposed of as waste. Ventilation was added between the cook and chill sections allowing the condensate to escape and solving the problem.

RESULTS: Improvements have reduced pickle waste from 225,000 kilograms to a monthly average of 78,000 kilograms, an average reduction of 147,000 kilograms—almost four times the original target. The end result was a 65% reduction of an unusable waste product. The improvements have also increased production efficiencies; less pickle and brine is produced and handling the product is reduced.



WASTE DIVERSION CREATES ENVIRONMENTAL AND COST BENEFITS

 **Sarah Beaubien**
Director of Sustainability
Farmer Brothers Coffee, Tea, and Spices

 **Patrick Mitchell**
Director of Operations
Farmer Brothers Coffee, Tea, and Spices

 **Kevin Chee**
Senior Inventory Control Manager

OPPORTUNITY: Farmer Brothers estimated it was sending approximately 50% to 75% of its waste to landfills depending on municipality. With input from a cross-functional collaboration team and employee surveys, Farmer Brothers decided that a recycling and composting program would divert recyclable and compostable waste from the landfill and reduce carbon and methane gases that contribute to climate change. Eliminating products going into the landfill can also save money by reducing associated fuel use.

SOLUTION: Farmer Brothers' goal is to have zero waste going to the landfill by the end of 2015. The zero-waste-to-landfill program has three phases and multiple sites. At all facilities, the company is characterizing waste, analyzing recyclability/compostability, establishing color-coded sorting stations, creating community partnerships for new repurposing destinies, providing ongoing employee training, developing "Trash Talk" ambassadors to create a cultural shift, and developing strong systems for monitoring and evaluation.

RESULTS: In Phase 1 within the first year, Farmer Brothers reduced waste sent to the landfill by finding better destinations for some of the organic waste. Most of this included the more than 100,000 burlap bags in which green coffee is shipped. The burlap has been repurposed for many things: weed control in reclamation projects, harvesting fruits and vegetables by local farmers, beach clean-ups, bag-and-burlap for tree plantings, and others. Now, the company has a waiting list for the bags. Farmer Brothers saw similar success with flavoring containers, pallets, and totes. One dock in the Columbia River is made almost exclusively from flavoring containers and the company found a new destination for coffee chaff (the skin on coffee). Nearly 11 metric tons (24,000 pounds) per month provides a critical component for natural fertilizer production.

Finally, Farmer Brothers created a partnership that sends all waste coffee to another organization to be blended into coffee for prisons. The one major material preventing zero-waste-to-landfill in Phase 1 was flexible packaging film. Farmer Brothers has recently partnered with an organization that recycles this metalized plastic into industrial durables such as composite wood-like products. In Phase 2 starting in 2012, Farmer Brothers began scaling the Portland program to the company's two other roasteries and to the largest distribution centers. Although complete data is not yet available, this program has resulted in a similar waste ratio shift as in Phase 1.



ZERO WASTE TO LANDFILL



Sue Harris
Vice-President of Regulatory Affairs, Quality & Food Safety
Peterson Farms Inc.

OPPORTUNITY: In 2010 the Peterson Farms Inc. (PFI) leadership team assembled to evaluate the recycling program for improvement opportunities and discovered that the company was, despite all efforts, still sending a significant amount of waste to the landfill. The waste management program consisted of recycling paper, cardboard, steel, and plastic; however, a large amount of additional material was still being regarded as garbage. The team determined that recycling had included material that could have been reused, such as steel, and saw an opportunity to grow the sustainability initiative at PFI and to engage the employees in the process, ultimately supporting the business.

SOLUTION: Team members decided to investigate the concept of zero waste to landfill and its applicability to PFI. They decided that, while difficult, zero waste to landfill was achievable and determined to begin the project immediately with a completion goal of 2015. To learn about the resources needed and how other organizations had achieved this goal, the team attended several conferences as well as the “Zero Waste to Landfill Challenge” at Subaru of America in Indiana. The project began by engaging employees and empowering them to take ownership of the project at their respective facilities. Project leaders created Conservation Corp teams, which met on a monthly basis to review opportunities for improvement, and partnerships with external agencies, such as Padnos, a full-service recycling company. These partnerships and the internal Conservation Corp teams helped PFI begin identifying waste streams through “dumpster diving.” Teams evaluated each item to determine whether it could be reused, reduced, or recycled, and researched how to deal with each waste stream in a sustainable and fiscally responsible manner.

RESULTS: PFI was able to achieve zero waste to landfill in November 2012, three years ahead of schedule. During that time, waste weight decreased from 1,141 metric tons in 2010 to 888 metric tons in 2012, and recycling weight increased from 1,270 metric tons in 2010 to 5,171 metric tons in 2012. In 2013, waste weight dropped to zero. In addition, the revenue created from the recycling efforts increased from \$307,000 in 2010 to \$485,000 in 2012.



LAND AND BIODIVERSITY

Efforts in the land category include initiatives that contribute to improving soil fertility, reducing soil contamination, promoting responsible use of agrochemicals and supporting the protection of eco-systems and biodiversity. Initiatives may also include holistic sustainable agricultural initiatives addressing multiple environmental, ethical and economic issues.



RESEARCH AND DEVELOPMENT OF INNOVATIVE TRAWLING EQUIPMENT TO PRESERVE MARINE BIODIVERSITY

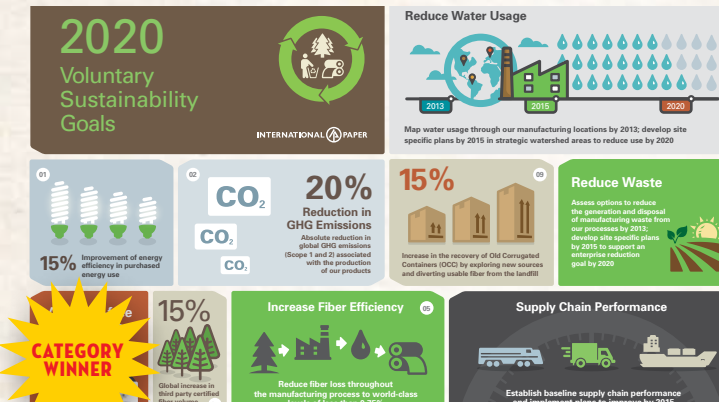


Alex Olsen
Head of Sustainability
Espersen A/S

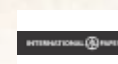
OPPORTUNITY: Modern consumers are concerned not only about the quality of the fish they eat, but also about the environmental impact of commercial fishing and the quality of life of the people who depend on the industry for a living. Concerns about fishing by bottom trawling relate to its disruption of animal and plant life on the seabed, resulting in a loss of marine biodiversity, which impairs the ocean's capacity to provide food. Also, due to rising fuel costs, the fuel used to drag heavy bottom trawls often represents 50% of total operating costs, threatening the profitability of entire fishing operations. In addition, 60 to 80% of carbon emissions for frozen fish products are generated by fishing activities.

SOLUTION: Espersen's Trawler Gear Technology Program addresses issues related to bottom trawling, including minimizing the impact of fishing on the marine environment, ensuring the selection of target species while considering fish handling, and driving the development of fuel-efficient gear design. In 2011, Espersen partnered with fishermen, scientists, and gear designers in a project using the latest technology to design trawler gear and investigate the effects on marine biodiversity, catch, and fuel efficiency. The project completely re-engineered traditional trawler gear by developing new trawl doors, replacing wires with ropes, and investing in new netting material and design.

RESULTS: The new trawler doors reduce the impact on plant and animal life on the seabed while reducing the drag by 40%. The new Dyneema ropes are more expensive than steel wires, but are predicted to last five years, compared to steel wires that need replacing every year. The ropes are also easier to handle and safer for fishermen. The newly developed nets are larger and improve selectivity and quality of catch. In fact, catch per trawling hour was increased by 20%, reducing fuel consumption, costs and emissions. With an economic lifetime of five years, return on investment is expected to exceed 300%. This leading industry initiative has benefits that address economic, environmental, and ethical areas of sustainability, reducing environmental impact and energy fuel usage and ultimately increasing profitability of the marine fishing industry. In 2014, Espersen will roll out this initiative beginning with one vessel.



EDUCATION, COLLABORATION, AND CERTIFICATION FOR SUSTAINABLE FORESTS



Jeremy Poirier
West Region Fiber Certification Manager
International Paper

OPPORTUNITY: International Paper (IP) purchases 90% of its wood fiber supply from private and often small, family-owned forests. These landowners can be reluctant to take on the cost of certifying their property to sourcing standards. While IP ensures all fiber meets third-party chain-of-custody sourcing standards from the Sustainable Forestry Initiative® (SFI®) and Programme for the Endorsement of Forest Certification (PEFC), the company began exploring ways to increase supplier participation in other certification programs such as Forest Stewardship Council™ (FSC®).

SOLUTION: IP initiated a comprehensive approach to increase the amount of certified fiber used in packaging products through a grassroots outreach program aimed at certifying the lands of the small, non-industrial, private landowners and industrial suppliers who provide fiber in the United States. IP formed the Certified Forest Management LLC, run by its fiber supply team, to educate landowners about the benefits of certification, provide resources, shoulder the cost, and provide incentives for fiber purchases from certified lands.

IP joined the National Fish and Wildlife Foundation (NFWF) on a five-year, \$7.5 million program to support forestland restoration and working forests in coastal North and South Carolina; the Cumberland Plateau in Kentucky, Tennessee, Alabama, and Georgia; and the Piney Woods of Texas and Louisiana. IP also joined the World Wildlife Fund's (WWF) Global Forest and Trade Network working to eliminate illegal logging and drive responsible forest management.

RESULTS: Over the past year, IP's Certified Forest Management, LLC, directly enrolled and maintained FSC forest management certification for 51 private landowners in six states, increasing certified lands by approximately 60,000 acres. Since the program's inception in 2012, IP's Certified Forest Management, LLC, has enrolled and maintained FSC forest certification for 92 private landowners in seven states, increasing certified lands by approximately 104,500 acres. Increasing certified lands helped IP achieve a 25% increase in certified fiber use in its coated paperboard manufacturing system, as well as provide McDonald's with packaging products that meet the SFI Chain of Custody Standard. In the United States, IP has increased sourcing of FSC-certified fiber by more than 1.2 million tons over the past five years and expects to triple that increase by the end of 2014.



IMPROVED CORN GROWING PRACTICES IN CHINA

Jody Longshore
Director, Corporate Responsibility
Cargill

Cissy Wang
Business Process Manager
Coca-Cola Bottling Investments Group China

OPPORTUNITY: Jilin Province, located in the Amur Heilong River Basin, is a priority eco-region for WWF because it provides a home to the endangered Amur tiger and Amur leopard as well as the Siberian crane and other endangered crane species. Songyuan in Jilin province is one of the largest corn-growing areas in China, producing around 17 million metric tons of corn per year. Songyuan City is adjacent to the Songhua River, the Amur Heilong's largest tributary. Despite total production figures, corn yields are not reaching their full potential and input inefficiencies are high, resulting in excess water use, poor water quality, runoff, and GHG emissions.

SOLUTION: To improve corn production, mitigate its environmental impacts, and improve food security in China, Cargill is working with The Coca-Cola Company and WWF in Northeast China's Songyuan, Jilin province. The project, started as a five-year plan in early 2012, established 10 demonstration farms in Songyuan to highlight sustainable agricultural practices for planting, tilling, harvesting, storage, and selling. Through farmer education and training at these demonstration farms and additional farmer outreach, the project will reach 25,000 farmers by the end of 2014. Specific goals include improving yields by 20%, reducing harvest and post-harvest waste by 10 to 15%, conserving water, and reducing overall environmental impacts of farming in Songyuan.

RESULTS: In 2012, after the first year of implementation, the project had increased yields by 28% on its demonstration farms—exceeding the goal of 20%. Improved corn storage after harvesting has increased the crop's value by more than 10%. To date, more than 17,000 local farmers have received free training on advanced corn planting technology provided by the project. Another 20 demonstration sites were selected for 2013, with yields increasing by 38.8% and fertilizer efficiency improving by 33.9% on average over the past four years.



BACTERIA FIXING ATMOSPHERIC NITROGEN FOR WHEAT CROPS

Tommaso DeMarco
Vice President of East Balt Europe
East Balt Europe

OPPORTUNITY: McDonald's bakeries need high-protein wheat flour to produce good, consistent quality buns. Wheat needs fertilizer with nitrogen to produce enough quality protein. East Balt supply chain carbon footprint studies and life cycle assessments show that the nitrogen fertilization of wheat accounts for around 80% of greenhouse gas emissions associated with East Balt farms and 60% of the GHG emissions in the East Balt supply chain from farm to restaurant come from wheat cultivation.

Because McDonald's is committed to reducing GHG emissions in its supply chains, East Balt wanted to determine what could be done to reduce nitrogen emissions. The atmosphere contains 78% nitrogen as an inert gas (N₂) that is not available to plants. East Balt considered using bacteria that can capture atmospheric nitrogen for the wheat. The product selected (TWIN N) was a microbial freeze-dried formulation containing a selected mix of aerobic and endophytic microbes (Azorhizobium sp., Azoarcus sp. and Azospirillum sp.), to make atmospheric nitrogen available to plants.

SOLUTION: TWIN N, when applied to leaves at a rate of 4 grams per hectare, can enter the plant through the stomata on the leaf surface or via lateral root cracks and replace 35 to 40% of chemical urea or nitrates distributed on the soil. This innovative product not only helps to reduce the carbon footprint, but can also reduce fertilizer leaching into soil and water.

TWIN N is a cost-effective solution compared with bulk fertilizers and can also increase yields and protein content. Although nitrogen-fixing bacteria are endemic in most soils, they usually represent a very small percentage of the total microbial population that can fix atmospheric nitrogen and are often strains with low activity and performance. This product uses carbon as an energy source to power the biological reaction converting nitrogen gas into nitrogen compounds available for the plants. The amount of nitrogen used by plants is actually controlled by the plants themselves, based on soil conditions, so they get only the nitrogen that they need. This product represents a breakthrough in agricultural technology by improving the viability and sustainability of high-production farming. It is certified and suitable for use on both conventional and organic farming by NASSA and BFA in Australia, OMRI in the U.S., and in other countries.

RESULTS: Several years of applications on wheat in Europe, Africa, Australia and the United States showed on average the opportunity to reduce the total nitrogen chemical fertilizer in the soil by 40%. This resulted in a yield increase of 4% in France (2013) and 10% in Italy (2010 to 2013), along with a reduction in GHG emissions.

The experiment will be repeated on the next crop and the protocol optimized to find the best conditions for achieving improved yield, increased protein content and reductions in GHG emissions.



REDUCTION OF CHEMICAL PESTICIDES AND INORGANIC FERTILIZERS

José M. Garrido
Quality and Sustainable Development Director
Florette Spain

OPPORTUNITY: Crop protection products are necessary to shield plants from damage caused by weeds, diseases, and insects. In addition to their impact on human health, chemical pesticides raise various concerns. Inorganic fertilizers, especially nitrates, can cause problems for natural habitats and for human health, including groundwater pollution, contamination with impurities, soil acidification, trace mineral depletion, high energy consumption, impact on micorrizas, and contributions to climate change.

SOLUTION: Florette has adopted several measures to control pests, diseases, and weeds in crops. The company manages irrigation by spacing treatments to provide enough moisture for the roots but keep the plants dry to avoid unnecessary fungicide treatments. Florette also uses products with "zero residue" instead of traditional chemical insecticides and fungicides to avoid waste and protect other fauna. Calibrated and well-maintained precision treatment equipment increases product effectiveness and eliminates extra liquid. The company uses pheromone traps to evaluate the risk of caterpillars, and only uses pesticides when strictly necessary. Pest mass capture trials designed to control caterpillars and minimize pesticide treatments are ongoing. Florette adapts the sowing/planting density of the crops to current climate conditions for the best treatment and control and protects enemies of insects for natural control and to maintain biodiversity.

Instead of traditional chemical fertilization, Florette uses 100% organic compost made from animal waste for bottom fertilization. This compost poses no food safety risk because all seeds, bacteria, and micro-organisms die in the composting process. Florette has a documented nutrients management policy in place to reduce use of inorganic nitrogen fertilizers. The company uses a technique to analyze nitrates in soil and on products to determine fertilizer use.

RESULTS: This process has allowed the company to reduce nitrogenized fertilizer consumption, thus reducing environmental contamination, levels of nitrogen in the product, and costs, and has also significantly reduced chemical pesticide use.



DOING MORE WITH LESS IN DAIRY

Jack Holden
Sustainability Manager
APMEA

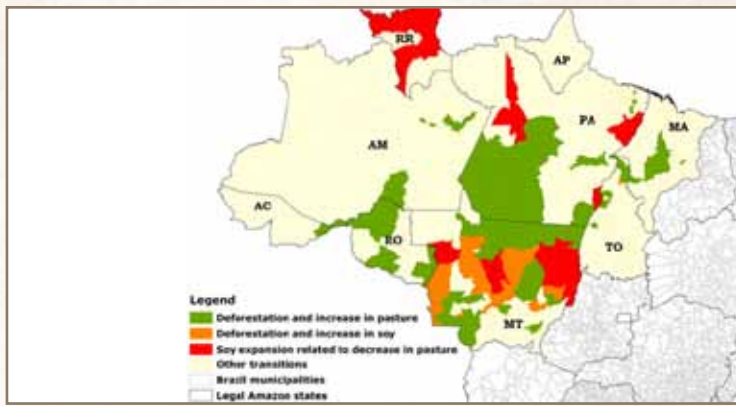
David James
Environment Manager

Belinda Smale
Key Account Manager
McDonald's

OPPORTUNITY: Fonterra, a dairy farm cooperative that sources milk from around 1,200 farms in Australia and over 10,000 in New Zealand, promotes farm efficiency, including applying fertilizer and/or manure to grow better pastures and reduce nutrient runoff and greenhouse gas emissions. Most Fonterra dairy farms use electricity from a coal-fired grid as the primary source for heating wash water and pumping and chilling milk, so any energy savings significantly reduces greenhouse gas emissions. Energy analysis suggests the average farm can reduce energy-related emissions in dairy sheds by more than 10%. Surveys indicate that rising energy and fertilizer costs are two of farmers' biggest concerns. However, farmers often do not have the skills, tools or experience to identify low-cost efficiency opportunities. Fonterra Australia saw a way to provide these skills at reduced cost and low risk and help farmers reduce their costs, increase milk production, and protect air, water, and soil.

SOLUTION: Using targeted marketing, Fonterra is offering services to farmers. The company screens interested farmers to identify eligible farms that comply with all environmental requirements. An energy or nutrient planning specialist visits the eligible farm to identify the "leaks" and determine customized viable solutions. This program encourages farmers already practicing fundamentals to undertake more innovative projects, such as distributing effluent on land that was not irrigated to reduce fertilizer demand. Other projects included automating irrigation shut-offs and water reuse systems.

RESULTS: By early 2014, 137 farm projects were completed and 98 were in progress. Fonterra funded the initial stages of the "doing more with less" project, but the program is now resourced to identify opportunities from 260 farm projects on at least 220 separate farms, involving more than 20% of the Australian Fonterra farm base. On average, Fonterra's fertilizer and nutrient efficiency projects are estimated to reduce fertilizer-related emissions on each farm by 15% while lowering risks for reduced water quality in surrounding waterways. Program data also suggest that effluent can be applied to an additional 728 hectares that previously needed artificial fertilizers. The average energy efficiency project will reduce electricity-related emissions by 10%. Upon full project implementation, the average financial gain is estimated to be \$7,100 (\$AUD 8,000) per farm for fertilizer and nutrient efficiency projects and \$1,790 (\$AUD 2,000) per farm for energy-related projects. Farmers can choose to take this dividend as increased production, reduced costs, or both.



PALM OIL, SOY OIL, AND SUGAR FROM SUSTAINABLE SOURCES

Unilever Food Solutions
Inspiração todo dia
Joaquín Jimenez
 Marketing Manager
 Unilever Food Solutions

OPPORTUNITY: The growth of the food service industry in Brazil has led to consumer concerns about the sources of raw materials and the quality of ingredients in restaurant food. Do food ingredients come from sustainable sources? What about environmental, workforce, and fair trade issues in food production? Do industries providing ingredients to restaurants produce them in a socially and environmentally responsible way? And, do food providers use sustainable methods of waste treatment? More and more, consumers are asking these questions and demanding that restaurants and their suppliers follow sustainable practices.

SOLUTION: To address these concerns, in 2013, Unilever Brazil bought credits equivalent to 100% of palm oil and soy volumes, in order to support sustainable initiatives and address the agenda of the Unilever Global Sustainable Living Plan. Soy oil is an important ingredient in McDonald's sauces produced by Unilever Food Solutions and is also a source of the highest quality vegetable fat. In addition to soy oil, Unilever Food Solutions uses sugar in mayonnaise and McDonald's Big Mac, Big Tasty, and tartar sauces. In 2012, Unilever Brazil was the first company in the world to buy credits of sustainably produced sugar from a global network called Bonsucro, which supports production of sugar following environmentally and socially sustainable practices.

In addition, as of 2013, all Unilever Brazil factories had joined the Zero Wastage protocol. Zero Wastage means that 100% of waste is processed sustainably. Recyclable packs are sent to recycling stations, organic waste is sent to compost stations, and other waste is sent to co-processing industries.

RESULTS: Given that Unilever purchases about 1% of the soy in the world, the company's initiative to support sustainable soy production has a beneficial impact globally. In 2012, Unilever Brazil bought credits of soy equivalent to 95% of its soybean volume and used 1,050 metric tons of soy to produce McDonald's sauces, an amount equivalent to 2,396* hectares of protected, sustainable soy plantations (an estimate based on USDA soy productivity information for 2012-2013, as reported by the Brazilian Agricultural Ministry). In 2012, Unilever Brazil purchased about 3,200 metric tons of sugar credits from Bonsucro, and until 2016, 100% of the sugar used by Unilever will be sourced by certified suppliers—a total of more than 40,000 tons. In addition, between 2008 and 2012, Unilever also achieved a 30% reduction in water usage during production processes.



IMPROVING VEGETABLE PRODUCTION WITH FARMER ENGAGEMENT

OSI
Neeraj Kumar
 Sr. Manager - Supply Chain
 OSI Vista India

OSI
Manjunath Patil
 DGM - Supply Chain & McD Account
 OSI Vista India

OPPORTUNITY: In India, recent reports suggest a declining trend in rice and wheat production due to reduced soil nutrients. Inappropriate fertilizer application and declining soil organic content have created soil imbalances and raised environmental costs, so farmers must continually monitor nutrients. Regardless of location or size, all Vista farms are prone to soil degradation from erosion, poor crop productivity, and higher use of chemical fertilizers.

SOLUTION: Vista OSI is leading an effort to educate vegetable growers-suppliers across India to help them maintain soil fertility and productivity. Vista has developed integrated crop husbandry practices, encouraging crop rotation and fallowing. In some locations, vegetables are an intercrop grown between perennial fruit crops like apples to conserve nutrients and add organic matter to the soil. Farmers have modified cultivation to suit the geography and climate. Micronutrient companies and university labs have helped provide training sessions for farmers in Integrated Nutrient Management (INM). INM maps soil nutrients for villages to identify soil pH and deficiencies and has developed a nutrient application program for major and micronutrients throughout the crop cycle, as well as micronutrient kits suited to individual farmers and one crop cycle. Farmers are applying farmyard manure, chemical fertilizers, bio-fertilizers, vermi-compost, and green manure and are using soil reclamation practices to maintain neutral pH. Vista OSI is helping farmers comply with chemical residue standards, use environmentally safe chemicals, and avoid banned chemicals.

RESULTS: Vista supplier farms are increasing their use of organic manures, vermi-compost, micronutrients and bio-fertilizers to consistently improve in productivity and product quality, such as freshness and extended shelf life. Yield has increased by about 25% in the last three years. Village soil nutrient mapping has helped farmers make sustainability decisions about reclaiming soil and discontinuing cultivation of some crops. Nutrient kits are helping growers follow recommended doses of fertilizer/micronutrient application based on soil analysis. Growers are rotating crops and inter-cropping with perennial fruit crops for improved soil productivity and developing a diverse income by reducing dependence on one crop. Further, farmers are accepting the necessary expense of soil nutrient supplementation and have saved 3 to 5% on production costs.



ONE TO WATCH

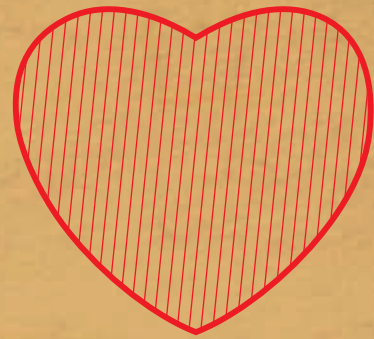
WATER REPLENISHMENT THROUGH AGRICULTURAL PRACTICES

The Coca-Cola Company
Laura Vansant
 Sustainability Manager
 The Coca-Cola Company

OPPORTUNITY: The Coca-Cola system (the company and its bottling partners) has committed to safely return to communities and nature an amount of water equivalent to what it uses in its beverages and their production. Working with farmers to implement sustainable agriculture practices is a valuable and effective way to return water to nature.

SOLUTION: Beginning in 2009, The Coca-Cola Company has collaborated with World Wildlife Fund, The Nature Conservancy, Field to Market, and the Van Buren Conservation District (VBCD) to promote better farming management practices (BMPs) in Michigan's Paw Paw watershed. VBCD recruits farmers to use better management practices such as cover crops, filter strips, and conservation tillage. The project's goals include reducing runoff, recharging groundwater, and decreasing sediment erosion at participating farms; evaluating the environmental impact of at least 50 corn producers by comparing conservation farming with conventional farming for two growing seasons; and introducing the Fieldprint Calculator to improve natural resource management and financial return for growers. To encourage conservation tillage, Coca-Cola purchased a John Deere 1750 no-till planter for the VBCD to rent to farmers. VBCD is also using the Field to Market Fieldprint Calculator. This tool can help farmers assess the impact of farm management on land use, energy use, irrigation water use, soil conservation, soil carbon, water quality runoff, and GHG emissions. The calculator provides instant, anonymous comparisons of a farm's environmental impact at the county, state, and national level. Further analysis can compare data farm-to-farm and by watershed.

RESULTS: To date, VBCD has used the Fieldprint Calculator with 51 farmers and administers two grant programs. The Sediment Reduction Grant (funded by Southwest Michigan Planning Commission and Great Lakes Commission) promotes keeping soil on farmland using BMPs such as reduced-till, no-till, filter strips, and cover crops. The grant kept 575 tons of soil out of water bodies and provides farmers a cost-share program allowing them to negotiate the cost of newly implemented practices. The Groundwater Recharge Grant (funded by The Nature Conservancy and The Coca-Cola Company) promotes BMPs to improve soil health and water recharge. The grant repays cost share money to growers who implement new reduced-till, no-till, and filter strips on grain land and has supported recharging more than 511,000 cubic meters (135 million gallons) of water back into the aquifer. VBCD-supported conservation farming practices in the Paw Paw River watershed have resulted in reduced tillage on 426 acres, no-till on 680 acres, filter strips on 20 acres, cover crop on 691.5 acres, and grass waterway on 3.5 acres.




HUMAN HEALTH AND WELFARE

Human health and welfare concerns the rights of women and men to obtain decent and productive work in conditions of freedom, equity, security and dignity so that economic growth provides benefits to all. With respect to employees, it also covers specifics such as wages and benefits complying with local/national legislation. However, for all persons it is broader, extending to access to potable water as well as sanitary housing, transportation infrastructures and services, etc. and the use of appropriately aged labor. Best practices go beyond the basic obligations of law and McDonald's Supplier Code of Conduct to demonstrate proactive support of employee and personal wellbeing.



CATEGORY WINNER

GROWING TOGETHER: A COMPANY AND ITS EMPLOYEES

 **Gabriela Gonzalez**
Human Resources Manager
Axionlog Cold Solutions

OPPORTUNITY: Until 2012, Axionlog had a very high rate of turnover due to resignations, compared to other companies. In addition, many Axionlog employees have not completed high school and do not have the time or flexibility to finish high school while employed.

SOLUTION: Axionlog Cold Solutions is offering employees who have not completed high school the Growing Together "School for Adults" program, with flexible schedules and tutors who provide guidance, at no cost. Students can take two classes every two months. In Axionlog's training room, students attend regularly scheduled weekly tutorial classes, two hours per week per subject, with tutors available to answer questions. These tutorials also allow students to meet with other students, share experiences, and participate in working groups. Capacitare, a school for adults, directs the program and supervises exams, while Axionlog tracks and supports students in the program and provides guidance as needed. Students with no previous high school education can get their high school diploma in 28 months.

RESULTS: Since Axionlog started Growing Together, employee turnover has been declining yearly, from 8.2% in 2007 to 3.1% in 2013. Although Axionlog pays 100% of the cost of the program, the costs of hiring new personnel have decreased due to this lower turnover. Axionlog employees now demonstrate better performance and increased loyalty to the company. In addition, Axionlog has promoted five operators who earned their high school diplomas in this program to supervisors and team leaders. Axionlog has lowered employee turnover by offering employees a program that promotes their welfare, engages family support, and encourages personal development by providing needed education free of charge. The program also helps to prepare employees to pursue higher degrees if they choose.



HEALTHY AND HAPPY WORKPLACE

 **Jeremy Jones**
Human Resources Business Partner
Tulip Ltd.


OPPORTUNITY: The Tulip site at Bodmin produces sliced cooked meats and cooked bacon. The workplace experienced a steady decline in people-related performance: 37% staff turnover, 10% absence in the cooked meats operation, 5% in the cooked bacon operation, and more than 200 accidents in one year. Poor performance in people-related measures also affected operational performance. Tulip identified two goals to remedy these issues and increase focus on staff engagement and health: engage staff in activities outside normal work tasks to reduce staff turnover, and raise awareness of healthy options to improve absence figures by building activities and awareness programs into the business culture. Tulip identified four areas for improvement: communication, work/life balance, healthy workplace, and employee support/benefits.

SOLUTION: To improve communication, Tulip developed new channels to provide business and other information and encourage an employee voice: the Bodmin Weekly Brief included with pay slips, a monthly newsletter available in canteens and rest rooms, a stronger voice for the Works Council and health and safety representatives, noticeboards, staff advertisements, healthy workplace information and activities, appointments with employees on long-term sick leave, and home visits by occupational health specialists. Tulip Bodmin also implemented policies and procedures to improve work/life balance, such as flexible working and dependents leave, modified working methods for staff returning to work after sick leave, a 3-1-3-7 shift pattern with seven days of rest every other week, an annual Family Fun Day, and community projects. Tulip Bodmin also worked with the local Health Promotion Service to introduce health-related activities and information; awareness days with health experts; literature and advice on stress awareness, alcohol awareness and smoking cessation; an after-work running club, a cycle-to-work program; healthy food options in the canteen; drinking water fountains in production areas; a charity rowing competition; and free health screenings. To increase employee support and benefits, Tulip Bodmin now provides long-service awards, such as gifts and increased holiday time; free osteopath treatment and counseling services; access to a healthcare plan; and staff discounts with local businesses.

RESULTS: Focusing on people measures has significantly reduced staff turnover by more than half to 14.2%, sickness absence to 3.2%, and accidents to 36 in 2012. Although these figures still offer room for improvement, the business is now in a stronger position to achieve this. The site staff survey engagement score improved by 8% last year, and 300 staff have undertaken a National Vocational Qualification at levels 2 or 3, raising both their skills and their confidence. Operational efficiency output per employee increased by around 20% in both departments. In January 2013, the activity and progress made at Tulip Bodmin received a Gold Healthy Workplace Award for work culture improvements.



SUPPORTING THE HEALTH OF FEMALE FACTORY EMPLOYEES

 **Monica Yim**
Senior Director of Compliance Management
The Marketing Store Worldwide (Asia) Ltd.

OPPORTUNITY: Unplanned pregnancies, menopause, and other women's health issues cause anxiety and distress. In addition, female factory workers need reliable sexual health information to protect themselves and their families from disease and exposure to the human immunodeficiency virus (HIV).

SOLUTION: The Marketing Store (TMS) Wellness Program was designed to improve the physical and social health of factory employees and their families by educating them in occupational safety and hygiene and by promoting a balanced lifestyle with organized activities. The Komax Toy (Shenzhen) Company Limited, a core supplier to TMS, has focused on raising worker awareness of HIV through education programs. Komax's goal is to develop healthier and therefore stronger and happier workers, who will in turn be productive members of an informed, harmonious, and motivated workforce. Since joining the TMS Wellness Program in October 2008, Komax has established a community and cultural center for female workers' reproductive health in collaboration with a local government health association. Services at the center include education programs for birth control and HIV, individual consultations with specialists, health care services targeted at five phases of women's sexual health (menstruation, pregnancy, maternity, breast feeding, and menopause), and self-defense classes that teach women how to protect themselves from sexual abuse. The center offers regular physical examinations for gynecological and high-risk diseases and has set up a system for individual recordkeeping. Together, these services help lower the incidence of HIV-related disease and other women's health problems among workers and help them face such issues more positively if they arise. Komax has also expanded the scope of services offered. In 2012, Komax opened the Sunny Female Center to provide workers with the services of a professional psychologist to help ease work- and family-related emotional stress, provide professional advice, and help them maintain healthy outlooks. To further encourage a healthier lifestyle, Komax has also set up fitness facilities and free fitness courses for employees.

RESULTS: The wellness program has contributed significantly to the health and company loyalty of Komax employees. Over the past three years, workers used the center's services 3,592 times, totaling 7,411 hours, and the center distributed 6,326 personal healthcare items. In addition, 2,366 female workers participated in 71 training courses over 128 hours on various topics, including prenatal care and health information for newlyweds. Finally, 970 workers received gynecological examinations at the center. Compared with statistics from three years ago, the overall female worker illness rate has decreased by 30.3% and overall medical expenses by 12.5%. In addition, the overall attendance rate has increased by 5.3%, and production efficiency has increased by 1.1%.



COMMUNITY IMPACT

Giving back to the community is a longstanding priority of McDonald's and one of our core values. Innovative and outstanding examples of charitable giving, volunteering and investing in local infrastructure are just some of the ways that our suppliers could demonstrate best practices in this category.



CARGILL AND CARE RURAL DEVELOPMENT INITIATIVE



Michelle Grogg
Senior Director, Corporate Contributions and Partnerships
Cargill

OPPORTUNITY: In Ghana, Côte d'Ivoire, Egypt, India, Honduras, Guatemala, Nicaragua, and Brazil, CARE and Cargill work to improve livelihoods and strengthen agricultural supply chains while fulfilling CARE's mission to alleviate poverty. The Rural Development Initiative (RDI) focuses on improving crop yields, access to markets, and incomes for farmers; enhancing educational opportunities and combating child labor; and increasing access to basic health care, improved nutrition, and safe drinking water.

SOLUTION: In 2008, Cargill and CARE launched a five-year, \$10 million program called the RDI. RDI has helped improve the livelihoods of more than 100,000 people around the world, and now is a model for CARE's engagement with other corporations. The Cargill-CARE partnership programs were designed to best match the needs of each country. For example, in Ghana and Côte d'Ivoire, Cargill and CARE work in more than 120 cocoa-producing communities to raise farm families' incomes and keep children in school and out of the fields. In Egypt, a three-year project led to the introduction of soybeans as a new crop to generate greater profits for farmers, conserve water, and restore soil fertility. In India, Cargill and CARE are helping to increase farmers' livelihoods through training, technology, and market access; to increase women's business opportunities through self-help groups and training; and to improve educational outcomes for more than 40,000 children. In Honduras, Guatemala, and Nicaragua, the initiative is ensuring that nearly 10,000 vulnerable students in some of the poorest communities have access to quality education and receive school supplies and flavorful, nutritious lunches; providing supplies for families engaged in agricultural activities; and offering training in administration and marketing to non-agricultural families. CARE and Cargill have also granted more than \$200,000 in microloans to people in Honduras to start small businesses. Incomes for people in this program increased by as much as 15%, with the largest increases achieved by women. In Brazil, the project has helped smallholder cocoa farmers increase production and improve business skills.

RESULTS: The first phase of the partnership ended in September 2013, meeting or exceeding most of its goals. The initiative has reached more than 30,881 children, engaging 52,271 parents to improve their children's education and nutrition and enabling 42,035 children to graduate from school instead of working full-time. The initiative has trained more than 6,119 teachers and education officials. Almost 26,670 farmers and their families have significantly increased their incomes, and more than 34,824 farmers and their families have received training and technical assistance to increase the productivity of their farm enterprises. Cargill recently renewed its support to CARE with commitments totaling more than \$10 million. Many of the programs in place today will continue and the two organizations will expand the scope of their work together to build new, long-term efforts to address food security.



JUST PEACHY SALSA: ONE SMALL JAR, ONE GIANT STEP IN THE BATTLE AGAINST HUNGER



Mike Horan
Senior Manager Communication
Campbell Soup Company



Amanda Bauman
Senior Manager Community Affairs
Campbell Soup Company

OPPORTUNITY: During the winter of 2011, the Food Bank of South Jersey faced unprecedented demand for hunger relief. To meet the needs of more than 170,000 food-insecure residents, the Food Bank distributed more than 900 metric tons (two million more pounds) of food than it had originally planned. The group needed to find new, sustainable revenue to fund its hunger relief programs.

SOLUTION: The Food Bank discovered that a New Jersey farmers' cooperative dumps approximately 800,000 pounds of undersized, slightly blemished but nutritionally sound peaches annually, at a cost of \$80,000 in landfill fees. The Food Bank developed a concept to turn these peaches into a retail salsa, with proceeds supporting its nine hunger relief programs. Through a long-term relationship with Campbell, the two organizations explored using the company's World Headquarters Pilot Plant to produce the salsa. Campbell employees donated their time and Summit City Farms and Eastern ProPak Farmers' Cooperative donated peaches. The Campbell team created a recipe with 50% peaches, maximizing the volume of peaches saved from the landfill, and engaged 10 Campbell suppliers to donate packaging and ingredients, lowering the cost of the entire project by more than \$25,000. Campbell set up six days to run the salsa in the Pilot Plant, and more than 100 volunteers hand-labeled jars. The Food Bank covered the peach prep, product distribution, and sales.

RESULTS: The result was Just Peachy salsa, the first product of its kind to use food that would otherwise be discarded and is sold at retail as a sustainable revenue stream for the Food Bank. In the first year of production, the team produced 42,000 jars of Just Peachy. The Food Bank distributed the product to 28 southern New Jersey retailers, and received online orders from across the country, thanks to media coverage. More than \$92,000 in gross sales supported the Food Bank's nine hunger relief programs, while tens of thousands of peaches were saved from the dump, reducing landfill usage. Feeding America and others have approached Campbell to use Just Peachy as a model for using bulk and food waste items. In 2013, Campbell produced 52,000 jars. The Just Peachy project shows how public and private partners, a company, and its skilled employees can work together to address critical issues such as food waste and hunger.



PALM OIL TEACHING FARM IPB



Colin Lee, Director
Director, Corporate Affairs
Cargill



Jennifer Lee
Business HR Leader
Cargill

OPPORTUNITY: The world's population consumed 50 million metric tons of palm oil in 2011, a number expected to grow to 77 million metric tons by 2050. As demand increases, sustainable production methods are critical to protect the environment. Today, only 15% of palm oil globally is certified sustainable by the Roundtable on Sustainable Palm Oil (RSPO). However, increasing sustainable palm oil production requires industry-wide changes in implementing sustainability practices.

SOLUTION: Awareness and best-practice education will help industry leaders understand the importance of sustainable practices in palm oil production. Therefore, Cargill joined one of Indonesia's leading agriculture institutes, Institut Pertanian Bogor (IPB - Bogor Agricultural University), to establish Indonesia's first palm oil teaching farm, with a \$250,000 full sponsorship. The farm will provide opportunities for research in the plantation sector as well as training to students in sustainable production and management.

IPB's Department of Agronomy and Horticulture manages the teaching farm in Singsari Village, Jonggol Subdistrict, Bogor Regency. It is divided into five major blocks and subsequent smaller segments to facilitate the study of palm trees in various soil, fertilizer, and agriculture conditions. The IPB agricultural faculty is fully involved in the teaching farm with each professor leading a team of students to study, document, and analyze their research projects; all IPB agriculture students spend two days there each month. Cargill field experts also visit regularly to work with faculty to blend commercial perspectives with research objectives.

RESULTS: Planting on the teaching farm that began in June 2013 is 90% complete as of early 2014. It will provide a base to test new sustainability concepts and provide results demonstrations for industry leaders, while training students in the best sustainability practices. In addition, Cargill has committed to transferring successful research into pilot trials on its plantations. The IPB-Cargill teaching farm is the first collaboration between a commercial oil palm grower and an educational institute and is intended to be the reference for applying Indonesian Sustainable Palm Oil (ISPO) and RSPO standards. With its success, Cargill will work with top agricultural teaching faculties in Indonesia to explore innovative and sustainable agricultural practices for other food crops, such as soybeans and wheat. In a few years when the trees begin producing fruit, the crop will be sold to a nearby government oil palm mill for crushing, and proceeds from fruit sales will be channeled back to help run the teaching farm and support related academic activities.



ALTERNATE ENERGY UTILIZATION AND ENERGY SAVINGS

Manitowoc **Dr. Martin Behle**
 General Manager
 Manitowoc Foodservice / Ovens & Advanced Cooking
 Convothem and Merrychef brands

OPPORTUNITY:

OPPORTUNITY: Convothem, a division of Manitowoc Foodservice operating in the foothills of the Bavarian Alps, provides employment opportunities, supports the local community, and preserves the environment. The company focuses on energy efficiency in operations first with programs to reduce energy use and the company's environmental footprint. Manitowoc has also pioneered the practice of using renewable energy from locally plentiful materials in a creative collaboration with its neighboring community.

SOLUTION: Manitowoc partnered with the Village of Eglfing to construct a power plant to produce steam from local renewable resources. The plant began producing steam within two years, creating energy with by-products from local crop and dairy farming: wood chips and other forest/farming residue. These carbon-neutral fuels replace the traditional fossil fuels (natural gas and oil) as the primary means of producing hot water at the power plant. The steam produced by the power plant is used at the Manitowoc manufacturing facility and also by approximately 50 private households in the area. As the next logical step towards carbon neutral manufacturing, in 2012 Manitowoc increased sustainability by receiving all electricity from hydroelectric power plants—guaranteed by the regional energy supplier.

In addition, Manitowoc focuses on sustainability in packaging and paper materials at the Eglfing facility. The company requires suppliers to increasingly or exclusively use reusable packaging for raw materials delivered to the factory; many suppliers now use containers that are returned to them for reuse. The facility also uses office paper with the Nordic Ecolabel and the EU Ecolabel and requires suppliers of marketing publications and packaging materials to use paper and packaging material from Forest Stewardship Council (FSC) or similarly certified sources.

RESULTS: Using the alternate fuel heating plant and the hydroelectric power supply saved approximately 1,000,000 kilograms of CO₂ annually. For Manitowoc, the local efforts in Eglfing contributed to the corporation's total results for the most recent reporting period. Carbon emissions from company facilities decreased 6% in 2010, following a 13.9% decrease in the previous reporting period (when adjusted for improved data collection and divestitures). Also, energy conservation measures resulted in an annual savings of 4,597,600 kilowatt hours (3.3% of usage) of electricity, and 268,950 therms (3.0% of usage) of natural gas.



FROM TRASH TO TREASURE

MDC **Giselle Walsh**
 Director Environmental Affairs
 MDC

OPPORTUNITY: MDC is a leading supplier of commercial wall finishes to the construction industry. In order for users to select one of the thousands of items for use in interior commercial spaces, samples are generated in two forms: binders with technical data, and physical samples for color selection. These sample materials cannot be recycled and become landfill once they outlive their usefulness. Concerned about this significant amount of waste, MDC looked to find a way to repurpose the "trash" it generated as well as similar materials from other commercial interiors.

SOLUTION: MDC sponsors and supports ZeroLandfill Chicago, whose mission is to divert expired sampling materials from the waste stream and to find new audiences in the local community. School teachers, artists, scout troops, community gardeners, and small theaters, along with many charities, are the primary recipients. They use the cast-offs as creative materials and classroom supplies. This initiative reaches beyond MDC's commercial wall finishes into other commercial interiors suppliers. Now, organizations facing the same challenges with similar sampling can contribute their own discards to the initiative. Carpet tiles, fabric samples, laminate chips, and ceramic tiles along with three-ring binders are just a few of the kinds of resources shared. ZeroLandfill Chicago is a zero-budget initiative, which means that all materials and services are donated, all work is done by volunteers, and the educators are allowed to collect as many materials as they like without tapping into their limited budgets.

RESULTS: In its brief 18-month history, MDC's ZeroLandfill Chicago has identified and diverted more than 18 metric tons of expired samples from local landfills and repurposed them into the community. ZeroLandfill Chicago has also made a connection with Chicago Board of Education teachers who have found materials to help stretch their budgets and enrich the experiences of the students in the classrooms and on theater stages. Additionally, community gardens found new life for brick and tile samples, which enrich blighted neighborhoods where resources are scarce. In June 2013, The Chicago Chapter of the U.S. Green Building Council awarded ZeroLandfill Chicago its highest honor, the Emerald Award, in the category of "Intent to Matter," after recognizing the impact the initiative has had on the community. MDC continues to reach out to industry peers for additional materials and assistance with event logistics, as well as to further develop the network of material users to ensure ample resources are available to the growing demand from those with need.



ONE TO WATCH

COFFEELANDS FOOD SECURITY COALITION

Farmer Brothers **Sarah Beaubien**
 Director of Sustainability
 Farmer Brothers Coffee, Tea, and Spices

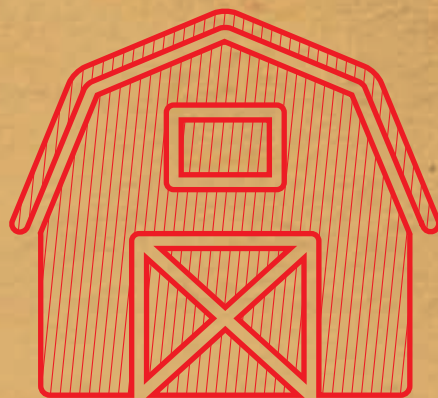
Farmer Brothers **Paul Thornton**
 Roastmaster/Director of Coffee
 Farmer Brothers Coffee, Tea, and Spices

Farmer Brothers **Molly Laverty**
 Manager of Sustainable Green Coffee Supply and Procurement
 Farmer Brothers Coffee, Tea, and Spices

OPPORTUNITY: In a recent International Center for Tropical Agriculture survey of small-scale coffee farmers in Mexico, Guatemala, and Nicaragua, more than 67% indicated they could not maintain their normal diet for three to eight months of the year. During these "thin" months, families make ends meet by eating less or borrowing against their future earnings from coffee.

SOLUTION: Farmer Brothers has collaborated with other industry organizations to create the Coffeelands Food Security Coalition that aims to develop, enable, and disseminate solutions to seasonal hunger in coffee producing countries. The pilot project is a three-year Empowering Food Secure Communities Program with Mercy Corps, implementing partner, and long-time direct trade partner, Asociación Aldea Global Jinotega. The program seeks to empower Nicaraguan farmers to overcome food insecurity by feeding their families through income-generating home gardens and by creating systemic change through civic participation with local and national government institutions. Central to success is empowering women as change-makers by developing their business and leadership skills through programs like climate-smart agriculture training and business incubator groups. The program's strategy is to invest heavily in 150 food-insecure families (900 people) that will serve as "multipliers," spreading their successful agriculture and business practices through local community and business organizations and advancing change in government agencies responsible for nutrition and food security.

RESULTS: Women's business incubator groups have demonstrated substantial progress. Members receive training in managing credit and developing investment plans. Group solidarity has enabled them to create a revolving fund to manage small loans (with slightly lower than market rate interest) to invest in economic activities. Women and their husbands are receiving training to boost their self-esteem, empower entrepreneurship, advocate for themselves and their families, and access needed services. Participants are gaining influence in their communities, increasing market access, and increasing business skills to reduce post-harvest losses and scale small businesses. So far, coffee-farming women have received about \$12,000 in loans, with each group receiving around \$1,000. Technical training sessions have also been successful, addressing topics such as producing quality products suitable for local markets. A group of 1,500 coffee producers recently elected leaders who have received training on the legal framework for food security with the regional Municipal Commissions for Food and Nutritional Sovereignty and Security in Nicaragua.



ECONOMICS

Suppliers can contribute to the long-term economic sustainability of the McDonald's system by engaging in equitable trade practices, supporting producer/farmer income security and access to market, providing technical assistance to farmers, removing costs from the system, limiting the spread of agricultural diseases and creating shared value along the supply chain.



BOOSTING REVENUES IN IRISH BEEF FARMING



Richard Clinton
Group Commercial Director
Dawn Meats

OPPORTUNITY: Ireland is the largest net exporter of beef in the Northern Hemisphere, but dairy cows are becoming a larger proportion of the national cattle herd. Dawn Meats sources 65% of its cattle supply in dairy producing areas. Also, in 2009 and 2010, live calf and weanling exports to other European Union countries for veal production and beef fattening increased, reducing by 15% the number of cattle for processing in Irish abattoirs in 2011 and 2012.

SOLUTION: To address these declines, Dawn Meats initiated four projects. In 2010, Dawn established the "Dairy Beef Club" to retain cattle in Ireland by offering farmers contracts and promoting knowledge transfer initiatives with Teagasc (Ireland's agriculture and food development authority). Dawn Meats also developed the "Save Our Sucklers Scheme" to boost numbers in the prime beef herd. Dawn offers a financial incentive to farmers to produce calves from their heifers (young cows) before they are slaughtered, thereby finishing two animals instead of one. Dawn pays a steer-equivalent price for heifers that produce calves, while farmers have the economic benefit of the calf. Liver fluke infection, estimated to cost 10 to 15% per animal, contributes to production losses in grazing cattle, lowering farm profitability. To monitor for the infection, Dawn Meats initiated a reporting system to notify farmers when their animals were found to have fluke infections at slaughter, thereby alerting them to the presence of infection in their herd. To increase the proportion of cattle for McDonald's that is certified under the Bord Bia quality assurance scheme, Dawn also pays a premium for cows originating from certified farms.

RESULTS: National exports of calves and weanlings declined by 66% in a 2-year period. Thanks to the Save Our Sucklers initiative, performance trials through 2011 and 2012 achieved increased margins equal to an income of \$1,800 (€1,296) per hectare (at a density of 1.8 livestock units per hectare), which was higher than typical incomes from suckler beef finishing on the national Better Farms Program. Comparing January to July 2013 with the same period in 2011, the incidence of liver fluke infection in Dawn Meats abattoirs fell by 12%. Based on previous studies conducted by EBLEX, the direct cost reduction to farmers would have been approximately \$192,000 to \$241,000 (€140,000 to €175,000) in the 7-month period. From January to July 2013, after the cow premium payment began, the numbers of cows processed by Dawn Meats increased by 12.4%, with 86% of these extra cattle qualifying for premium payments.



ELEVATING SMALLHOLDER PRODUCTION OF SUSTAINABLE COCOA IN COTE D'IVOIRE



Saskia Samama
Marketing Manager Sustainable Cocoa
Cargill (Cocoa & Chocolate)

OPPORTUNITY: Across the globe, cocoa is grown on small farms. The cocoa crop usually provides farmers only a limited income, and often falls far short of its yield potential. After harvest, cocoa farmers must use a disorganized and inefficient supply chain, further reducing their ability to increase their incomes. Although farmer organizations and cooperatives are essential for cocoa sustainability, each country has a slightly different system for assembling groups. Recent studies have shown that despite some progress, many challenges still remain. For instance many farmers express doubt about their future in cocoa and expect their children will not become cocoa farmers.

SOLUTION: Over the past several years, Cargill has established and supported farmer cooperatives through several initiatives to improve the economic security of smallholder farmers, as well as to improve community facilities such as local hospitals, schools, and orphanages. These initiatives include training on management skills and internal control systems for purchasing inputs, selling cocoa, and delivering services to member farmers; supporting community and social programs to create stable cocoa farming communities; and supporting better and more sustainable agricultural practices. These practices are expected to lead to higher, long-term productivity (higher yields per hectare), which is linked to better market access, increased income, and improved social and environmental conditions.

RESULTS: Third-party certification has been a valuable tool in the cooperative support activities. Smallholder farmers growing certified cocoa can link more easily to the supply chain; the supply chain becomes more transparent; and the local community retains more economic value. Cooperatives pay at least half of additional revenue directly to farmers and strengthen communities by investing the rest in improving community services and facilities. Cargill partners with 110 cooperatives throughout Cote d'Ivoire. The company trains around 60,000 Ivorian cocoa farmers in good agricultural practices every two weeks for 10 months of the year, and 88% have obtained independent certification (UTZ and Rainforest Alliance). In crop year 2012-2013, participating farmers produced close to 90,000 metric tons of certified cocoa, for which Cargill paid \$8.4 million to producer groups. The premium may be the most important benefit of certification to farmers, especially for those just starting. Increased productivity and income are additional long-term benefits. The farmers use their revenues mainly for their children's education, family needs, and inputs for the farms.



INCREASING YIELDS IN HIGH OLEIC CANOLA



Dave Bennett
MBU NA Oils General Manager
Cargill



Rick Wiebe
Marketing Manager
Cargill

OPPORTUNITY: Cargill produces McDonald's annual requirement of high oleic canola oil. Cargill's goals are twofold: to improve the agronomic properties of Cargill's trademark high oleic canola hybrid varieties and to produce more high oleic canola for the McDonald's System on fewer acres of land. Two Cargill research facilities in the United States and Canada focus on improving hybrid agronomic properties and oil profiles that meet McDonald's needs today as well as innovative products that will meet McDonald's future oil needs.

SOLUTION: Cargill increased its total research and development spending for variety development technology by 45% between 2007 and 2013. Researchers at the two facilities developed canola varieties that have consistently increased grower yields. In addition, Cargill grower support programs help growers manage and address disease, dedicating 20% of field pathologist time to supporting, educating, and training farmers in formal classes at a Cargill facility and supporting farmers in detecting disease and taking corrective actions. Finally, high oleic canola growers use best management practices developed by the Canola Council of Canada, and the Cargill teams work with growers to help identify the best practices among land management and identity preserved programs.

RESULTS: The Identity Preserved (IP) specialty seed varieties developed at Cargill facilities have consistently increased yield, resulting in the ability to produce more high oleic canola for the McDonald's System on 20.5% fewer acres of land, as compared to land required in 2007 to supply the same volume of oil. In addition, between 2007 and 2013, Cargill increased VICTORY hybrid seed yields 11.8%.



DAIRY FARMERS CREATE HISTORIC COLLABORATION FOR SUSTAINABILITY



Antone Mickelson
Director Farm Practices
Darigold

OPPORTUNITY: A few miles south and west of Monroe, Washington, the Skykomish and Snoqualmie Rivers come together to form the Snohomish River. The local farmlands in this rich agricultural area face pressure from urban sprawl and diverse conservation efforts dedicated to bolstering salmon runs in local rivers, enhancing biodiversity, and reducing the environmental impacts of large-scale agriculture. Jim Werkhoven is Chairman of Northwest Dairy Association, the 500-member farmer-cooperative that owns Darigold. Jim and his brother Andy, co-owners of Werkhoven Dairy near these rivers, led in supporting long-term dairy farming in the area. They began an ambitious project to increase renewable energy, reduce risks of climate change, preserve salmon runs, improve soil fertility, reduce waste and the risk of pollution, restore local ecosystems, and build collaborations among previously antagonistic community groups.

SOLUTION: The Werkhovens led the way in creating Qualco Energy, a nonprofit partnership made up of Northwest Chinook Recovery, a nonprofit working to restore salmon habitat, the 3,500-member Tulip Tribes, and the Werkhovens' Sno/Sky Agricultural Alliance. The goal of Qualco Energy was to create a profitable digester system that would preserve the land, improve the local ecosystem, enhance biodiversity, and provide specific economic benefit to each of its members. Manure from the Werkhoven Dairy and off-site feedstocks produces gas. The digester takes cow manure, fish waste, animal blood, trap grease, pulp, whey, expired beer and soda, and other pollutants—keeping them from landfills, drains, and illegal dumping—and anaerobically digests and burns the methane gas to create renewable electrical energy. This process helps clean the air and water, helps farmers keep their dairies operating, protects salmon streams, fertilizes fields without chemicals, and provides an environmentally-safe, quality compost. The digester project also generates funding that the tribes and environmental partners use for salmon restoration and habitat protection projects. The Qualco Energy project raised funding from federal renewable energy loans, the U.S. Department of Agriculture, and the Washington State legislature, in addition to \$500,000 from the Qualco Energy partner organizations. Andy Werkhoven monitors the performance of the digester daily and resolves any problems.

RESULTS: The digester is so successful that it produces up to three times more gas than can be burned in the 450-kilowatt (kW) generator. The next phase of development will be installing a second 750-kW generator. At maximum output, Qualco will generate 1.2 megawatts of electricity. Since Qualco is a nonprofit, the income from the digester allows investment in new renewable energy and recycling projects, fish and wildlife habitat restoration, and state-of-the-art farming practices.



ENGAGING COFFEE COOPERATIVES FOR ECONOMIC SUSTAINABILITY



Sarah Beaubien
Director of Sustainability
Farmer Brothers Coffee, Tea, and Spices



Paul Thornton
Roastmaster/Director of Coffee
Farmer Brothers Coffee, Tea, and Spices



Molly Laverty
Manager of Sustainable Green Coffee Supply and Procurement
Farmer Brothers Coffee, Tea, and Spices

OPPORTUNITY: Through the first half of 2013, Farmer Brothers was purchasing conventional coffee from the coffee commodities market for McDonald's coffee blends. Farmer Brothers wanted to work toward a 100% certified or verified supply for the McDonald's portfolio.

SOLUTION: Using the Lowell Center Framework and the Committee on Sustainable Assessment, Farmer Brothers set out to create sustainable supply chains for coffees purchased for McDonald's. The company's objectives included creating long-term relationships with farmers, supporting sustainable farming, strengthening the supply chain, encouraging stability, creating transparency and traceability, correlating price and coffee quality, engaging in social issues, investing in communities, and engaging consumers.

Through the Committee on Sustainable Assessment, Farmer Brothers is creating sustainability indicators that partners will use to create a baseline for participating cooperatives. After analyzing the baseline results and identifying the greatest needs, Farmer Brothers will establish interventions and support within the supply chain to improve sustainability scores, quality, supply chain stability, yields, margins, and market access. By the end of 2015, the company plans to increase Colombian participation in the Direct Trade Verified Sustainable Program, engage an auditor to verify results, and increase participation to two other coffee origins.

RESULTS: The relationship with the Colombian cooperatives is new, but Farmer Brothers anticipates that this program will improve the quality, productivity, margins, and sustainable farm practices for many of the approximately 1,200 participating farmers, as well as motivate them to sell more of their coffee harvest to the cooperative. Within farming communities, the network effect has created positive changes in the entire community. The Farmer Brothers direct trade buying philosophy has also been successful in other regions. In Nicaragua, the program created a fully transparent pricing system that pays premiums to farmers who produce coffee above the standard quality generally produced in their regions. The farmers have re-invested these premiums to develop innovative organic agriculture techniques on their farms, provide fresh drinking water for their families, and conserve their region's natural forests. The cooperative has also invested in regional food security and farmer microloan programs.



LEADERSHIP ON FARM ASSURED BEEF



Marcin Sokolowski
Quality Assurance Raw Material Manager
OSI Food Solutions Poland

OPPORTUNITY: Poland is a significant producer of dairy and beef in Europe, but around 85% of the cattle are raised on small, family-owned farms with around 10 animals. Therefore, OSI Poland has to source its beef from approximately 40,000 cattle producers yearly. Animal traders deliver the majority of cattle to meat plants; only a part of the supply originates directly from small farms, which sell just a few animals per year, so many small cattle farmers have no direct link to the patty plant. The beef supply chain in Poland also lacks national or independent quality assurance programs to certify farmers' compliance with agricultural and quality standards, such as the McDonald's Agricultural Assurance Program (MAAP). These issues present challenges in developing sustainable raw material sourcing for McDonald's beef patties in Poland.

SOLUTION: OSI needed to develop its own quality assurance system and purchase cattle from farms using good practices. In 2004, the company created the "Supplier Farm Standard" (SFS) which covers all the important areas of beef production and is 78% compliant with the MAAP Beef Standard. Key beef suppliers began implementing SFS and auditing their cattle suppliers. Within five years, the number of audited farms reached 3,500. In 2010, the European standard for certification systems upgraded SFS to an independent quality system. Under this system, two independent inspection bodies have conducted independent audits and certified more than 12,000 farms. To locate quality-assured farms more quickly, OSI conducted more than 120,000 telephone surveys of suppliers asking whether their farms had been audited by the state veterinary service and whether they had passed the audit. To date, OSI has identified more than 50,000 farms that have passed these audits. OSI has awarded a bonus to suppliers delivering certified raw material and suppliers pass the bonus on to farmers as additional income. OSI is also building direct relationships with certified farmers by expanding its own cattle purchasing system. The goal is to establish long-term contracts with certified farmers to provide farm-assured beef for the McDonald's supply chain.

RESULTS: The first year of the project brought just 104 tons of certified beef into the McDonald's supply chain, but over the next nine years the total supply has exceeded 30,000 tons, including 35% of the total beef purchased in 2012. Nearly 15,000 farms have been audited based on the SFS standard. In addition, OSI has signed over 600 long-term supply agreements with certified cattle farms in Poland.



ONE TO WATCH

CREATING SHARED VALUE IN SOUTHEAST ASIA AND AFRICA

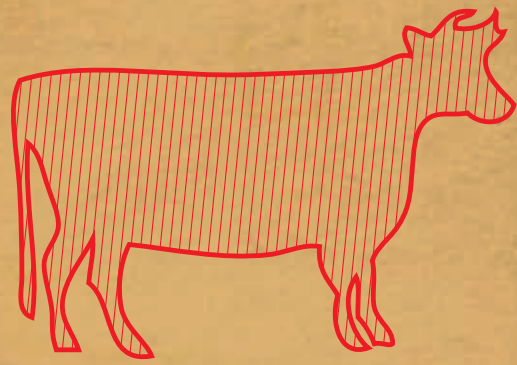


Peter van Sprundel
International Key Account Manager Global Accounts
FrieslandCampina

OPPORTUNITY: Dairy farming faces three major challenges: the increasing average age of farmers worldwide, offering young dairy farmers a positive future, and supporting 750 to 900 million people worldwide who depend on dairy farming. Through the Dairy Development Program (DDP), FrieslandCampina addresses these challenges, reflecting the company's ambition to continue supplying enough nutritious food for a growing world population.

SOLUTION: The DDP involves more than 40,000 local dairy farmers in Indonesia, Thailand, Vietnam, Malaysia, and Nigeria. The program has three goals for 2020: bringing small dairy farms into FrieslandCampina's worldwide quality standard (Foqus); raising farmers' annual income above the United Nations poverty line; and raising yield per cow by 50% over 2011. In 2012, FrieslandCampina and Agriterra formed a partnership to strengthen farmers' organizations and cooperatives in developing countries by sharing agricultural knowledge. Fifteen FrieslandCampina employees went on an advisory mission for Agriterra clients in Asia and Africa. The Farmer2Farmer Program, a volunteer program in cooperation with Agriterra, aims to deploy 15 trained member dairy farmers for three weeks at a time to provide training and support to DDP farmers. DDP has also developed a pool of consultants who will work with local dairy farmers to improve farm management, milk quality, animal health, and food safety, as well as raise living standards. DDP also developed the cooling tank program for local farmers to improve the quality of raw milk and the efficiency of milk collection; to develop individual farms, milk sourcing, milk collection, logistics, and raw milk cooling activities; and to increase milk collection and transportation efficiency.

RESULTS: DDP established a consultancy pool and 15 DDP officers attended 14-day training courses to learn more about dairy farming. In addition, DDP organized 25 local farmer training sessions. In Malaysia, DDP conducted a gap analysis to set up a quality standard and implementation plan. The six best farmers were each awarded 2,000 Ringgit to spend on farm equipment. In Vietnam, DDP established a cooling tank program, and now 40% of the milk is cooled immediately after milking. Also, farms have joined a program to buy concentrate directly from feed manufacturers, a practice that could help reduce feed costs by at least 5%. In Thailand, DDP built a cooling tank that can hold up to 5 metric tons of milk per day and a 500-cow dairy farm where members of the cooperative can buy cows in exchange for young cattle. In Nigeria, DDP opened three milk collection points so farmers do not have to travel long distances to sell their milk.



ANIMAL HEALTH AND WELFARE

Animal health and welfare includes efforts to improve nutrition, husbandry, and welfare during transport and slaughter. It also involves ensuring responsible use of medication, growth promoters and genetic selection. Best practices go beyond the basic obligations in our animal welfare standards to demonstrate proactive improvement of animal health & welfare.



IMPROVING DAIRY COW WELFARE THROUGH COLLABORATION AND KNOWLEDGE TRANSFER



Peter van Sprundel
International Key Account Manager Global Accounts
FrieslandCampina

OPPORTUNITY: Agricultural and dairy farming methods should not only have a minimal impact on the environment, but should also be animal friendly and boost public support for dairy farming. With an increasing focus on production efficiency, concerns about animal health and welfare rise. Like McDonald's ethical supply chain vision, FrieslandCampina wants to ensure and improve the welfare and humane treatment of cows.

SOLUTION: In early 2012, FrieslandCampina introduced its Foqus planet strategy, a quality and sustainability program aimed at supporting member dairy farmers in making their businesses—and the broader dairy farming industry—more sustainable. As a cooperative, FrieslandCampina's member dairy farmers have been closely involved in the development and structure of Foqus Planet, which encompasses almost 20,000 member dairy farmers and affects 14,000 farms. Foqus planet is a holistic sustainability program that spans milk quality and safety, production processes, environment, and animal health and welfare. However, a healthy farm is only possible with healthy cows, and animal welfare is an essential sustainability goal.

The overarching objective is to improve the health and welfare of livestock on member dairy farms by 2020. The use of antibiotics in stock must be reduced to help curb resistance to disease-causing bacteria. Foqus planet contains three specific targets for animal health and welfare: bringing antibiotic use back to 1999 level, bringing clinical mastitis down to natural levels from 25% to 15%, and reducing clinical lameness from 25% to 10%.

The program centers on exchanging knowledge through workshops, model farms, and a website accessible by member dairy farmers that encourages learning and improvement. To support dairy farmers more effectively through these workshops and tools, FrieslandCampina has collaborated with experts, partnering with CRV Holding (a cooperative working on cattle improvement), the Dutch Udder Health Centre, and veterinarians.

RESULTS: To date, the FrieslandCampina program has achieved significant results. During the first half of 2012, dairy farms made substantial progress in reducing their use of antibiotics, achieving a reduction of nearly 30%. Also to date, more than 4,000 member dairy farmers have taken part in workshops on the responsible use of animal medicines. In addition, the program held 69 workshops on udder health, and 70 workshops were held on hoof health in the Netherlands and Germany. The program has affected approximately 840,000 dairy cows.



RENEWABLE TECHNOLOGIES FOR POULTRY HEALTH AND WELFARE



Hugo Jansen
Sustainability and Business Development Director
Cargill Meats Europe



Phil Proud
Technical Director
Cargill Meats Europe

OPPORTUNITY: Respecting animals and avoiding animal suffering is one of Cargill's key principles, and animal welfare for poultry rearing has become increasingly important. Litter quality is a key factor in the incidence of footpad lesions in chickens reared for meat, so maintaining good litter quality plays an important role in the control of this condition in commercial flocks.

SOLUTION: As part of a wide range of trials and research activities, the Cargill team identified an opportunity to learn more about how new technologies can help to maintain litter in a dry and friable state. Theoretically, installing renewable indirect (outside of the broiler house rearing area) heating sources and using heat exchangers can reduce moisture levels in the broiler by eliminating moisture generated by gas-fired heaters and by "extracting" moisture from the house. These technologies should improve litter quality and therefore reduce footpad lesions. Cargill decided to test this theory and the value of renewable technologies, such as heat exchangers and biomass burners, by conducting an evaluation of 24 poultry houses in the UK supply chain and others in France to assess the incidence of footpad lesions in standard farms versus farms using the renewable technologies. Additionally the carbon footprint impact of using these new technologies was assessed from data for 32 houses. A protocol ensured that the resulting data was accurate and meaningful.

RESULTS: Cargill found that a greater number of renewable/recyclable technologies are operating on the farms producing better quality birds—suggesting that these aid litter management and reduce the presence of welfare issues such as footpad lesions. "Reverse flow" ventilation systems, or fans in the roof with side wall air inlets, in combination with biomass heating systems, appear to give best results in litter management and bird welfare. Analysis confirmed a 30% reduction in the carbon footprint of poultry houses using new technologies such as heat exchangers and biomass as heating source.



TAKING A HOLISTIC APPROACH TO ANIMAL WELFARE



Jennifer Walker
Director, Dairy Stewardship
Dean Foods Co.

OPPORTUNITY: Many food companies and providers recognize animal health and welfare as an increasing concern for consumers and the public. Dean Foods has taken a leadership role in this area with a holistic approach unrivaled in the dairy industry. The company developed an animal health and welfare program based on sound science and the principle that animal health and welfare should not be a competitive issue, but an expectation in animal agriculture.

SOLUTION: For many years, Dean Foods has been an active member of dairy industry associations. In the late 2000s, these groups developed the F.A.R.M. program, the industry's first public steps toward adoption of farm-level standards for improving animal welfare, and Dean Foods took a leadership position. In 2010, the company created a staff position dedicated to animal health and welfare and hired a veterinarian to fill it. Around the same time, the Dean Foods Foundation formed to direct the company's charitable giving. The company supports a number of organizations that advance dairy stewardship. In 2011, Dean Foods established the Dean Foods Animal Welfare Advisory Council (AWAC), which includes academic experts, such as Temple Grandin and Nigel Cook, supply chain leaders, and five dairy farmers from different states across the country. The goal is to identify challenges and opportunities in the dairy industry and develop plans and programs to help promote the sustainability of the dairy farmer and the industry as a whole.

Since 2011, the AWAC has partnered with the Professional Dairy Producers of Wisconsin to develop and test a pilot program to identify opportunities for improvement and demonstrate the individual efforts farmers have made to improve the welfare of their cows. The Dean Foods Foundation has supported the National FFA Foundation and Michigan State University's Animal Welfare Judging Competition to promote the science of animal health and welfare education among undergraduate and veterinary students. In farmer newsletters, Dean Foods shares up-to-date information and best practices—from cow comfort to calf care and milk quality at all farms, regardless of size or system. In addition, the company recently partnered with the University of Wisconsin School of Veterinary Medicine's Dairyland Initiative to provide farmers nationwide free access to Dairyland's web-based tools that include training on everything from updating old barns to designing calf housing to helping farmers improve the welfare of their cattle.

RESULTS: So far, more than 200 dairy farms and 200 other professionals have been trained in facility design. More than 1,600 farmers, builders, veterinarians, and others have used the online resource.



DRIVING ANIMAL WELFARE AND MANAGEMENT



David Brass
Chief Executive
Lakes Free Range Egg Company Ltd

OPPORTUNITY: Since its inception in 1995, the Lakes Free Range Egg Company has maintained the same ethos: marketing only free-range eggs from chickens raised by the highest standards of animal welfare, while improving the environment and sustaining the local economy. Key to this strategy is a focus on local sourcing as well as continuous improvement in animal husbandry and management of hen ranges.

SOLUTION: Because no advanced free-range egg production courses were available, in 2011 and 2012, Lakes Free Range created a tailor-made, two-part training program focused on the specific issues of free-range eggs producers. Part 1 is classroom-based, delivered in collaboration with industry specialists from Scottish Agricultural College, St David's Veterinary Practice, Newton Rigg Agricultural College, and Novartis Animal Health and Assured Environmental Services. Part 2 consists of on-farm practical sessions, which review tree management in enriched ranges, shed construction, layout and maintenance, technologies for data collection, and new welfare standards set by the Freedom Food and British Egg Industry Council certification schemes. The training is supplemented by "Producer Days," quarterly meetings where farmers can discuss common issues, benchmark their farms against the group and industry producers, and listen to talks by industry specialists. Lakes is a member of the Beak Trimming Action Group, a multi-stakeholder expert group, focused on developing methods of egg production that do not include beak trimming. Lakes Free Range has been instrumental in a national study of non-beak trimmed flocks, aimed at identifying further solutions and led by scientists at the University of Bristol. Lakes is also collaborating with the University of Bristol to develop a world-leading pullet rearing system.

RESULTS: Lakes Free Range schedules over 200 training days per year, with an associated investment of more than \$83,000 (£50,000) annually. To date, representatives from more than 70% of farms in the supply chain have attended the classroom-based training course, with the remainder scheduled for spring 2014. Ninety-six percent of supplier farms have attended the on-farm practical sessions. Lakes Free Range's investment and commitment to providing training has improved disease control across their free-range flocks; 15% of turnover is invested in research and development.

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McDonald's Global Best of Sustainable Supply is available on the web at www.bestpractices.mcdonalds.com. While you're there, check out McDonald's Global Best of Green, a collection of leading environmental best practices from McDonald's markets around the world.