GREENING FAST FOOD PACKAGING:

A Roadmap to Best Practices

DOGWOOD ALLIANCE

Over the past decade, ever-growing customer demand for green products along with pressure from local community and environmental stakeholders has made sustainability a new corporate imperative.

Across all sectors of the economy, major companies have taken steps to reduce their environmental impact and enhance their green image. With competing brands working to address these concerns, the fast food industry has been no exception.

In the complicated world of corporate sustainability, progress takes work. In some cases, efforts within the fast food industry have resulted in significantly improved environmental outcomes. While in other cases, changes have amounted to little more than greenwashing. This report takes aim at one key area that must be addressed to improve sustainability in the fast food industry: packaging. Special emphasis is placed upon issues surrounding the predominant material for fast food packaging: paper.

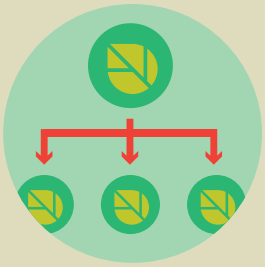
In addition to being the largest component of fast food packaging, paper packaging represents a significant portion of global paper production. Across the planet, the pulp and paper industry has a large impact on our most pressing environmental challenges, including climate change, deforestation, loss of biodiversity, air and water quality, and solid waste. Here in the United States, wetland forests along the Southeastern coast are a major source of fiber for fast food packaging. Despite industry claims of "sustainable forestry" as certified by the misleading Sustainable Forestry Initiative (SFI), paper mills in this region are sourcing wood from the ditching, draining, clearcutting, and conversion of natural wetland forests to industrial pine plantations at great expense to local ecosystems and communities. Reduced biodiversity, degraded carbon sinks, and increased flooding in local communities is the price of packaging that ends up on the side of the road or in a trash can within minutes of leaving the restaurant.

From design, materials, sourcing, logistics, recycling, end-of-life strategies and more, there are solutions that can work. To be successful, companies wishing to move forward with a sustainable packaging strategy need a comprehensive approach to address challenges and opportunities. However, there are many easy and straightforward opportunities to start making progress. This report provides a simple framework for assessing current packaging sustainability and identifies a stepwise guide for improvement in the fast food industry.

Part I of this report identifies eight indicators for assessing overall packaging sustainability. Part II provides selected highlights of current industry best practices to illustrate where potential opportunities to green packaging may lie. Part III offers guidelines for an approach to improving packaging sustainability by setting out action steps beginning with the short term. Finally, the Appendix contains a sample worksheet for engaging with packaging suppliers.

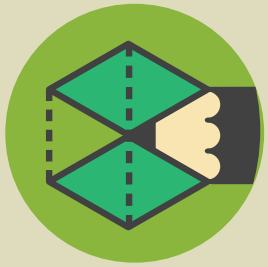
Part One: EIGHT INDICATORS OF SUSTAINABLE FAST FOOD PACKAGING

As a way to move forward on sustainable packaging issues, we have identified eight key indicators to serve as measures for leading fast food industry practices.



- **Embrace Corporate Leadership on Sustainability**
  The most important step any restaurant or fast food chain can take is to make a strong commitment to sustainability and adopt an environmental packaging policy. With a strong policy in hand and buy-in from the top leadership down, real change can happen. As with most organizational changes, successful implementation of sustainable packaging goals and practices is highly dependent on management support. This requires an approach that is integrated throughout the entire corporate strategy. er across the board and include cups, buckets, and boxes.

- **Use Full Life Cycle and Supply Chain Approach**
  The best decisions come from understanding the total environmental impact of a product from the cradle to the grave. By using the best available science to understand the impacts of materials, the environmental footprint of packaging can be dramatically reduced. Use of life cycle assessment (LCA) data for decision-making supports a comprehensive approach to sustainable packaging. It is vital that this assessment is made across the entire supply chain to uncover both the full impact of decisions and hidden areas of opportunity for improvement.



- **Reduce Overall Packaging and Increase Efficiency**
  The first and smartest step a company can take in reducing the impacts of its packaging is to reduce the overall amount of packaging it uses. Packaging should be designed to minimize the mass of materials necessary to achieve a specified level of functionality. This not only means less material consumed and less packaging in the landfill, it also can achieve big savings for the company. Additionally, preferred packaging is physically designed to optimize material and resource productivity by light-weighting and efficiency.

- **Increase the Use of Recycled Fiber**
  Though efforts can be made to reduce the overall use of packaging, total elimination is unlikely and therefore best practices start with dramatically increasing the use of recycled fiber in all paper packaging. Using recycled fiber significantly decreases forest destruction and carbon emissions as well as chemical, water, and energy use. Great strides have been made with low-hanging fruit like bags and napkins, which is commendable. The real challenge for companies is to increase recycled fiber across the board and include cups, buckets, and boxes.

- **Eliminate Paper Originating from Controversial Forestry Practices**
  Though reducing overall use of packaging and dramatically increasing recycled fiber content is critical to packaging sustainability, some fiber is still likely to come from forests. Thus, it is vital that a company understands its supply chain and eliminates paper from controversial and environmentally destructive sources. Paper packaging should not come from logging of endangered forests, large-scale clearcutting, ditching and draining of wetlands, or the conversion of natural forests to plantations. Currently, the best way to ensure this is to utilize Forest Stewardship Council (FSC) certified paper, the only certification system broadly endorsed by the environmental community. Using the competing Sustainable Forestry Initiative (SFI) certification is insufficient to ensure a company is sourcing from responsible forestry as it allows these destructive practices to be certified as "sustainable."

- **Increase In-Store Recycling and Recovery**
  It does not matter how recyclable products and packages may be if they can't or won't actually be recycled when they are in the hands of a consumer. Leaders must increase in-store recycling and other appropriate reduced waste disposal practices and engage with their consumers to encourage recycling take-away packaging. If leaders implement strong management strategies for encouraging recycling and reuse practices that work with local solid waste infrastructure constraints, a company can achieve continuous improvement.

- **Eliminate Toxic Inks and Labels**
  Recently, more and more definitive scientific research highlights the health impacts of toxic inks, coatings, and dyes from food packaging, especially on children and the elderly. Simple solutions are available that utilize biodegradable and natural ink, allow for beautiful branded packaging, and also decrease potential negative health impacts. In addition to the concern over the potential toxicity of the pigments and materials used for dying and printing, poor choices can affect the recyclability of packaging. Environmental and health issues may be addressed through strategies that include using soy ink, water-based dying, and de-dying technologies.

- **Reduce Carbon Footprint**
  Reducing overall use of packaging, increasing use of recycled fiber, and eliminating packaging originating from destructive forest practices are good first steps to reducing carbon footprint. However, transporting packaging to restaurants can still be a huge hit on the green bottom line. Changes in composition, size, and weight of packaging affect the efficiency of shipping and thus reduce the amount of CO2 released during transit. Improved operational choices such as selecting space efficient pallet configurations, using automatic palletizers, and choosing fuel efficient modes of transportation can help reduce CO2 emissions.

Part Two: CURRENT BEST PRACTICES ON KEY INDICATORS OF SUSTAINABLE PACKAGING

This section highlights current best practices across the fast food industry and is based upon a report "Dogwood Alliance Best Packaging Practices Project Final Report" by Brown and Wilmanns LLC commissioned by Dogwood Alliance with additional information gathered from web research and interviews with corporate environmental staff.

1. Embrace Corporate Leadership on Sustainability

Sustainability is not yet a core corporate function across the board. It takes a commitment from management to drive leadership. Leaders in this category are investing time and money in the development of environmental paper packaging policies and creative stakeholder partnerships to achieve sustainability goals. For example, as part of the Starbucks' goal to ensure 100% of its cups are reusable or recyclable by 2015, the company brought together diverse stakeholders to find solutions to make hot beverage cups more broadly recyclable. The effort has included representatives from all facets of the paper and plastic cup value chain, including municipalities, raw material suppliers, cup manufacturers, retail and beverage businesses, recyclers, NGOs, and academic experts.

Additional examples of corporate leadership on sustainability include:

- Membership in the Sustainable Packaging Coalition and other environmental packaging forums (Chick-Fil-A, Dunkin Donuts, Starbucks)
- Investment in multi-stakeholder efforts like the Paper Recovery Alliance, which aims to create solutions for the recovery and processing of used paper food service packaging (Starbucks, Tim Horton, Yum! Brands)
- CEO initiates industry-leading environmental paper packaging policy which dramatically increases use of recycled fiber and is main public spokesperson for policy (Quiznos)

2. Use Full Life Cycle and Supply Chain Approach

Using best available data from life cycle analysis for packaging material choices allows for the best decision-making. Leadership companies show a commitment to big picture thinking and invest the resources in LCA when warranted. Data from an LCA process allows for companies to make big breaks from past practices. For example, using definitive science regarding the resource efficiency and recyclability of materials, Starbucks has moved from industry standard PET cups to polypropolene-based ones. Clear and public guidelines like those in McDonald's Environmental Scorecard and Starbucks' Supplier Social Responsibility Standards provide a way to encourage competition within supply chains to meet rising sustainability standards.

Additional examples of using a full life cycle and supply chain approach include:

- Requesting suppliers to provide information on carbon footprint, LCA, materials reduction, etc. Also working with suppliers on end-of-life specific issues (e.g. coating was identified as major issue and work was conducted with supplier to find a solution) (Starbucks)
- Using a life cycle approach when considering alternatives in all packaging decisions (McDonald's)
- Implementing tracking of supply chain impacts (Burger King, Pizza Hut)

3. Reduce Overall Packaging and Increase Efficiency

Right sizing and light-weighting are two key themes in packaging efficiency, and investments in this area tend to pay off with reduced costs and transportation benefits. Leaders like McDonald's have found ways to reimagine and reconstruct basic paper-based components to reduce the amount of fiber used in the packaging product by incorporating design elements like fluting and corrugation to provide strength to packages made with lighter basis weight paper grades. In addition, small strategic nips and tucks to tray liners and napkins can significantly reduce fiber use as well.

Additional examples of reducing overall packaging and increasing efficiency include:

- Changed design (reduced size) of bun tray liners by 10cm and saved 84 tons of paper in 2010 (McDonald's UK)
- Reduced paper use by 21% in napkins (McDonald's)
- Reduced the amount of paper fiber used in its pizza boxes by 15% in the last decade (5% in the last 3 years) (Pizza Hut)
- Re-engineered corrugated boxes, saving 2 million pounds of corrugated materials (Subway)

4. Increase the Use of Recycled Fiber

The smartest place to begin when addressing materials use in packaging is to dramatically increase the amount of recycled fiber in all packaging. Many companies have started with low-hanging fruit like bags and napkins. Some of the industry leaders have started digging deeper into cups, boxes, and other containers. For example, Starbucks has worked hard to overcome old brand prejudices and regulatory grey areas to bring a 10% post-consumer recycled hot beverage cup to market.

Additional examples of increasing the use of recycled fiber include:

- Required a minimum of 35% post-consumer recycled content in all corrugated shipping boxes (McDonald's)
- Switched to 100% post-consumer recycled bags (Bojangles)
- Napkins made from 100% recycled material and fibers (90% post-consumer) and catering lunch boxes made from 100% recycled paperboard (35% post-consumer) (Quiznos)

5. Eliminate Paper Originating from Controversial Forestry Practices

Beyond maximizing recycled fiber, the smartest way for a company to reduce the impacts of its packaging on forests is to choose FSC certified products to ensure sourcing from a responsibly managed working forest landscape. Additional leadership comes from companies that recognize the Sustainable Forestry Initiative (SFI) is greenwashing and eliminate this fiber from their supply chain. For example, McDonald's 2011 Sustainable Land Use Management Commitment communicates clearly to the company's many suppliers the expectation for a transparent and certified FSC supply of forest products, and the company has taken special care to include work on eliminating sourcing from protected lands and natural forests converted to tree plantations.

Additional examples of eliminating paper originating from controversial forestry practices include:

- Avoid SFI as its use is considered a liability in the industry (Starbucks)
- 80% of paper and board is either recycled or from 'certified' sustainable sources; 61% of virgin paper and board from 'certified' sustainable sources (McDonald's, Europe)
- Cup paperboard from FSC certified sources (Tim Horton's)

6. Increase In-Store Recycling and Recovery

There are big challenges to recycling for the fast food industry as a whole. First, packaging that ends up in the hands of the customer is beyond the direct control of the company. Second, food packaging is not widely accepted by recyclers. Leaders in the sector are working to address both problems simultaneously. For example, Starbucks, Tim Horton and Yum! Brands are working together with the food service packaging industry as part of the Recovered Paper Alliance to develop the necessary collection infrastructure, expand the end use markets for recovered fiber, educate consumers to increase recovery, and collaborate with government officials to ensure appropriate public policy.

Additional examples of in-store recycling and recovery include:

- Re-usable cups promotion; sponsored Beta Cup Challenge to generate ideas on how to increase the use of reusable cups in-store with cash prizes; offers a 10-cent discount in U.S. & Canada to encourage customers to use their own reusable mugs or tumblers for their beverages with goal of reaching 25% use by 2015 (Starbucks)
- Instituted a national in-store recycling program across the entire chain as the first of its kind for a major fast food company (Subway)
- Front-of-store recycling in select locations. (Burger King, Germany and Korea, Starbucks, Tim Horton's)

7. Eliminate Toxic Inks, Coatings and Labels

Every last bit of packaging has something printed on it. Toxic inks, coatings, and labels have been shown to have a negative impact on human health. In addition to the concern over the potential toxicity of the pigments and materials used for dying and printing, poor choices can affect the recyclability of packaging, and it is important that whatever is printed on or affixed to the packaging is safe and does not interfere with end-of-life considerations. Leaders like Starbucks are balancing the need for brand exposure with these issues by looking to water-based inks and inks that do not interfere in the recycling process.

Additional examples of eliminating toxic inks, coatings, and labels include:

- Food safety issues are met by preference for water-based ink colors (Starbucks, Tim Horton's)
- Impacts of ink on recyclability are taken into account (when ink is printed directly it is harder to recycle) (Starbucks)
- Converted to unbleached paper carry-out bags, coffee filters, Big Mac wraps, and napkins. Switched from polystyrene foam "clamshells" to paper-based wraps for sandwich packaging (McDonald's)

8. Reduce Carbon Footprint

Key changes in sourcing that include using more recycled fiber and managing forests more responsibly can have a significant impact on a company's carbon footprint. Additionally, often one of the largest components of a product's carbon footprint is from transportation. Logistics and efficiency are important tools for reducing the CO2 impact associated with transportation. Leaders like McDonald's are thinking outside the box to find solutions like their innovative bulk cooking oil delivery program.

Additional examples of reducing the carbon footprint include:

- Instituted Environmental Packaging Scorecard to track suppliers overall carbon emissions (McDonalds)
- Pilot program with suppliers and key distribution partners to test the feasibility of using reusable plastic corrugated cases to replace corrugated cardboard in the coffee distribution system (Tim Horton's)
- Reduced the shipping cube for certain items by 14% over expanded polystyrene foam (KFC-YUM! Brands)

Part Three: SUSTAINABLE PACKAGING GUIDE: PLAN FOR IMPROVEMENT

Even the short review conducted in Part II reveals the importance of a sustained and focused effort to reduce the impact of fast food packaging. As a corrective to the scattered efforts detailed above, in Part III of this report we provide guidelines for a stepwise approach for improving sustainability outcomes in packaging practices in the fast food industry. For best results, practices are translated into actions based on the identified attributes, current industry best practices, and expert opinions to identify best available options even if examples do not currently exist.

1. Corporate leadership and public commitment
2. Use of life cycle and supply chain approaches to identifying and reducing environmental impacts
3. Material use that addresses:
   - Design considerations: "Lighter, Stronger, Smarter"
   - Recycled fiber and materials choice
   - Elimination of controversial fiber sources
   - Managing human health concerns
4. Consumer-related end-of-life strategies for resource and material efficiency
5. Logistics – transportation and carbon footprint

CORPORATE LEADERSHIP AND PUBLIC COMMITMENT

Rationale: Public commitment to sustainable packaging practices together with management buy-in is essential to implementing policies and programs in all other categories and achieving success over the long term. Hard work ahead begins with two simple steps – educating company leadership about the importance of sustainable packaging, and developing an environmental packaging policy.
At a minimum, that policy should set forth specific goals and include commitments to:

1. Eliminate waste by reducing the overall use of packaging, and by increasing the utilization of innovative packaging design
2. Increase the use of post-consumer recycled fiber in all packaging types
3. Improve fiber sourcing for non-recycled material that eliminates paper and materials sourced from endangered forests, conversion of natural forests to plantations, and other worst-of-the-worst practices in the woods
4. Expand the use of FSC certified packaging
5. Expand the recovery of packaging through in-store recycling and other strategies

With a policy in hand, the work of implementing the policy company-wide and through the supply chain can be achieved by following some of these short and mid-term steps:

Short-Term:

- Adopt a definition of sustainable packaging and clear criteria measuring packaging performance
- Define sustainable packaging goals with a clear timeline and quantitative targets
- Track sustainable packaging and waste reduction activities and document in an annual public report with full transparency (e.g, Corporate Annual Report, Corporate Social Responsibility Report)
- Join a packaging group/alliance (e.g. Sustainable Packaging Coalition)
- Identify responsibilities for packaging decision-making within the organization and consider its effectiveness in carrying out sustainability choices
- Review third party certification processes for packaging products and use as appropriate
- Monitor regulatory developments related to toxicity in packaging, conduct regular risk assessments for potential liabilities, and establish strategies for managing risks
- Use third party auditing to check the accuracy of the company claims and efforts

Mid- to Long-Term:

- Track and verify in a transparent manner progress towards achieving the objectives as set forth in the policy
- Work with suppliers on supply chain sustainability challenges
- Create an implementation assessment and assurance process for all programs related to sustainable packaging
- Develop a supply chain approach through an index, suppliers questionnaire, or use an existing tool (see survey example in appendix)
- Measure progress and update goals and timelines

USE OF LIFE CYCLE AND SUPPLY CHAIN APPROACH TO IDENTIFYING AND REDUCING ENVIRONMENTAL IMPACTS

Rationale: Use of life cycle assessment (LCA) considerations in purchasing and selection of materials, products, and suppliers provides a comprehensive quantitative approach to measuring and reducing the environmental impacts of packaging and enables companies to select the most eco-efficient and cost-effective solutions to pursue.

By utilizing the best available LCA science to analyze the packaging supply chain, the following short and mid-term steps can be taken to implement an environmental packaging policy:
Short-Term:

- Use available LCA data where possible in order to make sustainable packaging decisions
- For paper-based products, consider a product's life cycle from timber harvesting, through paper production, transportation, storage, distribution, consumption, and end-of-life scenarios Such data may be available from suppliers, online, sustainable packaging groups, etc.
- Support LCA studies related to the materials and products you use

Mid- to Long-Term:

- Work with suppliers to identify the environmental impacts of products upstream and downstream
- Consider an in-house LCA on key products to include impact categories such as:
  - Global warming / carbon intensity
  - Cumulative energy demand
  - Land use
  - Water use
  - Solid waste
  - Human toxicity
  - Eco-toxicity

- Use LCA results in active decision-making
- Develop supplier's evaluation tool with areas for improvements based on LCA approach
- Collaborate with partners and contribute to a database on an LCA for the fast food industry in order to facilitate the transition to sustainable packaging across the industry

MATERIALS USE

Design Considerations: "Lighter, Stronger, Smarter"

Rationale: Preferred packaging optimizes materials and resources through strategies such as minimizing energy and water use, using compostable or biodegradable materials, minimizing the amount of materials to achieve a specified level of functionality ("light-weighting strategies"), and de-materializing the supply chain through reuse, recycling, and management practices.

The easiest way to make an impact and save money for a company is to eliminate unnecessary packaging and utilize smarter design to reduce the overall use of materials in existing packaging. The following short and mid-term strategies will help in the implementation of this process:

Short-Term:

- Analyze the sustainability of current packaging products together with company designers, engineers and other relevant professionals in terms of materials used, weight, and design
- Look at the entire suite of current packaging and seek opportunities to eliminate unnecessary material and packaging
- Give preference to higher recycled and compostable content in food contact and non-food contact products
- Use sustainable packaging experts to identify alternatives
- Follow latest developments and innovation in forums and packaging groups/alliances and partner with industry leaders (e.g. Starbucks' Cup Summit)

Mid-Long term:

- Include "design for the environment" concepts into design considerations
- Incorporate sustainability criteria in purchasing decisions and look for new suppliers as needed
- Specify end-of-life criteria in product design
- Partner with industry leaders on sustainable packaging research and initiatives

Recycled Fiber and Materials Choice:

Rationale: Recycled paper is better for the environment than virgin paper. Rigorous scientific research supports the benefits of recycled paper, and government agencies, environmental groups, and many other large purchasers have adopted policies mandating its use. This helps preserve forests, reduces demand for wood, conserves resources, generates less pollution during manufacturing, and reduces solid waste by diverting usable paper from the waste stream.

The following short and mid-term recommendations will help increase the overall use of recycled fiber in the supply chain:

Short-Term:

- Set explicit goals for increasing recycled content in packaging
- Look first for post-consumer recycled (or de-inked) content, but then look for pre-consumer recycled fiber
- Develop a timeline to review existing paper choices for opportunities to switch from virgin to recycled fiber
- Manage material choices based on material type (paper vs. plastic, recycled vs. virgin, recyclability, etc.)

Mid-Long term:

- Join organizations working to update the regulatory field to maximize the use of recycled fiber where safe
- Work with brand teams to identify how to include specific attributes of recycled fiber into brand design
- Join efforts to transition the recycling collection system from a "trash-based" management system to a resource management system

Elimination of Controversial Fiber Sources:

Rationale: Paper production currently is the single largest threat to Southern US forests as well as forests around the world. When forests are destroyed or converted to monoculture pine plantations for large-scale, short-term paper production, all of the forest benefits disappear, and both the forest and the surrounding communities are greatly harmed. Forest health and sustainable management considerations along the supply chain are critical for the US and international biodiversity of forest ecosystems. Additionally, this assures ecosystem services are maintained or enhanced.

In general, the following short and mid-term recommendations will require direct engagement with suppliers and other stakeholders to improve on-the-ground forest practices in the supply chain:

Short-Term:

- Identify origin of product supply chains (countries/regions/mills) and identify environmental pressures and practices related to them
- Engage with conservation organizations concerned about environmental impacts in sourcing regions to understand and address concerns
- Eliminate any product lines containing an SFI certification label, and eliminate references to the SFI on any promotional materials outlining your companies sustainable packaging initiatives
- Ask suppliers to provide you with clear evidence of fiber tracking to ensure that none of your paper packaging originates from plantations established at the expense of natural forests or from endangered forests

Mid- to Long-Term:

- Shift contracts to suppliers who are working through the supply chain to eliminate controversial sources and increase production of FSC certified products
- Engage your suppliers and conservation groups in identifying important conservation data gaps and help support efforts such as conservation mapping in key supply regions
- Identify and help find solutions to expanding FSC certification in key supply regions such as the Southern US. (For example, Carbon Canopy – www.carboncanopy.org)
- Develop forest cut offset programs and consider partnerships with NGOs, local authorities, and other industry leaders

Managing Human Health Concerns:

Rationale: Human health is a major concern in some packaging applications, especially when the packaging has direct contact with food. Governments in North America and elsewhere are beginning to look at regulation in this area, and it is critical to stay ahead of the curve.

The following list of short and mid-term recommendations will aid in minimizing health risks:

Short-Term:

- Ask suppliers to provide information regarding potentially hazardous chemicals in the product itself as well as any coatings, adhesives, resins, inks, and/or stickers
- Identify products currently in use that include chemicals listed as endocrine disruptors, persistent bioaccumulative toxics (PBTs), carcinogens, or reproductive toxicants
- Familiarize with and follow updates on governmental regulations on chemicals commonly used in the industry (for example, the US National Toxicology Program) and stay ahead of the curve
- Manage material choices based on material type (paper vs. plastic, recycled vs. virgin, recyclability, etc.)
- Request information regarding chlorine or chlorine compounds used in production
- Shop for alternative products without known harmful substances (see appendix)

Mid- to Long-Term:

- Consider alternative purchasing options, for example: using soy ink, water-base dyeing, and de-dyeing technologies to replace toxicity of the colors and materials used for dyeing and printing ink and labeling
- Invest in research for alternatives; collaborate with leading organizations in that area
- Help suppliers to develop alternative solutions
- Seek to eliminate all toxic materials in product use

CONSUMER-RELATED END-OF-LIFE STRATEGIES FOR RESOURCE AND MATERIAL EFFICIENCY

Rationale: Companies can improve the recyclability of their products and packages, but without engaging consumers in disposal and recycling within the local infrastructure constraints, sometimes very little can be achieved in practice. Therefore it is important to address the ease of consumer disposal, come up with management strategies for encouraging recycling and reuse practices, and identify strategies for working with the local solid waste infrastructure at each store location.

The following list of short and mid-term strategies will support the maximum recovery of recyclable and compostable packaging and food waste:

Short-Term:

- Conduct a waste audit identifying types and quantities of wastes, recyclables, compostables, etc. and existing end-of-life options for packaging
- For stores where the infrastructure supports recycling and/or composting, provide consumers with easy access to recycling, re-use or other consumer-focused end-of-life strategies
- Clearly label take-out products regarding recyclability, compostability, etc.
- Develop a company-wide end-of-life strategy for both the internal packaging used by the company for intermediate products as well as packaging for costumers
- Design for end-of-life collection, such as easily accessible and marked recycling bins, clear marking of product sustainability, placement of reverse vending machines (able to accommodate cups, plastic bottles, glass and cans), etc.
- Consider placement of disposables at the counter (napkins, containers, etc.) and their possible impact on customer choices and behavior

Mid- to Long-Term:

- Use packaging that is consistent with maximum recyclability and/or compostability
- Develop employee and customer education and behavior changing strategies to maximize effectiveness of packaging and organic waste diversion programs
- Assign responsibility for identifying the local solid waste infrastructure applicable to stores, and assess local infrastructure opportunities and constraints for current packaging. Approach stakeholders and initiate discussion.
- Work with government, nonprofits, and solid waste companies to develop incentives for required infrastructure and to increase demand for use of the infrastructure
- Measure recycling rates and adjust programs as needed to maintain continuous improvement
- Coordinate with agencies and waste/recycling providers to assure that collected wastes are properly transferred to the designated facility and that recyclables are recycled, compostables, composted, etc.
- Include food waste considerations in choice of packaging: for example, is the portion/amount of food that is served determined by packaging?

LOGISTICS – TRANSPORTATION AND CARBON FOOTPRINT

Rationale: By addressing supply through reduction of packaging, increased use of recycled fiber, and eliminating controversial sources of paper a company can dramatically reduce its overall carbon footprint. In addition to these important steps identified above, volume and weight of both product packaging and external shipping packaging along with operational choices can contribute to a smaller carbon footprint as well as decrease other environmental and ecosystem service impacts such as energy use, water quality, and air pollution.

The following short and mid-term recommendations can support cost savings and decrease the overall carbon footprint:

Short-Term:

- Assess the transportation impacts related to packaging operations
- Evaluate practices such as distance travelled, pallet configurations, use of automatic palletizers, and the choice of transportation mode that affects efficiency and fuel consumption and carbon footprint performance

Mid- Long term:

- Evaluate the impact of the transportation segment in the product life cycle
- Evaluate the impact of changing volume and weight of packaging products on the overall transportation impact
- Consider switching to local suppliers

Following the above stepwise approach to greening packaging and the supply chain can be challenging, and so we are here to help. In addition to utilizing the simple survey tool below, we would love to support your effort. Contact our Corporate Engagement Director, Andrew Goldberg at 828.251.2525 x19 or andrew@dogwoodalliance.org.

Appendix 1: SAMPLE SURVEY FOR MANUFACTURERS OF PAPER-BASED PACKAGING PRODUCTS IN THE FAST FOOD INDUSTRY

Note to manufacturer: If the answers to the following questions vary according to product (bags, hot cups, cups, labels, molded fiber trays, molded fiber cup carriers, pizza boxes, paper rolls, napkins, take-out containers, wrappers, etc.) or product line, please complete a survey for each product or product line.

Product:

Materials list:	Material name	Percentage in product
1		
2		
3		
4		

1. Have you developed or initiated development of a sustainable packaging policy?
   YES___ NO___ IN PROCESS___

2. Did you conduct an LCA study for this product?
   YES___ NO___ IN PROCESS___

3. Have you communicated with your supplier about where they source wood fiber?
   YES___ NO___ IN PROCESS___

4. Are all environmental claims labeled on the product backed with certification from a reliable certifier or based on available scientific evidence?
   (See Federal Trade Commission guide: http://www.ftc.gov/bcp/grnrule/guides980427.htm)
   YES___ NO___ OTHER___

5. Products made from virgin harvested wood fiber:
   Is the virgin harvested wood fiber material certified by the Forest Stewardship Council (see http://www.fsc.org/)
   YES___ NO ___ Not applicable____ Other certifications (please list) _____

6. Recycled content:
   Recycled content of non-food contact items:
   0-10% 10-30% 30-50% 50-70% 70-90% >90%
   Or
   Recycled content of food contact items:
   0-10% 10-30% 30-50% 50-70% 70-90% >90%

7. Where was the product manufactured?
   The United States_____ Other_____

8. Does the product include coatings, adhesives, resins, inks, and/or stickers that contain any chemicals appearing on the following:

   Endocrine Disruptors List: European Union list of 66 substances with classification high, medium or low exposure concern (List is available on: http://ec.europa.eu/environment/docum/pdf/bkh_annex_15.pdf)
   YES___ NO___

   Persistent Bioaccumulative Toxic (PBT) Chemicals: US EPA list (Available on: http://www.epa.gov/fedrgstr/EPA-WASTE/1999/October/Day-29/f28169.htm)
   YES ___ NO___

   Carcinogens: US National Toxicology Program List (http://ntp.niehs.nih.gov/ntpweb/index.cfm?objectid=72016262-BDB7-CEBA-FA60E922B18C2540)
   YES___ NO ___

   Reproductive Toxicants (chemicals identified as being "toxic to reproduction"): European Union list (available here: http://ec.europa.eu/enterprise/sectors/chemicals/files/markrestr/1976l0769_en_03_10_2007_en.pdf
   YES___ NO___

9. Does this product including coatings, adhesives, resins, inks, and/or stickers that contain organohalogen-based chemicals? (Any chemicals that contain chlorine, bromine, fluorine, or iodine bonded to a carbon atom)
   YES ___ NO___

10. Have all of the additives used in the product, coatings, adhesives, resins, inks, and/or stickers been comprehensively tested for the hazards they may pose to human health and environment-tested for persistence, bioaccumulation, and toxicity?
    YES___ NO___

11. Has this product been produced with the use of chlorine or chlorine compounds?
    (See http://www.chlorinefreeproducts.org/marks.htm)
    YES ___ NO___ Not applicable___

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