Guidelines for

SUSTAINABILITY IN SUPPLY CHAINS

Thinking Systems for Business Sustainability

Australian Government
Department of the Environment, Water, Heritage and the Arts

ARIES
AUSTRALIAN RESEARCH INSTITUTE IN EDUCATION FOR SUSTAINABILITY

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Sustainability issues are often very complex and associated with high levels of uncertainty. There is a lack of clear criteria to guide sustainability decision-making because sustainability crosses many systems (e.g. corporations, business units, local communities, values, policies and regulations). This is particularly so in relation to supply chain management.

The Australian Government Department of the Environment, Water, Heritage and the Arts (DEWHA) commissioned the Australian Research Institute in Education for Sustainability (ARIES) and Link Strategy to develop guidelines with the aim of helping decision makers apply a systems-based and learning-for-change approach to sustainability in the supply chain.

The guidelines offer organisations the means to find cost effective ways to include more sustainable practices into everyday management and decision-making forums that impact on the supply chain. These guidelines include case studies of three different supply chains to illustrate the range of challenges, decisions and benefits associated with implementing sustainability. This booklet also provides a set of criteria which the decision maker can use to make more holistic and systemic decisions about how to achieve even better sustainable management practices.

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CONTENTS

WORKING TOGETHER CAN BE EXCITING

The challenges to achieving a more sustainable supply chain are often complex, with many influences. The inter-organisational learning that comes with collaboration can develop new skills and improve operations, as well as increase the transparency and verification of sustainable products and services.

Your products and services are only as good as the weakest link in your supply chain.

INTRODUCTION

Companies frequently undervalue their corporate brand by failing to assess supply chain sustainability risks. Sometimes this happens because they have no direct control over these companies or it is considered too expensive and time consuming, or because they have no confidence in their ability to gain compliance in off-shore manufacturing companies. In effect, they allow their reputations and their brands' credibility to be tarnished through product withdrawals, negative publicity and ill-focused supply chain management.

How a business achieves increasing confidence about its ability to manage sustainability is the subject of much discussion. Once initial baseline data has been developed on water, energy, waste and so forth, the journey usually turns to the supply chain and to the broader stakeholder relationships with suppliers and customers.

Profit maximisation may cease to be a listed company's paramount objective as shareholders become more discerning about the sustainability values of the companies they invest in, and more aware of 'greenwash'. The social boundaries have shifted. Concerns about being socially responsible and sustainable are changing the way consumers view companies and their products. A company's responsibility no longer stops at the factory door. Companies need to show leadership and manage their local and far flung component factories to the same environmental and social standards. As sustainability best practices become better defined, they will increasingly become incorporated into assurances required by insurers for due diligence.

Supply chains, in the context of the discussion in these guidelines, demonstrate a wide range of sustainability strategies across organisations that support the development of sustainable products and services.

Thinking systemically requires people to think critically about their assumptions and interests. It asks individuals to consider the impacts of the solution(s) on the external and internal environment, and vice versa.

But how do companies start the process of managing their supply chains? Supply chains are very complex systems that involve multiple social interactions. One best practice approach to assess the complexity of the process is to use collaborative learning approaches to engage people in the organisation to undertake a critical systems analysis. Such an analysis begins by mapping the interactions between supply chain systems and sub-systems; then identifying the sustainability risks and opportunities in the system; and finally linking these risks and opportunities with multi-disciplinary supply chain teams.

INTRODUCTION (CONT.)

THREE CASE STUDIES

This booklet explores three case studies that used a systems approach combined with education for sustainability. The case studies illustrate how, by taking a proactive, systemic approach and by involving the supply chain stakeholders in an ongoing process of thinking and learning, risks can be identified; strategy and policy can be developed; and opportunities can be created for reducing costs and for developing new products.

The case studies are diverse and deal in turn with:

- sustainable concrete – the challenges of defining complex problems and working with multiple stakeholders on solutions
- food distribution and transport systems – the challenges of building collaborative research and development (R&D) partnerships in the bread transport network
- branding sugar – how the sugar industry worked with the whole supply chain to explore options for branding their sustainability initiatives.

Each study used different aspects of the systems approach, but the participating companies all had some common objectives. Each wanted to:

- mitigate product price increases, given the likelihood of substantial increases in costs of energy and other resources
- manage predicted operating cost increases associated with emissions trading schemes (ETS)
- attract and retain staff
- develop sustainability branding and enhance their position as a leader in sustainable management
- explore new R&D opportunities with other companies in their supply chain.

DECISION SUPPORT TOOLS

Learning and organisational change take time and involve new skills. People need time to make sense of new ideas and ways of doing business. Corporate culture can enable innovation and sustainability practices by creating a safe environment to experiment.

Decision support tools are an essential part of the systemic analysis. Visually mapping supply chains and identifying the interactions between companies, helps create a shared understanding and a record of the analytical steps. These guidelines use a range of diagrams to illustrate the systemic analysis steps, such as walking the supply chain, multi-stakeholder analysis, Pressure/State/Response model, and process flow charts. More information on these tools can be found at www.linkstrategy.com.au.

Managers and executives need to be well armed with information and management strategies to deal with the diversity and complexity of challenges. The guidelines promote the value of creating a 'tool box' of policies, procedures and strategies that collectively demonstrate the sustainability credentials and ongoing journey towards more sustainable business practices, within the organisation.

Three stages in an ongoing cycle of systemic thinking, learning and reflection:

OBSERVE

Review the current state of play.

Review the current market position, resources, key customers and sustainability initiatives and policies. Identify the issues, the problems and the opportunities.

Define the systems and how they interact.

Define the systems and the boundaries of the systems of interest and the supply chain stakeholders. Share perspectives and reflect on how individuals work with the system and how the organisations (corporate, NGO and governments) interact with the supply chain.

PLAN

Determine what, where and how to influence the systems and with whom.

Establish the priorities and what you want to influence. What are the barriers and the opportunities for improving sustainability performance? Who are the champions and what tools can be used to influence change towards more sustainable outcomes? Who should you collaborate with and how?

ACT

Develop new processes, partnerships, products and services – and communicate outcomes.

Develop strategies and policies to influence the systems and align with your current business model. Create a 'tool box' with marketing, communication and training material. Design new products and services with supporting websites and labelling to explain the sustainability journey of the organisation.

These stages are not necessarily linear nor discrete. Which stage needs more time and resources will depend on the issues and who is involved.

THE THINKING SYSTEMS APPROACH

Demonstrating an organisation's sustainability is more than just effective compliance with carbon regulations. It affects all levels of the organisation. These case studies used a *thinking systems* approach that incorporates *education for sustainability* learning methods (observe, plan, act) in an ongoing cycle of *thinking*, *learning* and *reflection*. This enables organisations to effectively manage issues and think about the future holistically and flexibly.

Our environment is laced with complex systems. Economies, the environment and technological development are all complex systems. Each system is intrinsically linked with others, creating very complex systems. Almost all natural systems are complex systems, including people, and they have varying degrees of resilience. An understanding of complexity and resilience is vital to organisations and individuals if they are to recover quickly after a crisis. How resilient is your supply chain to future shocks? Do you understand the complexity of your business?

A supply chain is a set of interconnected systems and sub-systems with a complex set of interactions. It is a series of management and operational systems and sub-systems that share a common purpose – the provision of products and services. While there are many definitions of complexity, these guidelines aim to help individuals and companies expand their capacity to:

- understand the diversity and complexity of sustainability challenges
- define systemic problems and challenge assumptions about 'business as usual'
- work collaboratively with suppliers and stakeholders on joint ventures, and develop a culture of ongoing collaboration and learning in the supply chain
- create flexible and effective management practices for influencing change.

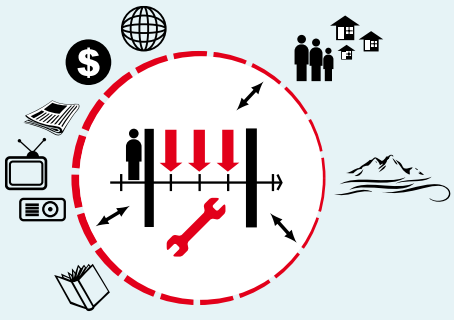
Thinking systemically about your organisation

This systems diagram shows how every organisation is part of a larger system made up of society, the natural environment and the financial system. No system operates in isolation from these external factors: local and global systems constantly influence how an organisation operates, and conversely, an organisation can influence how society operates.

The icons on the outer edge of the diagram show a range of external influences on an organisation, such as environmental issues, the media, global events, society and consumers, and the financial markets.

Each organisation has a range of tools (the spanners) for managing internal and external issues. Your tool box includes policies for procurement, training material, audits and so forth. These tools help define the processes and operations that enable products and services to be sustainable and effectively delivered. For example, a packaging policy defines the material used.

The red and black arrows in both diagrams illustrate that there are a range of potential points where an organisation is being influenced (for example, through audits, certification and regulatory policies) and where the organisation can influence the system (for example labelling and packaging, waste management and purchasing choices).



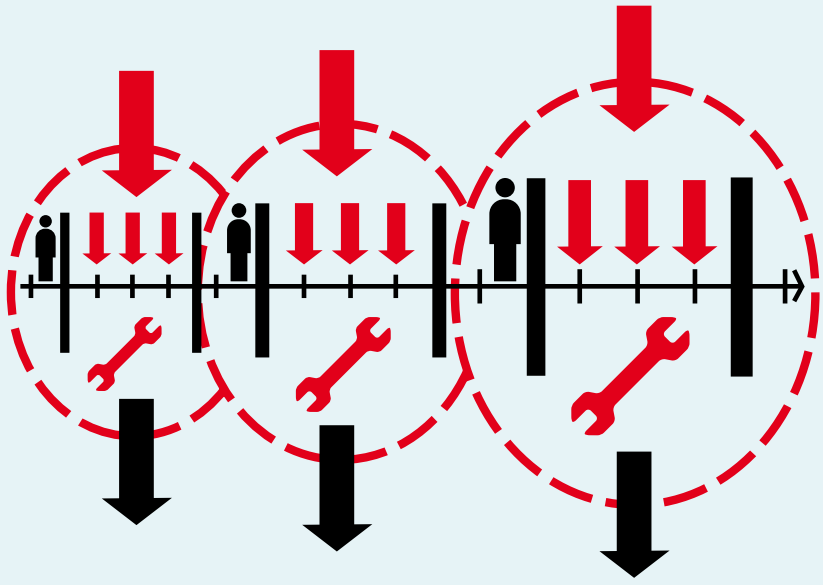
Thinking systemically about where your business is placed in the supply chain

Companies frequently benchmark themselves against industry competitors, but no two firms are ever directly comparable. Thinking systemically about your company as part of a supply chain system can be just as powerful. Understanding where your business is placed, reviewing the risks and exploring opportunities to collaborate can make your products and services more competitive, improve your product efficiency and increase the likelihood of innovation.

Using transformational projects to create systemic change

Transformational projects focus on changing a current state to a desired future state. Once teams have worked across corporate sectors and supply chains to share knowledge, and define problems and solutions, then projects can also be defined.

Some projects will tend towards a research and development focus while others will involve an operational change, product development or overcoming systemic barriers to better sustainable practices. Most transformational projects have elements of both research and organisational change because they engage staff in thinking about the culture, the desired future and the opportunities for change.



COLLABORATING CAN BE CHALLENGING

The Capgemini report, Future Supply Chain 2016, sees the future supply chain as a collaborative model where information sharing, collaborative warehousing and collaborative logistics define industry or geographical sectors.

Developing effective collaboration and networks of knowledge sharing among diverse and frequently competitive private and public agencies is not easy. Systemic solutions require a collaborative approach because no single person or entity can control the issue or determine its outcome.

A diversity of perspectives is needed to make sense of complex, systemic issues.

CASE STUDY 1: SUSTAINABLE CONCRETE

When considered in its entirety, the concrete industry is a tremendously complex one. At every stage – from quarry to finished building – numerous personnel are involved and the potential for wasted energy is enormous. There is pressure on this industry to become more sustainable, since concrete is so widely used in the built environment and since it is estimated that cement accounts for five per cent of the world's carbon dioxide emissions.

Given the complexity of this problem, the foundation companies for this study – Bovis Lend Lease, Stockland and Landcom – recognised the need to collaborate, and more than 20 companies participated in the life of the project. They also recognised the need for independent facilitation.

WORKING TOGETHER TO UNDERSTAND THE CONCRETE SUPPLY CHAIN

This case study focuses on the concrete supply chain and how a group of companies realised they needed to work collaboratively to understand the issues and to work towards solutions.

This case study uses critical systems analysis with multiple stakeholders to understand options for procuring sustainable concrete.

LEARNING OBJECTIVES:

- understanding the diversity of perspectives in the supply chain
- working with multiple stakeholders using critical systems analysis (CSA) and developing systemic thinking
- building ongoing dialogue and making sense of complex issues
- working with the barriers to change in the supply chain
- exploring critical systems analysis for developing corporate sustainability policy and strategy.

OBSERVE

Think about how you got to this point, where you are at now, and where you want to go to.

Once a sustainability team has been established, the next step in a critical systems analysis (CSA) is to build shared knowledge about the organisation as a system and the organisation as part of a larger system.

The process of critical systems thinking requires people to consider the interactions between the solution(s) to a problem and the external and internal environment.

Every individual and corporation in the supply chain differs in the way they value, perceive and define social, economic and environmental issues.

THE CHALLENGES

Extensive interviews and systemic analysis of the concrete supply chain were conducted to identify the key stakeholders, the barriers and the potential for change. The key participants – from Bovis Lend Lease, Stockland, Landcom, – and the Link Strategy and ARIES facilitators recognised that concrete was a complicated product with numerous inputs, uses and specifications. They detected a sense of powerlessness and inertia, and this was attributed to the complexity and interconnectedness of the industry. It became clear that the concrete industry embodied:

- a complex range of contractual relationships
- many vested interests, entrenched positions and lobby groups
- a wide range of opportunities and barriers to influence decision-making processes
- perceptions of high risk in relation to certain applications of sustainable concrete
- a culture of long hours and tight deadlines.

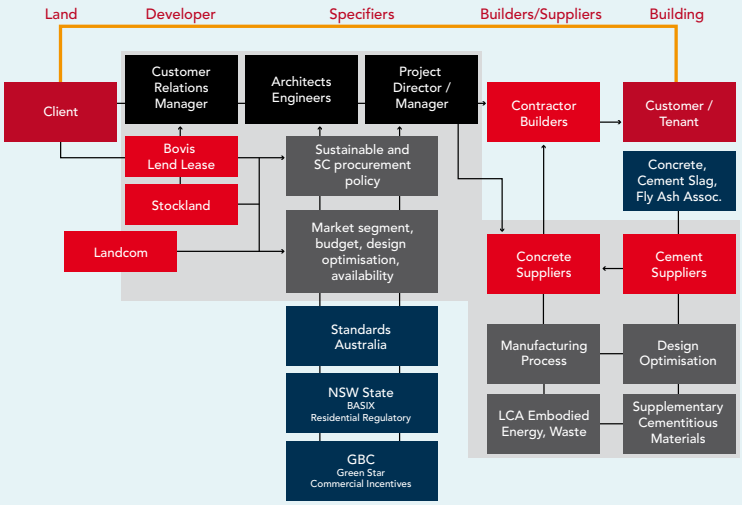
WHO WE WERE WORKING WITH

The sustainability team's vision included specific goals and strategies, such as the need to reduce greenhouse gas emissions, by working with suppliers and developing procurement policies and standards to increase awareness of energy efficiency initiatives and design options.

This diagram was developed after initial discussion with the key participants and was used to help define the boundaries of the systems, to discuss the roles of the supply chain stakeholders, and to help them explore the risks, uncertainty, influence and control, from their own point of view. The diagram, together with other learning material, was modified as new knowledge emerged.

The boundaries of the system analysis for this project extended from the developers through to building construction (represented by the grey background in the diagram above). Key sub-systems included transport and logistics; concrete and cement production; building policies and standards agencies; and environmental and social systems.

Construction / Sustainable concrete supply chain: Generic model



STEPS TO BUILDING AN UNDERSTANDING OF THE SYSTEM

1. Define core stakeholders in your corporation who influence or are affected by the issue, and identify key actors to be involved in the project. A diversity of professional perspectives is needed.
2. Identify relevant information resources (e.g. internal sustainability and procurement reports and policies).
3. Define the culture, including sources of power and the influence of key stakeholders.

Discuss:

- perceptions about and knowledge of sustainability
- different people's influence and levels of support
- perceptions of risk, sensitivities and politics.

PLAN

Establish supply chain forums to develop mutual understanding about the issues

Putting the 'system at the table' (a supply chain or inter-disciplinary group) is a powerful and effective approach to breaking down barriers and building common knowledge when working in multi-disciplinary forums. The PSR model below can be used to help define the drivers, current state and range of responses.

GETTING THE SUPPLY CHAIN INVOLVED

Eventually, major stakeholders were brought together in a focus group to develop a mutual understanding of the barriers and incentives towards a more sustainable construction sector. By the end of the session they were able to agree on ways each part of sector could contribute to the sustainability of the supply chain.

Depending on the position of the organisation in the supply chain, there are different imperatives, trade-offs and barriers. People also have a range of incentives and constraints to achieving outcomes.

An adaptation of the OECD's Pressure State Response (PSR) model was used as the framework for inquiry in the focus group. Strategy/action was added to the PSR model to emphasise the importance of strategic alignment to change for achieving better practices, the Response.

ELEMENTS OF THE PSR MODEL WERE ADAPTED FOR THE FORUM

- **Pressure** – the environmental, social or economic impacts or drivers (i.e. high CO^2 emissions from cement, concrete and construction operations, and fuel used for food distribution).
- **State** – the current practices that are contributing to these pressures (i.e. the production of concrete and the use of concrete in buildings and infrastructure).
- **Response** – the improved practices (i.e. that produce lower carbon in product and associated operations).
- **Strategy** (or actions) that enable these better practices of concrete management to reduce carbon in buildings and infrastructure.

A facilitator can help to neutralise any bias or power positioning within the group and keep the discussion on track and outcomes-orientated.

WHAT NEXT?

Participants indicated that for stronger collaboration throughout the concrete supply chain there needed to be consistent messages, policies and incentives for stakeholders. To build the capacity of people and organisations to understand the issues and to work effectively towards a sustainable concrete supply chain, the following recommendations were made:

- Develop a range of communication and education materials on the use of sustainable concrete products and processes for a broad range of stakeholders across the supply chain, such as project managers and suppliers.
- Improve decision-making support tools such as design, product and performance optimisation tools to enable more informed decision making at all levels of the supply chain.
- Develop incentives, standards and best practice performance specifications that provide assurance of the sustainable credentials of products, a consistent message and market drivers that do not lead to unintended/unsustainable outcomes.
- Develop contracts and procurement policies that encourage the use of sustainable concrete and support green building criteria.
- Encourage leadership and cultures within corporations that support sustainability practices in the concrete supply chain.

Circulate available information, both industry-wide and stakeholder-specific to help support decision making. This type of information enabled stakeholders to make better informed decisions about the options for sustainable design and the use of construction materials and how to best achieve sustainable outcomes.

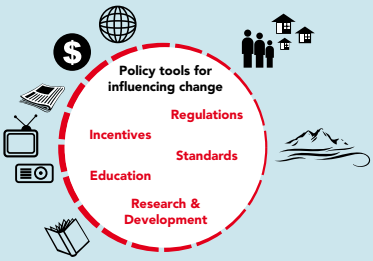
ACT

Use decision support tools to design future options

Discuss potential actions, get commitment from senior management and colleagues, and define objectives and expected outcomes.

Develop strategies and policies to influence the systems and align with the current business model.

A matrix and flow charts can help stakeholders review options and agree ways forward.



THINK, REFLECT, LEARN

LESSONS

Working together to engage multiple stakeholders in jointly diagnosing problems and exploring responses is essential because:

- each individual will have a different perspective on the problem definition and solutions
- the problem definition and solutions constantly evolve and take new forms throughout the project timeframe and afterwards
- learning together enables more holistic problem definition and leads to more effective solutions because a broad range of stakeholders become involved in the change process. This 'critical mass' in turn helps to embed new behaviour and cultural change across an organisation and through the supply chain.

KEY CHALLENGES WHEN WORKING WITH COMPLEX MULTI-STAKEHOLDER PROBLEMS

- Differing stakeholder and societal expectations, and unquestioned assumptions.
- Misaligned policies and incentives which can lead to unexpected outcomes.
- Political influence, vested interest and lobby groups.

THE OUTCOMES

Sustainability issues/problems are often hard to define because they have many systemic causes and effects. No one individual holds the solution, and quick fixes can produce unintended results. Past successes aren't a reliable guide either, because the 'solution' to a sustainability problem is only obvious with the benefit of hindsight. Solutions will emerge spontaneously under the right conditions.

- Companies identified the sustainability of concrete as an important, persistent problem that no one company or partnership in a construction (concrete) supply chain could fix.
- Multiple stakeholders (developers, construction firms, suppliers and competitors from the construction sector) forged new links, and exchanged information that improved understanding of the problem and systemic constraints to change.
- Through collaborative learning, stakeholders shared perspectives of the problem and identified potential solutions, such as alternative inputs and products, holistic design considerations, and trade-offs with energy efficiency.
- Participants expressed interest in having a neutral organisation which would continue the effort beyond this project timeframe, further communication and explore opportunities to develop marketable sustainable concrete products.

CASE STUDY 2: TRANSPORTING BREAD

Goodman Fielder (GF), one of the largest manufacturers and distributors of food in the Southern Hemisphere, implemented a formal sustainability program in 2007, which included initiating new environmental and social projects in collaboration with its stakeholders.

GF has now shifted its focus from environmental compliance to improving efficiencies, and is now addressing issues such as climate change by measuring the greenhouse gas (GHG) footprint of its supply chain logistics. This shift in focus was driven by senior management, who not only canvassed potential sustainability projects that went beyond GF's corporate boundary, but nominated the best people to lead the project and made sure the people and the project were properly resourced and supported.

ALTERNATIVE TRANSPORT FOR BAKING DELIVERY

This case focuses on the Baking Division's analysis of alternatives for its light-weight short-haul vehicles, and more specifically the delivery of bread throughout metropolitan Sydney. The baking delivery system is a 'spider web' from the distribution centre out to large and small retailers with fixed routes and low variability in load size and orders. This case study looks at the decisions they made and the tools that helped them choose the way forward.

This case study discusses how Goodman Fielder worked with a transport company, ORIX, to explore emerging alternative fuels, vehicle transport research and innovation options in their distribution networks.

LEARNING OBJECTIVES

- Exploring the challenges faced in the supply chain, particularly regarding logistics
- Examining measures to address these challenges
- Applying the systemic enquiry process
- Discussing the rationale behind various sustainability strategies.

OBSERVE

Establish a sustainability team

Start by exploring who needs to be involved, who needs to be kept in the loop and who would be an enthusiastic team player. You need a good mix of skills and a strong champion. There may be several project teams that report to the main sustainability team.

Scan for issues that currently impact the supply chain. Potential impacts of interventions (micro and macro) include societal and environmental issues.

Develop mutual understanding about sustainability goals and short- and long-term aspirations

1. Review your corporate strategies and policies (if any).
2. Discuss corporate sustainability policies.
3. Identify the principal drivers for change.
4. Define the gaps in knowledge.
5. Start defining the goals and targets.

THE CHALLENGES

Goodman Fielder's business and supply chains are highly complex. The shelf life of its products – which include fresh bread, frozen pastries, cooking oil, margarine, dips and biscuits – ranges from one day to several months, which in turn demands a range of storage and distribution systems.

Selecting the best sustainability project to focus on took time and effort from a wide range of GF staff and other industry players. For example, the preliminary discussions involved staff from the Baking, Commercial and Corporate Divisions – including specialists in supply chains, logistics, marketing, customer relations, environmental and sustainability management. This meant that divisions that had previously seen each other as separate businesses under the one corporate banner came together and learnt about each other's operations, so there were immediate benefits.

The key objective for GF was to find ways of reducing GHG per unit of product delivered, through such options as fuel efficiencies, substitute fuels or new engines.

Other goals were to:

- reduce exposure to increasing fuel costs by improving logistics
- prepare for emerging regulations such as an emissions trading scheme (ETS), which would provide strong cost incentives to reduce energy use and GHG emissions
- do the right thing by developing a corporate sustainability strategy, which required thinking about how to improve the sustainability of GF.

TRANSPORT, LOGISTICS AND FUEL EMERGED AS THE MAIN FOCUS

After several sessions of exploring potential projects and discussing project options with suppliers and customers, the Baking Division of GF decided to focus on improving the GHG footprint of its short-haul trucking fleet.

GF distributes 500,000 loaves of fresh bread each day in Sydney by contractors. Contractors are paid by commission on cents per unit sold, and so there is a strong incentive to reduce the per-unit delivery costs through improved efficiencies.

The logistics are staggering, but a software package called Transit helps to schedule distribution according to the most efficient routes.

THE BOUNDARIES OF THE SYSTEMS OF INTEREST

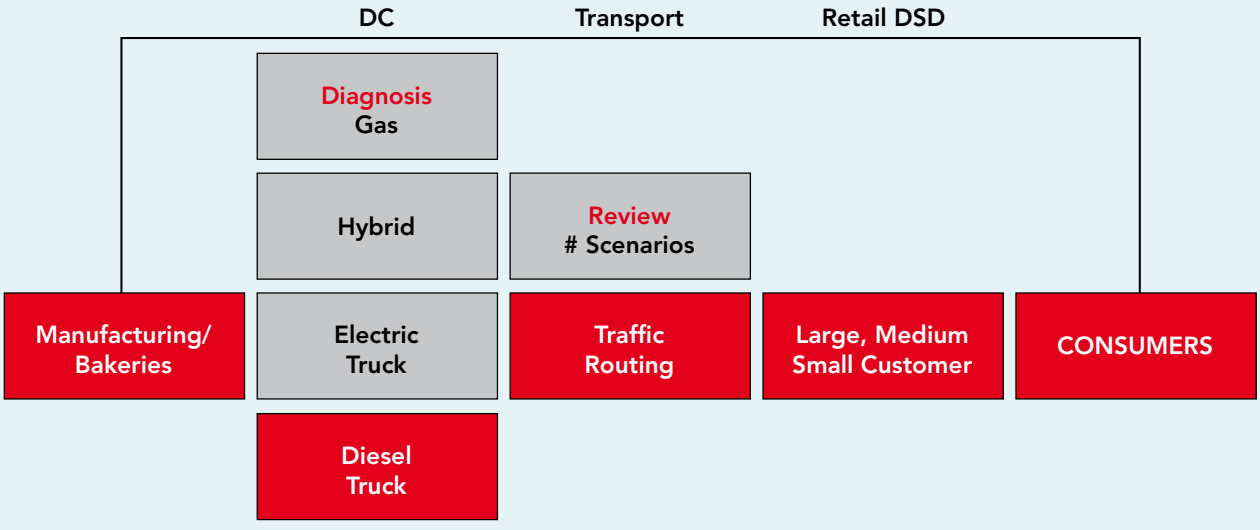
The boundaries were defined as being from the GF bakery distribution centre to retail distribution centres. Key sub-systems included: transport and logistics; the bakery; depot; trucks; transit; logistics; and environmental and social systems.

PLAN

Start to map out the system boundaries

Who are the key stakeholders? What are the systems of interest?

The next step is to gain an understanding of the knowledge and perspectives of key stakeholders. Once this process has commenced – and it is an ongoing one – a shared vision of an alternate future can be mapped.



Capture the diversity of views and identify how these impact on your systems

Debate the range of individual perceptions of risk, barriers, challenges and opportunities. Everyone has a unique perspective, and this diversity needs to be captured to reduce the risk of being blindsided by unintended outcomes when planning your projects.

Watch for what emerges!

Marketing people, for example, view sustainability issues through a very different lens from logistic experts, environmental lobbyists or government legislators.

THE BIG PICTURE

In a systemic inquiry into whole-of-supply-chain sustainability, participants scan for issues that currently impact the system. Potential impacts of making changes to the system should also be considered. The sustainability team identified reducing the company's greenhouse gas emissions as a key driver for this project. Regulations in this area are likely to become more stringent, and carbon intensive fuels more expensive.

Societal attitudes towards fuels were also considered important. The community considers petrol to be a major contributor to climate change, and community perceptions are likely to continue to turn consumers towards alternative fuels. Bio-fuels were not considered a viable alternative fuel, since GF is a food manufacturer and there is growing concern about the impact on global food supplies associated with using food for fuel. Electric vehicles drawing on coal-generated electricity along Australia's east coast could actually emit more GHGs than traditional fuels, so this was not a viable option either. Installing solar panels on factory roofs to charge the solar batteries used in electric vehicles was reviewed as a potential source of energy, should solar panels become more economically viable in the future.

Use decision support tools to plan your projects

For the analysis of transport we used a flow chart that helped the whole team see the stages of the systems analysis. This helped to align the current business and logistics processes with the changes being considered.

ALTERNATIVE FUELS

At this stage GF invited a representative from its commercial trucking fleet, ORIX, to participate in the project. In turn, ORIX brought in specialist suppliers of alternative fuel and transport technologies to present their products to the project team.

Suppliers were invited to provide detailed information about alternative vehicle and fuel options, including the advantages and disadvantages of each option, including their ability to help the company reduce its GHG emissions.

The suppliers informed the group about a range of issues concerning alternative fuels: the importance of driver skills (which can make a 10 per cent difference to fuel consumption); collaborative opportunities (six-month free trials for new hybrid electric vehicles); and the need for government assistance to install fuel depot infrastructure for compressed natural gas (CNG). Simply upgrading the vehicle fleet with new automatic manual transmissions (AMT) would result in economic and environmental benefits from lower diesel consumption. AMT helps take the 'bad driver' out of the equation – which in turn reduces maintenance and fuel costs.

One of the outcomes from the discussions was the opportunity for GF to work with ORIX and ISUZU on a collaborative six-month trial using a new hybrid diesel-electric truck, once the truck is available for use in Australia. GF staff will monitor the performance of the hybrid and build a better understanding of the operational implications of this new technology. The trial's progress will be communicated to GF staff and used to raise awareness of sustainability opportunities and challenges for the trucking fleet.

ACT

WHY COLLABORATE?

There is only so much that an individual company can influence within a supply chain. Systemic challenges, such as transport logistics, require collaboration with other supply chain companies. Each stakeholder needs to understand the risks and opportunities of collaboration.

Create a 'tool box' with marketing, communication and training material

Design new products and services with supporting media to explain the sustainability journey of your organisation.

THINK, REFLECT, LEARN

LESSONS

Recognise that sustainability issues frequently fall into the domain of high uncertainty and high risk problems. Sustainability decisions tend to lack clear criteria because behaviour is not usually predictable when different systems interact.

Be flexible

- Explore technology options with suppliers, users, scientists and other experts, as appropriate, using a range of tools.
- Challenge assumptions and technology/process options.
- Document analysis and key assumptions.
- Think about the potential unintended outcomes and how to manage them.

KEY CHALLENGES WHEN DEVELOPING COLLABORATIVE R&D PROJECTS

- Finding the right champions to lead and maintain momentum.
- Creating a supportive, trusting team culture that supports mistakes and shares data and new knowledge.
- Establishing mutual objectives and operational processes.

THE OUTCOMES

The challenge with transformational projects is to effectively incorporate long-term benefits such as 'doing the right thing', environmental resource efficiency strategies, staff attraction and retention, market access and brand credibility with short-term business objectives. In this case study we made some progress towards addressing both.

- Managers explored their values and the strategic importance of sustainability to their business and stakeholders, including employees, customers and investors.
- Overlaps were identified among current and emerging social, environmental and economic pressures and their potential impacts on core business.
- A feasible pilot was planned to reduce greenhouse emissions from fuel use, which pre-empted emerging regulatory and market pressures.
- There was collaboration across internal divisions and with external suppliers to share information and explore the issues, drivers and possible responses and impacts.

CASE STUDY 3: BRANDING SUSTAINABLE SUGAR

Years of increasing uncertainty in export commodity prices and a concurrent narrowing of margins in its terms of trade had challenged the sugar milling industry. So, as part of a long-term strategy to value-add at all points of the supply chain, and as part of a joint venture, the NSW Sugar Milling Co-operative (NSWSMC) built a sugar refinery and founded Manildra Harwood Sugars (MHS). MHS now produces around 150 types of packaged and bulk sugar products.

The sugar industry's most recent diversification has been electricity cogeneration plants at two of its three sugar mills. Supported by a shift to whole-of-crop green harvesting to provide a fuel source for the co-generation boilers, the plants each now produce approximately 200 GWH (gigawatt hours) of energy, enough to power about 60,000 houses.

SUGAR BRANDING

This case focuses on the Packaged Sugar Division's development of assurance systems, labelling and packaging to position itself in the sustainable products arena.

This case study looks at the decisions they made and the tools that helped them choose the way forward. Tools included walking the supply chain, supply chain mapping, multi-stakeholder dialogue and process flow charts.

This study looks at how the sugar industry explored branding sugar and developing a set of best management practices by working in a multi-disciplinary supply chain team.

LEARNING OBJECTIVES

- Multi-stakeholder engagement with whole-of-supply-chain working groups
- Assurance systems for branding sustainable products
- Policy and practice change – developing policies and processes for improving best practice management and assuring products.

OBSERVE

Define the boundaries of the systems of interest and your approach

Establish the operational and social boundaries of the systems. Decide how you will work with your supply chain stakeholders. This might include using:

- surveys
- semi-structured interviews
- internal workshops
- expert workshops
- a supply chain workshop
- a series of 'walk the supply chain' forums.

PLAN

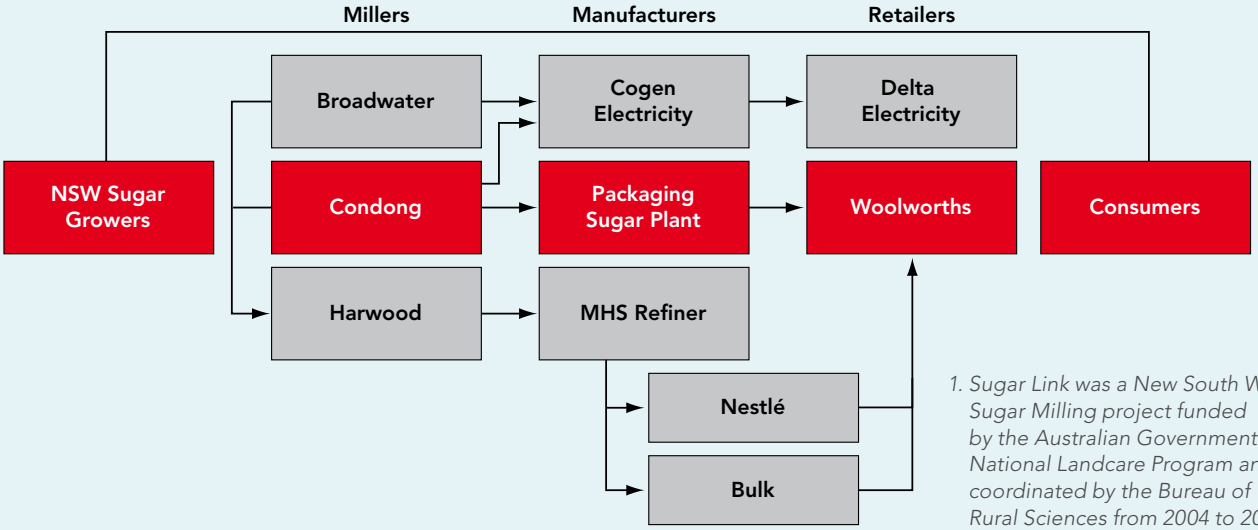
Identify the risks and opportunities for innovation upstream and downstream

Query 'business as usual' and challenge assumptions. Look for opportunities to develop new products and sustainable initiatives to promote. Identify government and industry policy tools that need to be reviewed when developing new products – e.g. Australian Competition and Consumer Commission (ACCC) and assurance systems.

WHO'S INVOLVED

NSWSMC knew that its products and corporate brand did not adequately reflect its commitment to sustainability: customers, growers and employees were unaware of the extent of the company's activities.

Sugar Link was a project that explored market incentives for sustainability through collaboration with supply chain partners. The Sugar Link team worked with the NSWSMC, MHS customers Woolworths and Nestlé, supply chain partner Delta Electricity, and the Australian Government[1] on defining sustainability initiatives, options for differentiating products based on sustainability criteria, and developing systems to support sustainable brand claims.



1. *Sugar Link was a New South Wales Sugar Milling project funded by the Australian Government National Landcare Program and coordinated by the Bureau of Rural Sciences from 2004 to 2005.*

During three industry workshops over an 18 month time frame, we walked the sugar supply chain from the paddock to the retail shelf. Local experts provided advice during tours of the farm, the mill, the refinery, the liquid sugar factory and a Woolworths supermarket in Sydney. Experts were invited to address the workshops on specialist areas including social assurance, environmental labelling and corporate branding. After each forum a summary was sent to participants and the outcomes were captured in a report, *Towards a sustainable sugar supply chain.*

WHAT EVOLVED?

Unlike luxury goods or organic produce, sugar is a commodity with only limited opportunity for price differentiation. Corporate sustainability branding through certain products provides a platform for future product positioning in an emerging market of conscientious consumers. NSWSMC decided to develop a new packet for their sugar in collaboration with the retail sector. The aim was to explore reflecting their sustainability initiatives and values in their products.

Many food products aim to provide voluntary information that links the consumer to the origin and provides assurances targeted at certain consumer purchasing behaviours and concerns. ACCC regulations were reviewed to assess what statements could be made. Options for developing a label (e.g. using a third party or self-declaration) and how labels aligned with NSWSMC corporate sustainability strategy were explored.

NSWSMC chose to make a declaration about their products and developed their own badge '*Committed to sustainable farming*'. A website was developed to support the products' claims. (www.sunshinesugar.com.au/sustainability.htm)

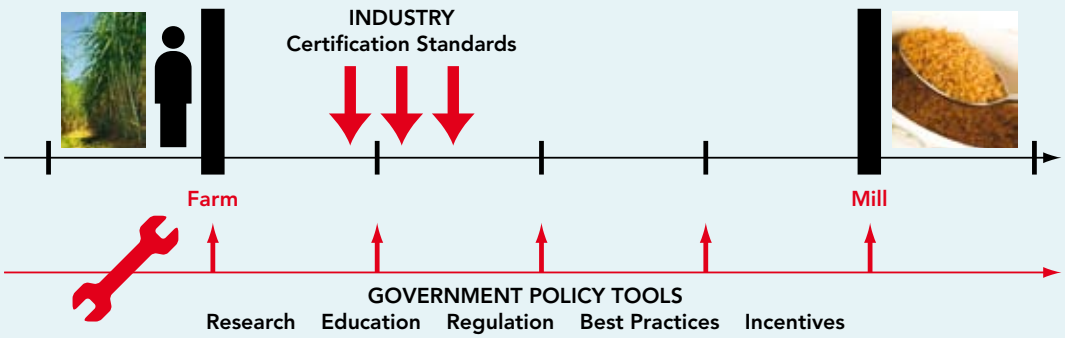
ACT

Keep stakeholders committed and engaged with a range of communication approaches

Working with supply chains is an ongoing commitment. Over time it's likely that you will use several communication tools. Newsletters, meeting summaries, news items, blogs and websites can all be used to increase awareness, and engage active and passive stakeholders and management in discussions about new learnings and progress.

Develop policies for establishing sustainable product standards

Your products and services are only as good as the weakest link in your supply chain. Procurement and sustainability policies, along with regular supply chain meetings, can reduce the risk of being blindsided.



THINK, REFLECT, LEARN

LESSONS

Sustainable management requires continuous adaptive management, and challenging business-as-usual assumptions.

Four essential steps for taking a systemic approach to developing policies and practices to assure your sustainability credentials

1. Walk the entire supply chain. Identify the stakeholders and where commodities are sourced; assess the social and environmental impacts at each stage of the supply chain.
2. Talk to both managers and staff on the factory floor.
3. Develop procurement policies and contracts that include social and environmental performance standards.
4. Audit contractors and sub-contractors, visit sites regularly and ensure that they are complying with their contractual conditions.

KEY CHALLENGES WHEN BRANDING PRODUCTS

- Being blindsided by an event 'out of sight' in the supply chain.
- Aligning your sustainability policies with your brand and product marketing strategies.
- Appealing to a range of consumer concerns.
- Promoting personal health benefits and environmental benefits, such as the conservation of resources or waste management activities.
- Providing a seamless integrated approach to labels, products, verification systems and websites.
- Working closely with your customers to optimise consumer exposure to your product.

THE OUTCOMES

Establishing a labelling system for products should be part of a broader strategy. Product labelling is the first point of contact for the consumer and their introduction to the corporate brand. Maintaining consumer trust in the safety and traceability of products is imperative. Once consumers begin to doubt the credibility of a company, an institution or a regulatory system, it can be very hard to re-establish public confidence, with lasting consequences in the marketplace. Re-building consumer trust in a brand once discredited is time consuming, and can have long-term impacts on transaction costs and shareholder profits.

WORKING TOGETHER CAN BE REWARDING

The key to a successful collaboration is to firstly establish what the mutual benefit is for each collaborator. Alignment of strategies and policies in collaboration with suppliers reduces the risk of being blindsided. Learning and organisational change takes time and involves new skills, but what emerges from effective collaborations can benefit all stakeholders in the supply chain.

Sharing ideas about sustainable practices is good for the environment, good for the community and good for business.

SUMMARY

Thinking systemically encourages individuals to think about an issue holistically, while also finding solutions for specific problems. The exploration therefore becomes a transformational process, whereby stakeholders experience, reflect, observe, plan, and act together in an ongoing cycle of thinking and learning. Management of supply chains is rapidly changing from a focus on logistics to a more holistic focus on the sustainability risk and opportunities. If knowledge levels and management practices are to reach their full potential, there is still much to be done.

Companies are increasingly realising that multi-disciplinary 'Sustainability Teams' – consisting of marketing, customer relations and supply chain managers, technical experts and sustainability managers – are essential for embedding sustainability best practices into supply chain management, and for understanding the diversity of perspectives.

Broadening the decision-making base not only enables a more systemic and collaborative approach to procurement policies and specifications, but also reduces the risk of being blindsided. Assumptions about design, use of materials and logistics often need to be challenged for products and projects to achieve the most sustainable outcomes.

These case studies highlight the importance of establishing mutual benefit ('what's in it for me?') among the stakeholder corporations that influence the sustainability problem. The mutual benefits (or mutual problems) should be significant enough to warrant senior management support from each organisation, and should strategically align with corporate priorities. They should offer more than just financial gains, and can include tangible and intangible sustainability gains, such as improved staff morale and corporate reputation.

The diversity and complexity of stakeholders and issues provided the research and project teams with challenging dilemmas about how to best influence the systems, and how to capture the outcomes. Understanding how the supply chain works, establishing policies that support the corporate sustainability strategy, and maintaining good communication channels and networks, help to rapidly identify problems and quickly find solutions.

ACTIVITIES TO KEEP BUILDING EFFECTIVE SUSTAINABILITY BEST PRACTICES INCLUDE:

- Forming sustainability teams to guide the journey.
- Benchmarking resource baseline and best practice management.
- Including sustainability updates into weekly/monthly meetings.
- Developing policies about, for example, motor vehicles, procurement, sustainability.
- Training staff about resource management issues such as waste.
- Developing standard operation procedures such as staff induction, performance reviews and event management.
- Developing communication material such as website pages and newsletters.
- Developing a 'tool box' – action plans with targets for the sustainability journey, presentations to clients and boards, briefing papers and sustainability information to support funding applications.

These case studies provide an indication of where companies can start to address their management and research needs. The positive models provided by these examples serve as a guide for other industries.

Some problems were too difficult for the participants to tackle within the scope of this program. Managing logistics in several participants' supply chains was considered imperative for reducing transport costs and increasing effectiveness, but exploring changes to logistics requires a longer time-frame, extensive collaboration and commitment to share knowledge among a broad range of stakeholders.

In today's global markets, companies that have addressed supply chain sustainability are likely to be rewarded for their efforts. While news headlines are currently emphasising the cost implications of emissions trading and regulatory compliance, sustainability has wider implications. These case studies demonstrate that a more comprehensive response, involving collaboration and holistic, systemic analysis can reduce the risk of being 'blindsided' and identify opportunities for moving forward with cohesive, strategic policies and interventions.

WORKING SYSTEMICALLY

Be holistic

Work systemically from the inside out. It is critical to have well-developed environmental and social auditing systems and to ensure high compliance.

Be collaborative

Working together with, rather than competing with, your supply chain partners produces new opportunities for products and services and can reduce resource costs through operational efficiency gains.

Be transparent

Maintain a dialogue with suppliers, customers and consumers about your products, strategies, operational problems and success stories.

Be trustworthy

Don't underestimate the value of brand trust.
Your people, products and services are the brand.
Brand trust is increasingly considered essential for the successful marketing of products and services. Trust is fundamental to a consumer's perception of a product. Each time a brand is recalled, consumer trust in the product is impacted.

FURTHER READING

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Material Sources: The Sustainable Concrete and Transporting Bread case studies are drawn from a DEWHA and ARIES project: *Sustainability in Supply Chains* (Woodhead A, Thomas J and Mah J 2009). www.aries.mq.edu.au/project.htm#SupplyChain

The Sugar Branding case study is drawn from the *Sugar Link* project (Woodhead A, et al 2006) www.linkstrategy.com.au.

All diagrams were developed by Alice Woodhead for the Link Strategies 'Thinking Systems' workshop program.

DISCLAIMER: