THE CAMBRIDGE NATURAL CAPITAL PROGRAMME

Building resilient value chains within the limits of natural capital

UNIVERSITY OF CAMBRIDGE
PROGRAMME FOR SUSTAINABILITY LEADERSHIP

About the Cambridge Natural Capital Programme

It is increasingly accepted that significant changes are needed in the level of practical actions and policy that can deal with long-term risks to business, customers and wider society from the degradation of our natural resource base. This major new business-led programme brings together a cross-sectoral group of leading companies to explore how to bring about such significant changes.

Phase 1 of the programme, between September 2010 and May 2011, explored four areas that programme members identified as critical for delivering progress through collaboration and system-wide actions:

- Developing a narrative specifically for the boardroom
- Examining long-term business risks and opportunities
- Mainstreaming natural capital investment
- Building resilient value chains

Phase 2 of the programme is acting on key recommendations from this first phase. For more details of the second phase of work visit *www.cpsl.cam.ac.uk/Collaboratories/Ecosystems.aspx*

The programme is developed and run by the University of Cambridge Programme for Sustainability Leadership (CPSL).

Acknowledgments

This report was written by Alan Knight OBE, CPSL Senior Associate, and Margaret Adey, Director of the Cambridge Natural Capital Programme, CPSL. Case studies were compiled by Jimmy Osborne, CPSL.

We would like to thank Cargill, Kingfisher, Nestlé, Olam and SABMiller for providing case studies, and all the collaboratory members for providing the insights, observations and resources that made this work possible.

Value Chain Collaboratory Members

ASDA · Cargill · Deloitte. · KINGFISHER · kraft foods · Nestlé · OLAM · SAB MILLER · Unilever · volac

Contents

EXECUTIVE SUMMARY Page 4

AGENDA FOR CHANGE Page 8

1. OPERATE WITHIN THE FINITE LIMITS OF SUPPLY Page 8

2. REFLECT THE RIGHT VALUE FOR EXTERNALITIES IN THE PRODUCT PRICE Page 10

3. CHANGE HOW WE VIEW VALUE CHAINS Page 12

4. BUILD A PORTFOLIO OF EFFECTIVE INTERVENTIONS Page 14

5. EDIT CONSUMER CHOICE Page 18

6. DRAFT AND IMPLEMENT OPERATING PRINCIPLES Page 21

7. ENSURE THE BEST USE OF LAND Page 22

GLOSSARY Page 24

REFERENCES Page 25

Executive summary

Introduction

The report is based on a vision of:

a global economy that operates within the finite limits of its natural resource base, with value chains that are resilient over the long-term and that provide goods and services which deliver quality and sustainable lifestyles.

It represents the views of senior decision makers in major corporate organisations on fundamental changes in retail and manufacturing value chains. 'Resilience' describes the ability of value chain systems to function effectively within the finite limits of one planet, while handling dynamic changes around natural capital* availability and use. Resilience is not a finite attribute. It involves flexibility and adaptability over time.

The challenge

The world's population is growing dramatically. The economic growth currently sought by all countries, particularly emerging economies, is exerting even greater pressure on the natural capital on which value chains rely. Continued degradation of our natural capital will slow down and ultimately halt or reverse economic growth. Business will have to get more from less.

'Natural capital' is the capital we derive from ecosystems on which human survival and all economic activity relies. It ranges from agricultural crops, timber and wildlife to the benefits that we gain from the many resources and processes supplied by 'nature' which we do not pay for at present, such as clean drinking water.

The irreversible depletion of our natural resource base represents a profound failure to incorporate 'externalities' (costs of environmental and social assets) in the market price of goods and services. Hence, insecurity of supply and reduced access to natural capital are becoming major risks for companies.

As specific business sectors become more aware of risks from their reliance on a finite base of natural capital, they are likely to put pressure on policy makers to ensure that other sectors do not degrade the ecosystems on which they rely. Such moves, already occurring within the timber industry,[2] put even more pressure on business to change.

Re-tuning the supply network

The report draws on the practical experiences and insights of ten companies. It gives a consensus view of 'what needs to change in the world' to achieve resilient value chains. Some of the agenda for change that the companies have identified is being explored already by other initiatives. Much of the necessary expertise already exists within the value chain world, although it will need 're-tuning' for value chains to deliver quality, sustainable lifestyles to a population of 9 billion by 2050.

Businesses and governments, informed by research, can create a tipping point for change and set the direction of travel. Case studies provided by a number of the companies show that partnerships with non-governmental organisations (NGOs) also play an important part.

A structured response

The report highlights the importance of developing a new framework for purchasing decisions which, among a wide range of issues related to natural capital, incorporate the cost of externalities.

It also proposes an important shift from a demand-led approach to consumption to one that is 'supply-constrained', with natural capital forming a core part of the business model.

A series of case studies illustrates how value chain interventions can be aligned with the demands and opportunities that drive natural resource use, and demonstrates the value of collaboration and cooperation between organisations and across sectors.

Conclusions

This report sets out the fundamental implications of managing value chains and consumption within environmental limits. In drawing up an agenda for change, the companies recognise that consumers are expecting the corporate sector, particularly those within the retail sector, to take the lead as change catalysts. Consumer information, such as labelling, can make a contribution, but the most influential changes take place before the product even reaches the consumer.

If every company with a value chain operated within the finite limits of their natural capital base, the result would be profound. Some companies are already thinking and operating this way, and for them the steps proposed in this report may only create subtle changes. For others, the pace and scale of change will take substantial resources and concentrated effort.

However, the collective expertise of the global supply network – its creativity and ability to innovate and adapt – inspires hope that the challenges can be met and the opportunities realised. Then competitive advantage would come not from the throughput of resources, as at present, but through innovation based on the creation of value.

The agenda is clear. What is needed now is a leadership position on the pace of change and its milestones. This is work that CPSL can take forward in the next phase of the Cambridge Natural Capital Leaders Platform.

* **Natural Capital:** the sum total of nature's resources and services, underpinning human survival and economic activity (e.g. agricultural crops, vegetation, wildlife, fossil fuels, mineral deposits). **Ecosystems:** A dynamic complex of plant, animal, fungal, and micro-organism communities and their associated non-living environment (e.g. water and soils) interacting as a unit. **Ecosystem services:** the benefits that we gain from the many resources and processes supplied by ecosystems (e.g. clean drinking water and processes such as decomposition of wastes).

Overview of next steps for business

Below is a summary of the principles for building resilient value chains and the next steps for business, drawn from the main body of the report.

1. Operate within the finite limits of supply

Ensure that all those involved with supply networks understand the critical importance of operating within the limits of the Earth's natural capital. Put in place strategies and procedures to make this happen, collaborate to find new solutions and create a critical mass that can deliver these solutions to scale.

Identify the ecosystems on which specific products rely, and only take from these ecosystems what they can produce sustainably, sharing this natural capital equitably between stakeholders including local communities.

Lead the debate on how consumption can fit within environmental limits, and reach a consensus on the key elements of a sustainable lifestyle.

2. Reflect the right value for externalities in the product price

Advocate bold policy measures by governments to value natural capital and sustain it long-term.

Establish how to price externalities, what this would mean for product prices, and the policy measures needed from government to support this move.

3. Change the way we view value chains

Look beyond a single product sector to take a supply-constrained approach that encourages collaboration among those that rely on the same ecosystem for their products and services.

Use language that positions natural capital more centrally within the supply network to encourage a better understanding of the flows and dependencies between the natural systems on which these networks depend.

4. Build a portfolio of effective interventions

Share evidence of interventions that most effectively build resilient supply networks, and particularly those that create changes in practice for a wide spectrum of producers. Recommend how to simplify and coordinate value chain interventions.

Take a proactive approach in advocating the policy measures and institutional infrastructure needed to deliver a consistent improvement in product standards and the management of resilient supply networks.

5. Edit consumer choice

Design and manufacture sustainable products that consumers can use in a sustainable way, and phase out unsustainable products with determination and rigour.

Be vocal in calling for public procurement to drive significant change in the sustainability of products and their supply network.

6. Draft and implement operating principles

Draft a set of operating principles for value chains in relation to natural capital and establish a process for getting these principles widely accepted.

7. Ensure the best use of land

Play a leadership role in supporting government to take a transparent, inclusive approach to land use decisions.

Understand the balance between the role of local governments in deciding the best use of land and the role of procurement standards in assisting public policies to become a reality.

Identify, measure and manage the land use footprints of business in order to reduce exposure to land-related risk and risks to the sustainability of supply networks.

Agenda for change

1. OPERATE WITHIN THE FINITE LIMITS OF SUPPLY

One guiding principle of good value chain management is to protect the value chain from inefficient operating practices and over-demand. Businesses achieve this by having the ability to deliver goods via complex systems and processes.

The challenge is to extend this discipline beyond the operation of farms, factories, shipping and warehouses to the delivery of quality and sustainable lifestyles. To achieve this shift, the whole value chain will have to understand and maintain the processes that sustain natural capital and support low carbon lifestyles.

The world's population is expected to reach between 8 and 11 billion by 2050.[3] To meet the needs of this size of population, consumption will have to move from being demand-led to supply-constrained. This requires change and innovation – attributes that are very familiar to value chain managers who have been through many significant changes already, including globalisation and the development of IT-driven advances.

To share equitably the Earth's natural capital among 8-11 billion will also require consensus on the key elements of a sustainable lifestyle[4, 5] including the level of resource consumption per capita.

Moving from demand-led to 'supply-constrained'

A supply-constrained approach means that business will need to identify the ecosystems from which their materials and services are sourced and take only what those ecosystems can produce sustainably. This involves understanding how to share natural capital across stakeholders, including local communities.

A few examples exist where value chains have met increasing demand by managing a portfolio of interventions that respect natural capital limits – in the case of the UK water industry,[6] by generating more income without increasing sales.

Operating within the finite limits of supply:

Vision for society	For the global economy to operate within the limits of natural capital and for value chains to be resilient over the long-term, providing goods and services that deliver quality and sustainable lifestyles.
Next steps for leading businesses	Ensure that all those involved with supply networks understand the critical importance of operating within the limits of the Earth's natural capital. Put in place strategies and procedures to make this happen and collaborate to find new solutions and create a critical mass that can deliver these solutions to scale. Identify the ecosystems on which specific products rely, and only take from these ecosystems what they can produce sustainably, sharing this natural capital across stakeholders including local communities. Lead the debate on how consumption can fit within environmental limits and reach a consensus on the key elements of a sustainable lifestyle.
Next steps for governments	Provide leadership to ensure that the business community understands the imperative of operating within natural capital limits, and make clear the intention to establish long-term policy frameworks. Address the profound transformational change that is required to ensure 8-11 billion people can live equitably within environmental limits by 2050. Embed policies that reduce the chances of value chains damaging the natural capital on which they rely and drive changes in the behaviour of business and the consumer.
Contribution from research	Develop the research base to deepen understanding within business and government of the risks to value chains from the continued unsustainable consumption of natural capital, and the opportunities that flow from sustaining our natural resource base. Explore examples in which business has already shifted to a supply-constrained approach and demonstrate where this learning can be applied more widely.

2. REFLECT THE RIGHT VALUE FOR EXTERNALITIES IN THE PRODUCT PRICE

Setting the right value for externalities

Markets are failing to set a value to the global economy for the natural capital that underpins it or the cost to the economy from lost opportunities when natural capital is destroyed or significantly degraded.

Many studies have attempted to calculate a price for externalities. The international study on The Economics of Ecosystems and Biodiversity,[7] for instance, sets a price for the contribution of coral reefs to our global economy. However, it is not yet clear how to apply such calculations within the value chain to drive improvements.

The real costs of incorporating externalities can be explored through exemplar products or raw resources, such as water, tracked through a product's value chain. Such information would help shape decisions for companies and inform public policy. It would also suggest changes to the economic model so that externalities are incorporated into the final product price. These changes may not be straightforward to achieve since, for example, the perceived value of a resource varies according to its importance to the particular stakeholder in the value chain – producer, lead procurer, host government, civil society or local community.

Living off the natural 'interest' and not the natural 'capital'

We are already 50 per cent above the Earth's 'one planet limit' according to WWF's 2010 Living Planet report.[8] To set the right price on externalities, we first need to understand local and global carrying capacities – the amount of resource that can be sustainably harvested and the wastes that can be absorbed to maintain a healthy system. For example, what does a 'one planet limit' mean for the amount of global wood that can be extracted for pulp and timber? What levels of biodiversity are needed to maintain water purification?

To safeguard the natural sources of supply we need to create mechanisms, markets and policy to manage a healthy operating system and its resources, pollutant loading and extractions. Although considerable work has been done in this area, it is fragmented. The findings urgently need to be brought together so that what is known already can be integrated rapidly into corporate and policy decision making and a precautionary approach taken to the unknowns.

Reflecting the right price on externalities in the product price:

Vision for society	A global economic system in which society lives off the Earth's natural 'interest' rather than its natural 'capital' so that the latter can continue to support our global economy in the future. This economic system must reflect the right price on externalities
Next steps for leading businesses	Advocate for bold policy measures by governments to value natural capital so that it is sustained long-term. Establish how to price externalities, what this would mean for product prices and the policy measures needed from government to support this move.
Next steps for governments	As a matter of urgency, develop and implement a comprehensive package of policy measures to protect natural capital and ensure that the economy operates within planetary limits. Recognise the urgent need for the cost of externalities to be incorporated into the supply network, and suggest policy measures for this to become a reality.
Contribution from research	Prioritise research that seeks to address the critical shortcomings of our current global economic system, and how policy makers might apply this evidence base. Undertake research to understand the real costs involved in incorporating externalities into the supply network. As part of this work, understand the levels of flows and dependencies that can ensure the health of these ecosystems. With this information, quantify the amount of resource that can be sustainably sourced and work collaboratively with key stakeholders to understand how to shape demand to maintain long-term tenure of supply.

3. CHANGE HOW WE VIEW VALUE CHAINS

From chain to network

Value chains are not linear and predictable – they work as a complex network of overlapping lines. A single ecosystem is often the source of many different products. For instance, a forest can be a source of fuel, water, food, clothes, building materials and other products.

For a value chain to be resilient, it must be managed both as a dynamic interconnected whole and in its individual parts. A simple, but important change of terms from 'chain' to 'network' would reflect the complex mesh of overlapping chains faced by supply chain managers.

From 'Closed loop' to 'Nature-to-Nature'

Closed loop thinking about supply networks, which involves thinking about the whole cycle from raw material to recycle or disposal, is an important advance over traditional linear thinking. However, the term 'nature-to-nature' supply networks in preference to 'closed loop' or 'cradle to cradle' would reflect the reality that a system is only truly closed when it includes direct raw materials and wider inputs from nature (such as the energy used in production).

Such changes to the language of value chain management would position 'nature' more centrally, so supply chain managers can gain a more realistic view of the natural systems on which their supply networks depend, and the flows and dependencies between them.

Collaborate around the ecosystem rather than the sector

Current collaborations tend to be demand-led within product sectors. At present, for instance, cotton, nylon and leather fashion suppliers collaborate on finding solutions even though their products are sourced from different ecosystems. A supply-constrained approach would mean collaboration across product sectors. For example, palm-oil suppliers would collaborate with timber and biofuel producers whose raw materials come from the same tropical forest ecosystem. Instead of using categories that reflect how the product is used (e.g. food, fashion, transport), a supply-constrained approach would use categories that reflect the ecosystems from which the products and services are derived.

Collaboration within product sectors means that different standards and certification schemes are often applied to the same ecosystem. In contrast, supply-constrained collaborations focused on an ecosystem would be less likely to lead to a proliferation of initiatives around the same resource base.

Reflecting the right price on externalities in the product price:

Vision for Society	Supply networks that operate within the living ecosystems from which their natural capital is derived and in ways that reflect these ecosystems rather than the product sector.
Next steps for leading businesses	Look beyond a single product sector to take a supply-constrained approach that encourages collaboration among those that rely on the same ecosystem for their products and services. Use language that positions natural capital more centrally within the supply network to encourage a better understanding of the flows and dependencies between the natural systems on which these networks depend.
Next steps for governments	Find ways of working with all stakeholders – including buyers and local communities – to agree the best use of particular ecosystems.
Contribution from research	Undertake research that could underpin a supply-constrained and 'Nature to Nature' approach, including identifying practical examples, barriers, opportunities, and methods for scaling up.

4. BUILD A PORTFOLIO OF EFFECTIVE INTERVENTIONS

A complex and fragmented offering of schemes

Companies increasingly use a portfolio of interventions within their procurement process. These interventions incorporate sustainability principles as standards that align supply networks with emerging ethical and environmental demands. Such standards are often set by a third party and enforced by audits, certification and labelling.

However, the number of schemes has proliferated, with over 60 stewardship councils and international roundtables, and more than 600 eco-labels. The number of schemes can cause confusion to consumers and is a considerable burden on producers.

Lack of coordination and analysis of how interventions work together or impact each other has led to a complex and fragmented offering. Desk research by CPSL has examined broad groups of interventions ranging from choice editing to codes of practice, and legislation to labelling. It shows that all have their strengths and weaknesses, and that different interventions are effective in different situations.

Key types of intervention

Our desk research has shown that interventions can be divided broadly into what we refer to as 'decoupler' and 'transition' schemes according to the extent that they address underlying issues at producer level. (See case studies below, and the Appendix for more detail.) Each approach has its strengths and weaknesses and the focus should be on developing interventions that use the best of each and that address underlying issues at producer level.

Decoupler schemes

e.g. The Forest Stewardship Council (FSC), the Marine Stewardship Council (MSC) and the Fairtrade Mark

- By insisting on specific standards among their suppliers, procurer in some cases decouple their products from underlying problems rather than solving them.
- Corporate buyers specify the environmental and/or social standards with which their suppliers must comply.
- Schemes are customer-facing with a clear consumer message.
- Third party certification imposes costs on producers.

The scheme run by Kingfisher described in this report began as a decoupler scheme and developed into a series of transition schemes.

Transition schemes

Transition schemes address underlying issues at producer level and reach more producers than decoupler schemes.

- Procurers work with their suppliers to assist and encourage change at a pace appropriate to the suppliers' needs, often incorporating measures to increase productivity.
- They may be linked to a third party independent standard or to expert validation, but do not usually include commercial incentives to reach a standard.

The majority of interventions in the case studies in this report are transition schemes.

How many schemes?

Although some schemes already collaborate to avoid duplication and confusion, greater collaboration, coordination and merging of schemes would save costs and be more effective. The ISEAL Alliance[9] supports schemes to follow similar processes but does not act as a co-ordinator.

Coordination of schemes

Coordination could range from a 'free for all' approach to a single decision making body that dictates which schemes to follow (although there is considerable unease about one body having executive powers over the existence/shape of interventions).

'Think tank' approach

An alternative would be to bring together representatives of different sectors to examine trends and map future choices for schemes and users. It would influence decisions makers about the interventions they should use and would take a 'supply-constrained' approach, bringing together corporate users who rely on the same ecosystem for their natural resources.

Case studies that show transition and decoupler schemes in practice

(See the Appendix for more details)

B&Q Timber (decoupler scheme, moving into transition schemes)

In the early 1990s as the issue of rainforest deforestation and tropical timber sourcing gained public prominence, B&Q came under increasing pressure to show transparency in its timber sourcing. This sparked a huge internal focus on its timber value chain to look for solutions. B&Q realised that a credible and trustworthy sustainable timber product label would allow consumers to make informed purchases that did not contribute to forest degradation.

As a result, B&Q became a founding member of the Forestry Stewardship Council (FSC). In the 20 years since its first movement into sustainable timber sourcing, B&Q's journey to sustainably-sourced timber began as a 'decoupling' intervention, but developed into a number of 'transition schemes' across their timber value chain and beyond using certification, roundtables and land use planning. B&Q is now (as of February 2011) the first major UK retailer to achieve 100 per cent proven well-managed sourced timber.

Cargill: Sustainable Soy Partnership (transition scheme)

Focused around Cargill's soybean terminal in Santarém, Brazil, the Sustainable Soy Partnership was developed in 2008 by Cargill and The Nature Conservancy (TNC). Brazil is unusual in that is has an excellent national Forest Code. This Code was not being fully implemented so deforestation continued to be a major issue. Cargill's Sustainable Soy Partnership with TNC not only halted deforestation in the Santarém area, it is also providing a model for the Brazilian government's conservation efforts across the Amazon.

The Sustainable Soy Partnership has at its core a training programme for local farmers. By realising the value in being sensitive to a wide array of external factors and by having greater transparency and accountability, the project has not relied on a single intervention but has developed a range of responses to the challenges that value chains face.

Nestlé: The Nescafé Plan (transition scheme)

The Nescafé Plan is a partnership between Nestlé and a number of NGOs. Through developing land use planning approaches and shared technical expertise it has worked towards publicly stated targets for sustainably sourced coffee, and increased the stability of supply.

Endorsed by the Rainforest Alliance, the Sustainable Agriculture Network and the Common Code for the Coffee Community (4C) the Nescafé Plan is a long-term investment over a ten-year period that uses local engagement, training by experts, and third party verification to bring suppliers up to standard and improve efficiencies in the value chain. Built on the foundations of previous projects by the company, the Nescafé Plan is an example of a business journey in scaling up interventions.

Olam International: Rice Nigeria (transition scheme)

An example of land use planning and international government co-ordination, Rice Nigeria brings together partners and suppliers to create change from the base up in the Nigerian rice supply network.

Rice Nigeria is based around a long-term view of interventions and company investment, both in time and money. Local government and farmer groups are working with business to determine the best land use for the area, helping improve incomes for local people as well as securing supply for the business. Partnerships have been key in kick-starting the project and in its expansion to current levels.

SABMiller: Water Futures (transition scheme)

Water Futures was established in 2009 when SABMiller identified risks to its future operations from the impacts of water scarcity and wanted to address global frameworks for managing freshwater ecosystems.

SABMiller's water risk management projects in Honduras, Columbia, India and the US had highlighted a lack of consistency globally in approaches to fresh water management. Water Futures brings together a group of partners with significant experience and networks and an understanding that real change takes time to achieve. It identifies and implements water strategies for specific watersheds, and aims to secure sustainable freshwater supplies through more effective value chain management of freshwater ecosystems, from the bottom up. In doing so, it reduces shared risks for stakeholders from poor watershed management.

The emphasis is on the suppliers and their immediate communities. Sustainable water supplies benefit local suppliers and secure for SABMiller a supply chain for regionally-produced and locally-sold products.

Building a portfolio of interventions:

Vision for Society	Consistent improvement in product standards and value chain management on sustainability matters, combining the best of voluntary and regulatory approaches and focusing on interventions that use the best of decoupler and transition schemes and that benefit producers as much as procurers.
Next steps for leading businesses	Share evidence of interventions that most effectively build resilient supply networks, particularly those that create changes in practice for a wider spectrum of producers. Recommend how to simplify value chain interventions. Take a proactive approach in advocating the policy measures and institutional infrastructure needed to deliver a consistent improvement in product standards and the management of resilient networks.
Next steps for governments	Work with business leaders to better understand the strengths and weaknesses of key interventions currently in practice with a view to simplifying and strengthening the offer. Support moves by business that deliver deep system change, and ensure that these are used in government's own procurement. Draw on successful approaches that have addressed other issues of societal concern (such as Health & Safety) to help shape system-wide implementation.
Contribution from research	Identify and explore solutions for action by business and government that deliver deep systemic change.

5. EDIT CONSUMER CHOICE

From time to time, and for specific product groups, consumers have demonstrated a preference for more sustainable choices, as in the case of organic products. However, it is unrealistic to expect consumers to apply sustainability considerations in every purchase that they make.

Consumers increasingly expect business to address sustainability concerns on their behalf. For companies this means making sustainability part of their brand promise, rather than having to present an increasingly complicated set of choices to consumers.

Editing consumer choice

Choice editing is one way that business triggers change on behalf of the consumer. It involves removing lower ethical or environmental choices from the consumer offer. Product labelling and informed consumer choice provide a starting point, and companies have the freedom to trial and experiment with the voluntary use of product labelling.

Business has an important role in explaining to consumers the reasons for introducing choice edited products in order to take consumers with them on this journey. Unilever is one company that has made a commitment to drive behaviour change in the way that consumers use their products.

Companies may want to use choice editing but need to know that their competitors will also do so, as in the introduction of energy efficient light bulbs. The UK dairy industry's Milk Road Map[10] and WWF's Forest and Trade Network[11] are examples of choice editing that were achieved in an equitable and legal way.

Choice editing needs to be coupled with support by business for incremental product regulations and standards to phase out lower standard choices, such as the introduction of voluntary partnership agreements for timber.[2]

Public bodies are huge procurers. Procurement standards expected of the business should also be enforced in public procurement. Standards for forward procurement by the public sector can generate new markets for products and services that are derived from natural capital protected by a supply constrained approach.

Building a portfolio of interventions:

Vision for Society	Widespread use of product choice editing and significant changes in consumer behaviour in relation to product use.
Next steps for leading businesses	Design and manufacture sustainable products that consumers can use in a sustainable way, and phase out unsustainable products with determination and rigour. Be vocal in calling for public procurement to drive significant change in the sustainability of products and their supply networks.
Next steps for governments	Take a proactive role in developing new markets for sustainable products by setting ever more progressive product regulations and standards. Work in partnership with the private sector to use public procurement (particularly forward procurement) to drive significant change in the sustainability of products and their value chains, thereby rewarding more progressive companies showing leadership in this area. Adopt appropriate standards for Forward Commitment Procurement.
Contribution from research	Continue to undertake research on the design and manufacture of sustainable products and on consumer behaviour change in relation to product use. Examine the drivers and barriers to government procurement processes with a view to informing procurement of more sustainable products.

6. DRAFT AND IMPLEMENT OPERATING PRINCIPLES

Learn from the Health & Safety agenda
Operating principles in the form of codes of conduct have made an important, low cost contribution to the management of labour conditions within the value chain.

No such narrative or operating principles yet exist for natural capital.

Developing operating principles
Operating principles would set out what a company's natural resource position might look like. They give corporate buyers a framework for making purchasing decisions that are not just related to cost. It is then up to the individual company to decide how it wishes to adhere to them.

Codes of conduct on human rights to which most companies subscribe are derived from International Labour Organisation standards. They are then tailored to specific needs, such as to the requirements of value chains (e.g. the Ethical Trade Initiative). For maximum effectiveness, operating principles need to have ownership in the part of a business that makes decisions with the most impact. This is primarily a business driven agenda.

Next steps for leading businesses	Draft a set of operating principles for value chains in relation to natural capital and establish a process for having these principles widely accepted.
Next steps for governments	Provide a regulatory framework that supports codes of conduct in a similar way to the frameworks that support Health & Safety.

7. ENSURE THE BEST USE OF LAND

Who decides?

Land use is likely to be a defining challenge of the next decades. In its simplest form, the natural resource debate is about finding a process to create consensus on the 'best' use of land to underpin a global, sustainable economy. But many emerging economies understandably have the more immediate aspiration of ending poverty in their region.

Both goals are fair but each needs a very different response. Land tenure, land ownership and land rights are politically charged topics. The history of agriculture and forestry is full of examples where producers and governments have disagreed over the optimal use of land.

Responsibility for decisions about land use must lie with those who govern it, own it, live on it and depend on it for their livelihoods.

High consuming nations have a responsibility to ensure that the land whose natural resources they consume is used well. Land use policies should have the explicit support of the nations involved and supply networks should support decisions made by producers and the governments that represent them.

Transparent processes

Ecosystem boundaries frequently cross national boundaries, and competing national policies may encourage the degradation or loss of particular resources for short-term gain. In the absence of enforced regional land use policy, business can play an important role in incorporating environmental and social standards within their procurement standards. Governments must be encouraged to plan and regulate land use – and be held accountable.

As responsible stakeholders, individual companies need to support and engage in transparent and inclusive processes. To determine the best use of land requires a global consensus between government leaders, local community leaders and the key customers for those resources. Good examples already exist of this type of collaborative management of ecosystems by government, including the European Union strategy for the Baltic Sea region and the management of the River Rhine.[12]

Vision for Society	A transparent inclusive process of global and local political debate that enables agreement on the most sustainable use of land based on the latest science and incorporating the views of all stakeholders.
Next steps for leading businesses	Play a leadership role in supporting government to take a transparent, inclusive approach to land use decisions. Understand the balance between the role of local governments in deciding the best use of land and the role of procurement standards in assisting public policies to become a reality. Identify, measure and manage the land use footprint of business in order to reduce exposure to land risk and risks to the sustainability of supply networks.
Next steps for governments	Bring stakeholders together and develop land use plans in an open transparent way, and address unresolved claims over land rights.
Contribution from research	Examine the increasing conflicts over land use and explore options for systems and mechanisms that would address these conflicts in a fair and sustainable way.

Glossary

Biodiversity: Biological diversity, or biodiversity, describes the variety of life on Earth. It refers to the wide variety of ecosystems and living organisms: animals, plants, their habitats and their genes.

Carrying capacity: The planet's carrying capacity is the amount of resource that can be extracted from it and the wastes that it can absorb. Systems limits have already been put forward (some very tentatively) for carbon, ozone, nitrogen/phosphorus, water extraction, land use, biodiversity loss, and ocean acidification.[13]

Choice Editing: The removal of lower ethical or environmental choices from the consumer or supplier offer.

Closed Loop (or Cradle to Cradle) system: A system that does not rely on exchange of matter outside of the system. Note that a system is never truly closed if all the inputs from nature including energy and water used in production are considered. A term such as 'nature-to-nature' to describe the system would recognise this; such a system would reduce inputs over time through increased efficiencies.

Collaboratories: Cross-sectoral action-based working groups (see *www.cpsl.cam.ac.uk/collaboratories.aspx*)

Ecosystem: A dynamic complex of plant, animal, micro-organism and fungal communities and their non-living environment interacting as a unit.

Ecosystems services: The benefits that people – businesses, communities and the wider population – obtain from ecosystems and their non-living environment, all interacting as a functional unit. Examples include freshwater, forest products, climate regulation, erosion control, recreation.

Externalities: Benefits or costs generated as an unintended by-product of an economic activity that do not accrue to the parties involved in the activity and where no financial compensation takes place.

Intervention: Structured activities used individually or in combination to improve the performance of a value chain with a specific goal in mind.

Inventory: Goods held by a company that have not been sold or used.

Natural capital: The sum total of nature's resources and services that underpins human survival and economic activity. In contrast to financial capital, natural capital is the capital derived from ecosystems (i.e. the dynamic units that include plants, animals and the non-living environment on which these depend, such as water and soils). It ranges from agricultural crops, vegetation and wildlife to the benefits that we gain from the many resources and processes supplied by nature. In short, natural capital is the value of nature to businesses and to the economy.

Resilience: The ability of value chain systems to function effectively and deliver an increased supply of products and services in response to increased demand, while handling dynamic changes around natural capital availability and use. Resilience is not a finite attribute but incorporates flexibility and adaptability over the long term.

References

1. The Cambridge Natural Capital Programme is moving forward into its second phase as the 'Cambridge Natural Capital Leaders Platform' *www.cpsl.cam.ac.uk/Collaboratories/Ecosystems.aspx.*
2. European Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan for timber where retailers of forest products have sought to encourage European Union policy makers to ban the import of illegally felled timber because it is undermining their efforts to source the commodity sustainably. *ec.europa.eu/environment/forests/flegt.htm*
3. *www.un.org/News/briefings/docs/2011/110503_Population.doc.htm* and *www.un.org/esa/population/*
4. A number of initiatives are exploring the characteristics of lifestyles that are true to sustainability principles. The Intergovernmental Taskforce on Sustainable Lifestyles works with the concept of lifestyle as a series of 'social conversations', in which people signal their social position and psychological aspirations. As many of the signals are related to consumer goods, lifestyles are closely linked to material and resource flows in each society. *www.uneptie.org/scp/marrakech/taskforces/pdf/SLT%20Report.pdf*
5. The UK Sustainable Development Commission in its 2011 report 'Making sustainable lives easier' calls for a clear positive vision for sustainable lives that engages all players and is clear about the priorities for action. *www.sd-commission.org.uk/data/files/publications/MakingSustainableLivesEasier.pdf*
6. *www.environment-agency.gov.uk/research/library/publications/40731.aspx*
7. The Executive summary of The Economics of Ecosystems and Biodiversity (TEEB) report for business (2011) is downloadable from *www.teebweb.org/ForBusiness/tabid/1021/Default.aspx*
8. WWF Living Planet report (2010), *wwf.panda.org/about_our_earth/all_publications/living_planet_report/*
9. The ISEAL Alliance, *www.isealalliance.org/*
10. The UK Dairy Supply Chain's Milk Road Map, *www.dairyco.net/library/farming-info-centre/business-management/milk-roadmap-one-year-down-the-road.aspx*
11. The Global Forest and Trade Network, UK, *www.wwf.org.uk/what_we_do/safeguarding_the_natural_world/forests/responsible_forestry_and_trade/forest_trade_network/*
12. European Union strategy for the Baltic Sea region, *www.ec.europa.eu/regional_policy/cooperation/baltic/; International Commission for the Protection of the Rhine, www.iksr.org*
13. Stockholm Resilience Centre Planetary Boundaries *www.stockholmresilience.org/planetary-boundaries*

The University of Cambridge Programme for Sustainability Leadership (CPSL) works with business, government and civil society to build leaders' capacity to meet the needs of society and address critical global challenges. Our seminars and leadership groups and our partnerships with those who make or influence decisions are designed to transform public and private sector policies and practices and build greater understanding of our interdependence with one another and the natural world. Our network of alumni brings together the most influential leaders from across the world who share an interest in and a commitment to creating a sustainable future.

CPSL is an institution within Cambridge University's School of Technology. We work in close collaboration with individual academics and many other departments of the University. HRH The Prince of Wales is our patron and we are also a member of The Prince's Charities, a group of not-for-profit organisations of which His Royal Highness is President.

UNIVERSITY OF CAMBRIDGE
PROGRAMME FOR SUSTAINABILITY LEADERSHIP

CPSL is grateful for the support of its Strategic Partners:

Anglo American, Arup, Deloitte LLP, DLA Piper, Kingfisher, Lloyds Banking Group, Maersk Oil, Nestlé, Shell

For full details, visit our website or call us on + 44 1223 768841

www.cpsl.cam.ac.uk

In the UK
1 Trumpington Street,
Cambridge CB2 1QA, UK
T: +44 (0)1223 768850
F: +44 (0)1223 768831
E: info@cpsl.cam.ac.uk

In Brussels
48 rue de Stassart
1050 Brussels
T: + 32 (0)2 894 9320
E: info.eu@cpsl.cam.ac.uk

In South Africa
PO Box 313
Cape Town 8000
T: +27 (0)21 469 4765
E: info.sa@cpsl.cam.ac.uk

In Australia
Level 5, ACA Building
118 Queen Street
Melbourne VIC 3000
T: +61 (0)3 96 42 0220
E: info.aus@cpsl.cam.ac.uk

In the United States
3440E Spruce Street
Seattle, WA 98111
T: +1 (206) 792 9984
E: info.usa@cpsl.cam.ac.uk

Designed by: www.adrenalinecreative.co.uk