

SUSTAINABILITY: IMPLICATIONS FOR UK SEAFOOD PROCESSORS

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ABSTRACT

This paper considers the implications of the sustainability agenda for seafood processors in the UK. A systems approach, using the value chain system as the conceptual framework, is adopted to capture the multifaceted and often subjective nature of 'sustainability' and accommodate the changing nature of competitive advantage. It is concluded that, for processors, sustainability means judging seafood not just on price and overall physical quality but on a range of other non-price factors. In responding to the sustainability agenda, UK processors can either pursue offensive or defensive strategies. Strategies should be based on an understanding of the issues in the context of the entire industry chain as success will be dependent on all actors getting it right. Finally the paper considers two contrasting case studies to illustrate the recent experience of UK industry in its handling of the sustainability agenda and concludes that strategies which involve actors across the supply chain appear more robust.

Keywords: sustainability, processors, strategy, systems analysis

INTRODUCTION

Sustainability is a key issue within the seafood industry that is already exerting important influences on the way the industry operates. It is extremely likely that these influences will continue to grow, not least because of increasing consumer interest in the food they buy, for example where it comes from and how it is produced.

At a very simple level, sustainable development means getting the balance right between economic, social and environmental priorities. The last 20 years has witnessed increasing attention devoted to the sustainability issue and as a result the agenda has a much higher profile. Sustainability and environmental protection is now a central plank of policy for many national governments, particularly more developed economies, and increasingly shapes values and guides policies. The extent to which sustainability has a much higher profile with the consumer is a moot point; however awareness of related phenomena such as global warming appears to be on the increase [1].

The sustainability agenda is important to UK processing companies, as it affects downstream purchasing decisions; influencing (some) consumers, and affecting the competitive position of retail and food service companies. As part of the Seafish range of strategic studies, this study set out to consider the implications of the sustainability agenda for seafood processors in the UK and how they might respond.

METHODS

The study adopted the definition of sustainability used by the United Nations World Commission on Environment and Development in its seminal report 'Our Common Future' [2]. This defined sustainable development as: 'Development which meets the needs of the present without compromising the ability of future generations to meet their own needs'.

Sustainability issues vary depending on the industry stakeholder. Issues tend to reverberate through the industry chain as actions of one stakeholder are interpreted and responded to by others. One of the most challenging aspects of the agenda is the range of different ways sustainability is interpreted. Sustainability is seen differently depending on the stakeholder. In the seafood industry this includes consumers, retailers, processors, the catching sector, non governmental organisations as well as governments. Moreover, rapid globalisation reveals that competitive advantage increasingly relies on the competitiveness of the industry system and not just the individual firm. To capture the multifaceted and often subjective nature of "sustainability" and the changing nature of competitive advantage, the study took a systems approach: using the value chain system as the conceptual framework [3].

The study relied solely on secondary research sources and then "validated" through interviews with industry stakeholders.

SUSTAINABILITY AND THE SEAFOOD INDUSTRY CHAIN

Using the value chain framework, the study sought to capture how sustainability affects customers, processors and suppliers and how the behaviour of these actors reverberates through the value chain.

Consumers

Consumer purchasing behaviour can be influenced by a range of factors that can extend beyond price or convenience and, for some, include social and environmental considerations. The market for organic produce and the growth in ethical purchasing, for example, demonstrates that some consumers are concerned about sustainability issues. In the UK ethical issues drive purchasing decisions for a minority of consumers, but potentially influence a majority[4].

Changing food products, preferences, habits and lifestyles influence the eating practices and purchasing decisions of consumers. These changes have important consequences for the food industry as they influence the volume of particular product types consumers will buy (eg convenience foods) and the price they are prepared to pay. A recent study[5] of global seafood consumer trends revealed increasing attention towards quality and food safety, and a greater concern about the health benefits of food. Such concerns often lead to a greater appreciation of food origin, environmental and social factors, as has been seen in UK agriculture since the outbreaks of BSE and foot and mouth. Research by

Mintel [6] suggests that ethical issues appear to be playing an increasing role in UK consumer purchasing decision and that the UK ethical food market is growing.

The recent increase in ethical purchasing, together with the existence of a large proportion of consumers influenced to some degree by ethical issues suggests scope for further growth in this sector.

Such growth may depend not so much on the behaviour of the small minority of ethically-driven consumers but more on the larger group of consumers with ethical leanings. There may be the opportunity to expand the ethical food market, if ethical purchasing can be made easier for interested consumers, i.e. the market is pushed by the industry. For UK processors, market growth could be achieved by securing a greater share of the protein market by competing on non-price factors.

Key questions for seafood businesses are whether responding to consumers' sustainability concerns can be achieved profitably and what the long term cost of failing to respond to these concerns might be. Key challenges are; whether consumers say they are concerned over issues but are in fact over-emphasising the level of concern; demands for information on product origin; and negative publicity through NGO campaigns, scientific research etc.

Retail and food service

UK consumer expenditure on seafood (in retail and food service) is estimated at £4.8bn for 2003 [7]. Expenditure on seafood can be split into home consumption through retail outlets and out of home consumption through food service. The sustainability agenda will have different impacts on retail and food service outlets, given their respective contexts and priorities.

The scale of multiple retailers means they play an important role in the market for sustainably produced foods. Five retailers; Tesco, J Sainsbury, Morrisons/Safeway, Asda and Marks & Spencer accounted for 70% of fish sales in the year ending 12 August 2004[8]. Not only are multiple retailers interpreting consumer demands for sustainably produced foods, they also play a large part in driving any growth in the market by influencing consumers and responding to lobby group pressures. In so doing they spur interest in sustainable catch and farming as well as driving developments in accreditation/traceability. Sustainability is important to multiple retailers for several reasons. These include:

- responsiveness to customer preferences: healthy and safely produced foods; ethically sourced products; reliably supplied and priced;
- maintaining competitive advantage through consumer trust and brand loyalty;
- avoiding undue expenditure of time and money dealing with lobby groups campaigning on sustainability issues.

In the for-profit food service sector, catering outlets are increasingly interested in where their supplies come from. In the seafood sector, this is leading some businesses to provide information on species and expand the portfolio of seafood species on offer. Businesses are also taking a stance on 'at risk' species by removing them from the portfolio and considering the practicalities of traceability.

In the non-profit food service sector (around 20% of total food service purchases of seafood), government policy is already driving the agenda by influencing public sector buying behaviour. Procurement guidelines emphasise 'value for money' rather than price alone. Non-price factors include product sourced from sustainable fisheries, seasonality, 'food miles', etc. Food procurement in the public sector in England alone (health service, schools, prison service, armed forces, etc) is estimated to be £1.8bn . This could represent an important niche market for seafood products.

Retailer and food service requirements for product sustainability standards raise a number of challenges for seafood businesses. Accreditation systems for sustainable stocks and farming continue to develop but still face major obstacles including the range of systems that exist and, in some cases, the limitations to certain species as well as the infancy of traceability schemes. Establishing consumer trust and avoiding contradictory messages will be important e.g. sourcing from sustainable stocks in distant locations. Finally, sustainable food procurement in government is in its infancy.

Seafood processors

In addition to being affected by customer and supplier attitudes to sustainability, UK processors are directly affected by environmental legislation, which can impact upon business operations. At a broad level, processor activity can produce solid waste, effluent, packaging waste as well as other outcomes such as energy and odour emissions.

The production of solid waste, effluent and airborne emissions raise environmental concerns as well as concerns over food and animal feed safety. Legislation is one means of reconciling sustainability with this aspect of seafood processing activity and recent years have seen increasingly stringent regulation in these areas.

Seafood processors must respond to their own environmental impact, their customer requirements (where customers may impose standards e.g. traceability, accreditation), as well as sourcing material from sustainable or responsibly managed stocks.

Sourcing raw material

UK processors bought around 1,780,000 tonnes of fish on the world market in 2003. Supply was largely composed of imports (65%), followed by UK landings (25%), and UK aquaculture (10% or around 184,000 tonnes [9]).

Future demand for fish (at current price ranges) is projected to increase markedly with the potential to outstrip the supply of fish sourced from capture fisheries. According to the

FAO, between 1961 and 1997 the total supply of raw materials has increased markedly. However projections for seafood demand and supply volumes to 2030 show a potential supply shortfall in wild catch as demand increases. This shortfall could be addressed by increased aquaculture production.

There are a number of sustainability issues relating to the supply of seafood as a raw material, varying by species type, fishing method and location. Some of the more important issues concern method of capture, status of fish stocks and fisheries management. Aquaculture production is attractive to processors and their customers as it offers a more stable fish supply delivered with greater efficiency, however aquaculture is in its infancy and not without its own set of environmental and social issues.

Specific challenges for the seafood processors are that some fish stocks at risk (including some of the most important species to UK processors) and some methods of capture can be destructive to the marine environment (e.g. trawling, by catch) whilst from a social perspective local communities can suffer from reduced fishing activity. Aquaculture could supply some species but can have a negative impact on local eco-systems. If UK processors are to offer sustainable seafood produce, or wish to avoid negative publicity concerning existing products, they will have to help address a number of issues in the supply of fish. These include; the status of some important species supplied to UK processors; the uptake of new fishing technologies by the catching sector that mitigate unwanted effects of some fishing methods; and the potential future shortfall between increasing demand and dwindling catch levels.

Sustainability in the longer term

The future of the seafood industry will be influenced by the development of longer term sustainability issues. Long term issues of sustainability include possible climate change, and the price and availability of energy.

Climate change may affect the eco-system and influence size of fish stocks and composition of fisheries; research by the Sir Alister Hardy Foundation for Ocean Science in Plymouth [10] suggests that climate change is contributing to changing fisheries.

The price and availability of energy affect the catching sector in terms of fuel consumption of fishing vessels, and the processing sector in terms of energy used for importing raw material, exporting material for specific processing, delivering product to customers and general operating costs. Pauly et al [11] have suggested that having passed the peak of global oil production we may see the future closure of the most energy intensive industrial fisheries, decommissioning of distant water fleets and a resurgence of small-scale fleets deploying energy efficient gears.

In the longer term, seafood processors are likely to face increasing uncertainty and rising energy costs. The challenge for UK processors is the development of flexible supplier relationships as fish availability fluctuates. Climate uncertainty may have to be factored

into fisheries management plans and some sources of supply, particularly distant supplies, may become uneconomic due to increased fuel costs.

STRATEGIC OPTIONS FOR UK SEAFOOD PROCESSORS

Opportunities and threats facing UK seafood processors

The sustainability agenda presents specific challenges to processors; both in terms of operational activities and other factors in the supply chain. Such challenges derive from downstream pressure (from customers, including consumers, retailers and food service), upstream pressure (from suppliers; the catching sector and the resource base) and pressure from external stakeholders (such as lobbyists and government in terms of regulation on business operations). Table I presents a summary of the opportunities and threats to seafood processors across the industry chain.

Table I: Opportunities and threats to seafood processors across the industry chain

	Opportunities	Threats
Consumers	<ul style="list-style-type: none"> ▪ Market products on non-price factors (sustainability) ▪ Secure greater share of the protein market 	<ul style="list-style-type: none"> ▪ Absence of agreed standards (accreditation etc) erodes consumer trust ▪ A large proportion of customers are price sensitive
Retail and Food Service	<ul style="list-style-type: none"> ▪ To develop product brands and therefore consumer trust ▪ Competing on non-price factors - advantages of local sourcing (lower food miles) 	<ul style="list-style-type: none"> ▪ Confused & cynical consumer - a plethora of standards for sustainability ▪ Cynical consumers basing purchasing decisions on price
Processors	<ul style="list-style-type: none"> ▪ Ability to exploit niche markets and/or secure market access ▪ Utilising waste by-products 	<ul style="list-style-type: none"> ▪ Environmental legislation will reduce disposal options ▪ Loss of outlets for example as: volume (price-led) market is serviced by smaller number of large processors relying on imported material ▪ niche markets are serviced by processors demonstrating sustainability credentials
Supply of raw material	<ul style="list-style-type: none"> ▪ There are alternative 'healthier' fish stocks ▪ Some farmed species are less damaging to the eco-system 	<ul style="list-style-type: none"> ▪ Some local stocks are under serious threat ▪ Damaging methods of capture continue ▪ Public tendency to believe NGO publicity e.g. Judging all Cod as North Sea Cod
Sustainability in the longer term	<ul style="list-style-type: none"> ▪ New sourcing options for processors: <ul style="list-style-type: none"> ○ new fisheries may open up ○ smaller scale, more localised fisheries 	<ul style="list-style-type: none"> ▪ Some current source options may close - fisheries may become uneconomic ▪ Relying on a specific species or supply may jeopardise viability

Future scenarios

The future is uncertain; although climate change and globalisation are trends which will impact on the seafood industry, the extent to which they will affect the industry is unclear. Climate change and associated impacts could dramatically affect ecosystems. Meanwhile globalisation presents unparalleled price competition from emerging economies such as those from the Far East, particularly China. Finally, in recent years concern over the pace of development and the impact on quality of life has generated the agenda for sustainable development.

From a business perspective, the findings suggest that, sustainability, at its simplest level, means judging seafood not just on price and overall physical quality. Customers may develop a keener interest in the environmental and social attributes of seafood products. As a consequence there may be a significant opportunity to compete on a non-price basis in the globalised economy.

The degree to which sustainability represents an opportunity, or a threat, to UK seafood processors depends not just on each individual company situation but also on future global conditions. Two future scenarios (based on recent UK Government strategy scenarios[12]) represent extreme future world views; “open markets” and “green conditions”. An ‘open markets’ world is a scenario where the world enjoys continued global expansion of free trade, which is aided by the removal of tariffs and subsidies. In this scenario, price is likely to be the dominant factor and the sustainability agenda presents an opportunity to compete on non-price factors. The ‘green world’ scenario, is a world in which climate change and associated impacts encourage an increase in environmental values. Transportation costs rise and there are increased restrictions on seafood capture and farming. In this scenario, non-price factors become important competitive drivers and the sustainability agenda is a threat as non-price factors may erode customer confidence, restrict market access, etc.

Strategic response

The actual future world is likely to contain aspects of both these scenarios, and perhaps others also. In response, UK processors can either promote sustainability factors as an *offensive* strategy to expand product attributes or avoid or mitigate factors having an adverse effect on sustainability as a *defensive* strategy to maintain product integrity.

A defensive strategy would require sourcing material from sustainable stocks, ensuring product traceability and operating in an environmentally sensitive way. An offensive strategy would build on these activities by pushing this message to consumers through branding or appropriate standards and by identifying and operating in niche markets

Whichever strategy is pursued, processors must consider the issues, in the context of the entire chain of activities that make up their route to market (Figure I). This is because the success of the response will be dependent on all the stakeholders getting it right; particularly powerful stakeholders (highlighted in red).

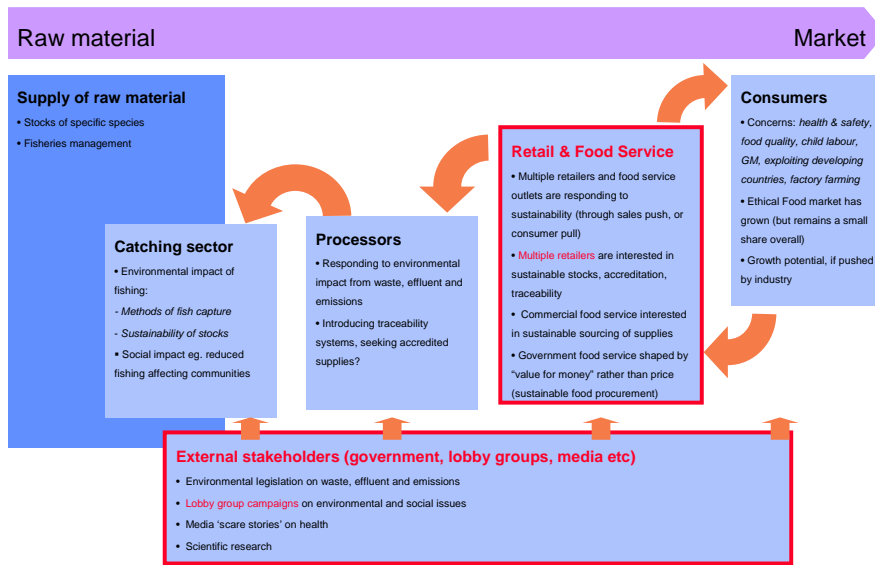


Figure I. Sustainability issues and cascading effects in the supply chain

RECENT EXPERIENCE IN THE UK

Recent experience in the UK reveals how industry has responded to the sustainability agenda. The experience is a tale of two strategies; industry on the back foot and industry on the front foot. The different approaches are described in the two case studies below.

In October 2005 Greenpeace published their report “*A recipe for disaster: supermarkets’ insatiable appetite for seafood*” which was highly critical of UK multiple retailers in their sale of seafood. The Greenpeace research considered nine multiple retailers and ranked them according to their approach to sustainable seafood (Table II).

Table II Ranking of supermarkets’ sustainable seafood policies

Supermarket	1. Sustainable seafood sourcing policies	2. Support for sustainability initiatives	3. Labelling & promotion of sustainable seafood	4. Selling the most destructively fished species	Total score (out of 20)	Fish share of Total Grocery (Value)
R1 Marks & Spencer	5	5	4	3	17	8.2%
R2 Waitrose	5	3	4	3	15	4.1%
R3 Sainsbury's	3	4	3	0	10	3.1%
R4 Co-op	2	2	2	1	7	-
R5 Somerfield	1	1	2	2	6	2.7%
R6 Tesco	2	1	1	1	5	2.3%
R7 Iceland	0	0	0	3	3	6.3%
R8 Safeway/Morrisons	1	1	0	0	2	2.7%
R9 ASDA	0	1	0	0	1	2.0%

Source: Greenpeace (2005). A recipe for disaster

Source: Seafish

The research was part of the radical Greenpeace *Oceans: Dead or Alive* campaign to encourage retailers to take sustainability seriously. Greenpeace [13] asked retailers to:

- *immediately begin the process of removing the most destructively fished species from their shelves;*
- *increase the range of sustainable seafood they sell;*
- *work with suppliers to source fish from only the least depleted stocks,..., improve sustainability of fishing methods and reject fish from fisheries and suppliers that refuse to change;*
- *improve seafood labelling ... so that consumers can make a more informed choice about the products they are buying.*

Greenpeace continued the campaign through direct action; occupying the roof of the ASDA (R9) headquarters in Leeds in January 2006, and the roof of Morrisons (R8) flagship store in Bradford in March.

Case study 1: Industry on the back foot

In general, UK multiple retailers are unsure how to respond to pressure from non-governmental organisations (NGOs). By design many of the large retailers move their buyers around to ensure supplier relationships are 'thin' (by maintaining 'thin' supplier relationships retailers expect to secure better deals). Where there has been retailer reaction, this has been piecemeal and often with loose use of language. Multiple retailers are pushing the sustainability issue, an ill-defined problem, onto suppliers (seafood processors) to resolve. The reaction of R9 to the Greenpeace campaign was to make a declaration that it would:

- remove shark, skate wings, dogfish (huss), Dover sole and ling from shelves;
- suspend sale of North Sea cod;
- stop selling swordfish within four months;
- label all its fish with exact nation of capture;
- move to only MSC certified wild fish within next 3-5 years.

In addition R9 called for the North Sea to be declared a marine conservation zone to preserve stocks for local fishing communities.

The reaction of some retailers sent shock waves through the supply chain. Suppliers of skate were particularly exposed; five processors supply skate to UK retailers (four of which are British). A typical skate processor has an average turnover of £2m and nine full time equivalent employees. With skate representing on average 79% of total raw material volume [14], two processors were threatened with closure.

As a result, the normally fiercely competitive skate processors, established the skate and rays producers' association. After initially considering legal action to compensate for loss of earnings, the group produced an information leaflet to counter NGO claims. The group also approached Seafish for support on how to respond.

In response, Seafish facilitated a stakeholder workshop to discuss criteria that would satisfy sustainability concerns. Attendees included Seafish, the Shark Trust, Scottish Natural Heritage and the Joint Nature Conservation Committee, Scientific and managerial representatives (UK fisheries scientists and Fisheries Departments, the ICES Elasmobranch Working Group members), retailers (R2 and R6), the skate and ray producers association and skate fishermen.

The discussion concluded that only one of between 9 -14 species of skate and ray is threatened; the common skate is a threatened species, other related species are not. It was also apparent that fishermen had specialist knowledge and that the limited number of skate processors meant they had a strong influence on fishermen. The initial discussion has resulted in a number of outcomes 1. A draft code of good practice to assist in stock conservation 2. Ensuring good practice recommendations are appropriate to specific needs of each fishery 3. Incorporating good practice into the Seafish Responsible Fishing Scheme and retailers buying specifications. The outcomes met the requirements of R2, R6 and R8 and provided sufficient safeguards for those retailers to retain skate wings on their shelves.

Case study 2: Industry on the front foot

The sustainability issue in this second case study arose in 2003 and centred on UK haddock. This species was being black listed by the Marine Conservation Society because of cod by-catch in the haddock fishery.

R1 was keen to ensure that haddock, the only blacklisted product in its seafood portfolio, was being fished sustainably in the light of negative press concerning North Sea stocks. Mindful of the potential for bad press, the retailer identified a risk that the product would be de-listed.

With a desire to support the industry and retain the product, R1 sought a solution to the issue. The retailer entered into discussions with the supplying processor, Cavanagh & Gray Ltd (now Coldwater Seafoods Ltd) – a secondary processing operation for R1, haddock fishermen, Seafood Scotland, Seafish and Scottish Enterprise. The result of this was the *sustainable haddock project*.

The initial focus of discussion was on changing fishermen's gear to avoid young cod, as the issue was perceived to be the by-catch of juvenile cod. However discussions revealed that juvenile cod were not being removed during the haddock fishery. The fishermen claimed the haddock fishery was very much targeted using the largest mesh sizes in Europe. Indeed the fishermen's argument was proven by an "at sea" observer programme, recording catch composition.

The outcome of the project was that R1 could maintain the provenance of haddock and that moreover these products were to be branded as "Scottish haddock". The sustainable

haddock project has continued since 2003 and has evolved to become the *promoting provenance* joint initiative facilitated by Seafood Scotland.

The initiative involves “meet the fishermen” events and in-store promotions. This provides opportunities for fishermen to understand consumer needs and allows customers the chance to speak to fishermen about how the haddock was caught and their lives at sea. Such promotions have resulted in a distinct up-turn in sales during each store visit. Over and above this, Seafood Scotland facilitate “listening groups” between R1, processors and fishermen and arrange fishermen’s visits to processor for factory tours, taste panels, and open discussion.

The initiative has ensured long-term commitment to Scottish haddock by R1 and has fostered well-established supply chain relationships from fishermen through to final consumer. The initiative has also led to a wider understanding of needs within the chain. For example R1 and fishermen now discuss the appropriate timing for new product launches. The focus of the work being undertaken by the processor on sustainability in particular, has been appreciated by the fishermen. One skipper was particularly impressed to discover the amount of work processors put in behind the scenes on issues such as sustainability and improvement of quality. *“We hadn’t realised how closely they worked with supermarkets on peripheral matters and their commitment was a real eye-opener for us”*. The ongoing commitment to Scottish haddock and langoustine by R1 was confirmed in 2005, and again in 2006.

CONCLUSIONS

Recent experience in the UK sheds light on multiple retailers’ strategic response to the sustainability agenda. Strategies have been offensive, defensive as well as absent (in the case of R9 who did not have a sustainability policy in place until after the Greenpeace campaign). In pursuing the strategies, the degree to which retailers have engaged with industry stakeholders has also varied

This reflects the competitive strategy of each retailer. For example R1 has traditionally competed on quality, R6 on quality and cost, and R9 on cost. Figure II plots the retailer strategies against the two future scenarios ‘green world’ and ‘open markets’. Retailers pursuing offensive strategies (R1, R2, R3) and defensive strategies (R4, R5, R6) are responding to sustainability concerns whilst R9 is competing on price/cost.

Success in a ‘green world’ will demand greater stakeholder collaboration. If the future tends towards this world scenario then R1-R6 will be much better positioned as they have, to some degree, reviewed their products and established supply chain relationships. Such a scenario would suggest R1-R3 are on the front foot and R4-R6 are on the back foot. R7-R9 risk being seriously exposed and this highlights a potentially important threat to processing companies supplying to these retailers. The threat becomes a considerable one if retailers R7-R9 decide it is easier to abandon the sale of seafood in order to protect their corporate reputation (Table II shows the relatively low fish share of total grocery value).

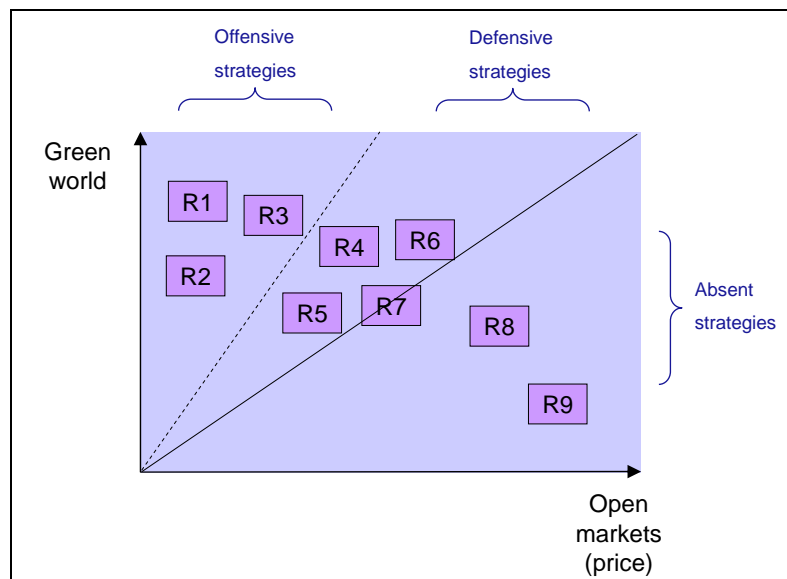


Figure II. Industry sustainability strategies placed against future scenarios

In conclusion, the case studies reveal that successful strategies would appear to be those that involve dialogue focussed on action. It is important for industry to recognise that relationships across the chain have as much influence on events as the circumstances of any one stakeholder. This has important implications not just in terms of what strategies are selected in response to the sustainability agenda but how those strategies are developed and pursued.

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